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SUSTAINABLE DEVELOPMENT INDICATORS: SCIENTIFIC ISSUES AND METHODOLOGY OF WORKING-OUT

Poteiv A. T., Mabiala Gilbert

V. I. Vernadsky Crimean federal university, Simferopol, Russian Federation
E-mail: gilmabiala@mail.ru

This article is a framework for the studding of synthetic indices of sustainable development and weights, between the concept of economic development and environment, among others and the expectations of future generations, etc., resulting from multidimensional debates. The most urgent task is to bring to light an audience able to carry out these trade-offs. Indicators have an important role to play in shaping this public. In the content that follows, our discourse envisages to draw a line in order to construct information systems for the sustainable development which are appropriate, that is to say, adequate, relevant and assumed by all the actors of the development.
Keywords: composite indicators, integrated development, concept, sustainable development, economy, society, multidimensional debates, ideological anteriority, economic indicators, socio-economic and environmental indicators

INTRODUCTION

The concept of sustainable development is an old position that has long been expressed in the form of «balanced growth» in so-called intermediate and developing economies common in the 1960s and 1970s. This concept, which is of macroeconomic doctrinal origin, concerns government policies but has gradually been adapted to the work of various state organizations, including non-governmental organizations.

In its most recent conception, sustainable development refers, on the one hand, to elements integrated into the rhythms of environmental issues and, on the other, to internal policy elements in the field of socio-economic, human resources and project financing of development.

Faced with questions about the paths to sustainable development (economically efficient, socially equitable and ecologically sustainable), there is a need for an appropriate strategy and statistical arsenal. Many researchers have favored a pragmatic approach based on a corpus of statistical indicators, which are supposed to reflect the various dimensions of sustainable development.

Composite indicators, obtained by aggregating heterogeneous elementary indicators, attempt to give a synthetic vision using a single indicator, but raise the problem of the relative importance of different dimensions. Instead, within a unified valuation framework, comprehensive indicators of sustainable development have emerged. Even if these indicators can usefully illuminate a particular facet of sustainable development, none has yet succeeded in establishing itself as a single international reference in this field, if only because of the normative choices they cover. In the medium term, it is difficult to escape from a renewed accounting approach integrating the environment. Developed in a harmonized international framework, it should make it possible to better describe the interactions between the economy and the environment. Its generalization remains

conditional on the establishment of adequate statistical tools.

The proposed communication addresses the issue of the work of various organizations on sustainable development, in conjunction with the conceptual analysis. If the concept of development is old, the term sustainable is more recent. It refers to the long term and implicitly indicates that development carried out without any control or regulation generates distortions and externalities which, in turn, will undermine the conditions of profitability of the capital invested in the firm. In principle, the treatment of externalities comes under the logic of opportunity costs. But this approach, although rational, is very insufficient. It considers the company as an organization under external constraints, in a context of inter-individual relations. This reductive vision makes it impossible to discuss industrial relations, economic relations or social relations between organizations and individuals. We propose to examine successively the foundations of sustainable development, the prescriptions for sustainable development, before carrying out a conceptual return on sustainable development.

«Many international organizations and research teams, such as the Organization for Economic Co-operation and Development in 1994, the Commission for Sustainable Development in 2001 or the European Environment Agency in 2003 thus launched in the development of IDD. More recently, steps have been taken to set up national IDDs (Ayong Le Kama, 2004; CNDD, 2003; IFEN, 2001a, 2003)» [13, p.6].

The advantage of indicators compared to other evaluation tools is that they have the particularity of indirectly evaluating what is too costly to measure directly.

RESEARCH RESULTS

The result material consists on a summary of the theoretical and experimental outcome of the studied problem. They should include a concise, systematic description of the outcome as well as tables and figures, showing legends explaining the sources where this material was obtained.

1) The foundations of sustainable development intends to advocate on the following issues [13, p.8; 14, p.231]:

– Ideological antecedents, economic growth generates externalities. It was the Club of Rome that popularized in the 1960s the idea that growth had negative effects. It was a macroeconomic vision. The work of this group of experts was nonetheless premonitory [1]. They have themselves addressed the issue of sustainable development in their more recent work [2]. The idea of a balanced growth that takes into account the human dimension is therefore not new. R. Lattès stated in 1972»... we urgently need a multidimensional definition of growth that integrates everything that seems reasonably inherent in the development of individuals and societies.

«On this dynamic, mention should be made of the work of François Perroux, who undoubtedly in the 1960s contributed most to conceptual research on development. The systemic glances of F. Perroux, J. Galbraith, Ph. Iribarne have to distinguish between growth and development. In this respect, growth reflects an increase in the real overall product over a period of time; And development produces harmonized growth [5,p.1], ie ensures progress. To this end, all the ingredients of the concept of sustainable

development were already present in this approach. Some authors had considered this question on the basis of considerations related to the individuals themselves, in particular by developing a problematic based on socio-economic needs» [14,p.234].

– The focus is on the role of multinational firms. The implications of the activities of firms and especially multinational firms will concern many economists in the 60s and 70s (François Perroux – 1967, Galbraith John Kenneth – 1968, Charles Albert Michalet – 1976, Michel Delapierre – 1976, Wladimir Andreff – 1976). In a vision that was also premonitory, René Gendarme (1981) set out a principle that would prevail in the contemporary approach to sustainable development: «Multinational corporations could play a more important role than is generally accepted in the setting – A prosperous global economy, provided that multinationals are not held accountable to themselves but to others» [10,p.22].

2) This conceptual position was not spontaneous. It was born under the constraint of the need for integrated functioning and the need to preserve «stakeholders» increasingly sensitive to environmental effects (customers, public authorities), the quality of social relations (trade unions), and later the nature of activities (ethical pension funds) and «militant actions» [5,p.1].

– The recent evolution of the concept of sustainable development «Sustainable development is presented as»... one of the answers to the inconsistencies of a chaotic world (G. Férone, CH of Arcimoles, P. Bello and N. Sassenou – 2001). Reflecting the conceptions of the 1960s, the concept refers to the idea of a balanced growth model, in a completely new context of growing uncertainty, financial turbulence. The sense of corporate responsibility for this balance is growing. It is implicitly based on the idea of a possible control of their externalities. On this point, the authors emphasize the difficulty of identifying the concept when it comes to overcoming the conception in the Brundtland report [9] that sustainable development refers to a «development that satisfies our needs without compromising the generations Future, the satisfaction of their own needs», «Sustainable development is not a new theory, much less a new line of thought. In fact, this concept reformulates a whole series of modalities for the functioning of organizations to set out principles that must guarantee a better general equilibrium» [11,p.2]. In fact, it is the problem of the optimum since it wishes to preserve the interests of all within the framework of a general equilibrium.

We must accept that, at the global level, the United Nations organization develops a global and global conception of sustainable development. The sources of the recent approach to sustainable development are multiple the ideas of sustainable development, socially responsible investment, ethics in the company, have nourished many reflections in recent years. In line with the tracks opened in the 1960s, this conception integrates the internal social dimension of the company and the managerial dimension.

The work of different authors and specific initiatives makes the understanding of the topic and the positioning of stakeholders on the issue of sustainable development difficult and challenging. But every time we propose an evaluation model that federates references to the most successful work initiated by the main international bodies [14, p.8; 16, p.4]:

a) the OECD Guidelines for Multinational Enterprises;

b) the Declaration on the Fundamental Rights at Work of the ILO;

c) the responsible care program:

d) the work of the «Word Business Council for Sustainable Development»;

e) Global Reporting Investment;

f) the United Nations Global Compact.

– The conclusion of the sustainable development approach: a combination of environmental approaches on the one hand and human resources management approaches and business strategy on the other hand Pascal Bello (2001) clarified the concept of sustainable development. Underlining the frequent confusion between the concept of ethics and ecological voluntarism, he states that this concept is not precisely defined, but refers to the social, societal and environmental responsibility of the company.

Among other things, although for the time being the concept of sustainable development is not validated economically, there are events that make it credible:

– rising ecological risks;

– media coverage of certain events (ecological, social);

– the globalization of economies and trade which calls for new (global) modes of regulation; the influence of NGOs;

– the arrival in the management of companies of the post-68 generations;

– the rise of the human resources function in companies;

– development of certification models;

– the rise of the rule of law (eg French draft law on the prevention of technological and natural risks).

The conceptualization of sustainable development implies taking into account its various dimensions (multifaceted concept), in particular the fields concerned, as indicated in the work of several authors [8], [13], [14]:

– technical and social fields: productive function;

– social function (social progress and human rights), environmental function (preservation of the environment);

– policy area: internal relations and external relations, which must be put into perspective in the light of cultural differences and differences in the levels of technological development.

From what is said above, it follows the question of the formation of indicators relating to the calculation of socio-economic synthetic indices, human and demographic development etc.

The exception of the index of human development is however illuminating: without the guarantee of the Nobel Prize in economics A. Sen [3], it is a safe bet that he would not have passed the ramp, either. To look at it more closely, it is not so much the indicators as such that encounter resistance (especially among scientists) as well as synthetic indices or indicators. There is hardly any opposition, on the contrary, to the multiplication of dashboards of all kinds, that is to say, sets of indicators, whether in the field of the environment or the social.

On the other hand, the construction of indices, especially that of the index of human development, triggers reactions such as that of J. Baneth, for example, who goes so far as to write that: «It was vain, pretentious and slightly Ridiculous attempt to summarize in one figure human development in all the complexity of its many dimensions ...» [15,

p.10].

Yet the only difference between a dashboard and a synthetic index is in the final stage of the construction and measurement process. In other words, a synthetic index is nothing more than a dashboard to which has been added a supplementary indicator constituted by the aggregation of the data contained therein. But it seems that, for some, this ultimate step makes the difference between a rigorous, serious scientific approach and a subjective, ideological and ultimately fanciful exercise.

It follows from design to the construction of sustainable development indices:

1. Concept (1.1. Conceptual analysis, 1.2. Evaluation of the conceptual model).
2. Dimensions (2.1. Identification and selection of variables, 2.2. Measuring scale).
3. Indicators (3.1. Weighting).
4. Indices (4.1. parameters aggregation).

According to the parchment above – The first step is to identify the different dimensions that make up the concept, knowing that it is mostly multidimensional. The notion of poverty, for example, covers a material dimension, but also a social dimension and a cultural dimension. The material dimension itself is multiple; It includes both financial and non-financial elements. Each of these material dimensions is itself more or less composite.

From dimensions to indicators. The various dimensions are then broken down into variables, some of which will be used as indicators, either because they appear to be particularly relevant or because they are more readily amenable to measurement. While the selection of indicators is often based on an appreciation of the constraints of observation and measurement, it nevertheless always contains theoretical elements. «For example, on poverty, the theoretical question that will condition the nature of the income indicator is: is poverty an absolute or relative reality? In the first case, it will be necessary to set a poverty threshold by calculating the sums necessary to cover the essential needs, which must be defined beforehand. In the second, a reference level (median or median of the distribution) and a deviation from it (40%, 50%, 60%?) Should be set and the appropriate scale (household or The individual?) To measure the phenomenon» [13, pp.4-6].

From indicators to measures. Once the indicators have been defined, they must be measured. Most often, the indicators will not have the same degree of precision and will not even be measured in similar units, which obviously complicates the aggregation process. «Thus, the concept of social status, operationalized by indicators such as length of schooling, level of education, income and occupation, combines information of pure quantitative type (income), semi-quantitative (educational level) And pure qualitative (the profession). It is often necessary to reduce the units and scales of measurements to the most basic and least demanding level with all the implications for loss of information» [6, p.12].

Measures to the index. The last operation consists in aggregating the various indicators into a synthetic index. To be aggregated, indicators must be able to be expressed in a common unit. This is obviously the case for monetary indicators such as GDP, the price index, etc. But in the absence of a natural common unit such as money, the different indicators must be standardized.

There are several methods of standardization, none of which are fully satisfactory. «Statistical standardization consists in expressing all the values in standard deviations, after having transformed the variables so that their mean is equal to zero. It is inapplicable in the context of social indicators. Mathematical normalization is to be ruled out because of its lack of transparency» [12, p.1].

Different techniques of empirical normalization can be used. One of the most common is to use a base year as the basis for calculation and to express all subsequent values as a percentage change from that initial value.

This approach lends itself well to an analysis in terms of progress or regression in relation to an initial situation. Another method consists in giving the value o (min) to the observation considered as the worst and 1 (or 10 or 100) to the one that corresponds to the best score (max).

«All intermediate values are then calculated according to the following formula:

$$Y = X - \frac{min}{max - min}$$

in order to remain within a scale ranging from o to 1 (or 10,100 ...). The procedure for an axiological normalization is identical to the empirical normalization with min and max terminals, except that the boundaries are chosen according to the context, the situation from which we want to move away being assigned the value 0 and that, which is considered the ideal to achieve receiving the value 1» [13, p.3].

It is clear that the choice of the method as well as the maximum and minimum limits used for standardization are not without consequence. The more or less arbitrary nature of the choice of min and max values even in the case of empirical normalization argues for the adoption of a normative approach and therefore for the maximum values chosen to correspond effectively to objectives to be achieved.

«Aggregation. Aggregation involves answering the following questions. Should all the criteria be assigned the same weight to constitute the index or should different weights be assigned to them and, if so, how? What is the relationship between the index and the indicators? Is it a sum, a product, something more complicated? In practice, the two questions most often relate to the dilemma between a simple average and a weighted average. The question of weighting is crucial and eminently delicate. The dimensions and indicators constituting an index can be represented in the form of a tree. At each branch, it is possible to attach a weighting to the branches that originate there» [4, p.1].

The figure below shows such an example of a tree structure of the concept of sustainable development (fig.1). Only the economic branch is developed further, with two constitutive dimensions, performance and resilience. Performance is assessed using two indicators, the growth rate of GDP and productivity. «The process of cascading the indicators is illustrated by the final weight of each indicator, the product of all upstream weights and its own. Thus, the GDP growth rate is assigned a weight of 0.158, i.e. the product of 0.8 (its specific weighting), 0.6 (weighting of the «*performance*» branch) and 0.33 Weighting of the «economic» branch)» [11, p.6].

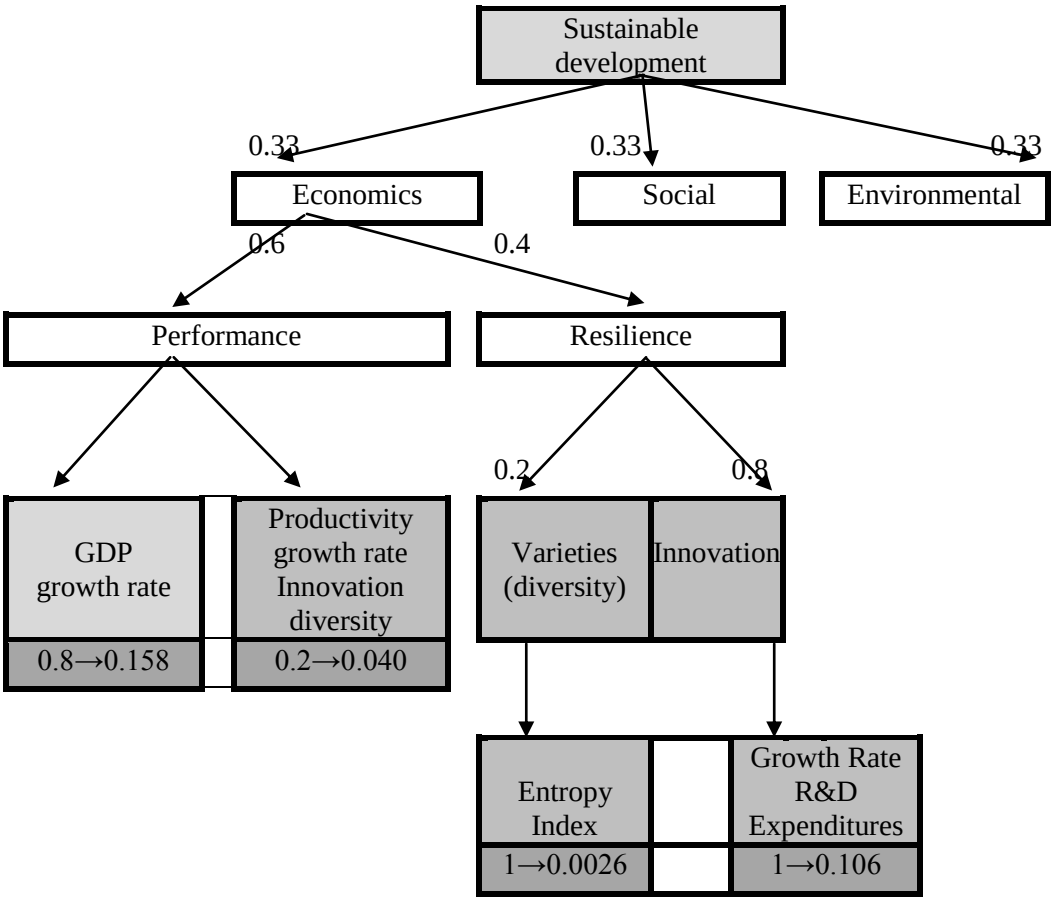

Figure 1. Elements of dimensions and sustainable development indicators
Sources: Paul-Marie B. [13, p.3].

«Weighting. Although standardization and aggregation methods pose serious theoretical and practical problems, it is mainly at the level of the weighting that the scientific challenges and the main democratic stakes lie. As per B. Perret (2002: 27)» the intrinsic theoretical weakness of the synthetic indicators is evident (it is difficult to justify rationally the weights used). «Indeed, on what basis and according to for example, for 45%, social for 35% and environment for 20%. Does this not mean that the crucial question of the possible substitution of different forms of Assets?» [14, pp.5-6].

Is not the intrinsic incommensurability of the domains to be compared not an irreducible obstacle? Yet in all decisions, whether individual or collective, there is an ongoing process of arbitration – most often unconscious and implicit, economic growth or the protection of the environment, etc. And, precisely, the demand for sustainable development implies evaluating these trade-offs in the light of ethical and scientific criteria. And it is precisely because it forces us to put on the political agenda re-evaluation of the trade-offs and weights, of which social life is made, that the construction of

synthetic of sustainable development's parameters in very important.

Only a democratic deliberation between citizens selected randomly and independent of any pressure group, respecting the procedures experienced in mechanisms like citizen juries, planning cells or hybrid forums allows the expression of a genuine general will. The existing advisory councils are, in this respect, the worst solution.

It follows the question – What audience for indicators? «It is impossible to understand the reasons that disqualify the synthetic index option to retain that of the dashboard if one disregards the user for whom the information is intended. It is precisely here that indicators of sustainable development come into play. The «aggregate» model of liberal democracy considers the political process as a simple arbitration by voting between preference given a priori and formed before the electoral process. In this context, social indicators would not Limit, hardly any role to play» [14, p.2].

There is, however, another model of democracy, the «*deliberative*» model in which the political process is precisely concerned with the creation of a common vision of the good - or the just - voting is less important than deliberation. Is the legitimacy of decisions, rather than voting or negotiation between parties seeking to defend their private interests, which makes it possible to transform the «*pre-reflexive*» preferences, constituted ex-ante, in ex-post reflexive preferences, capable of transcending the particular point of view and taking into account the common good.

The public is born, asserts itself and disappears according to the external conditions which make activities that once had consequences of consequence become inconsequential, while other activities whose effects prove to be «stable, uniform, recurrent and Irreparable character» It is the modification of material conditions (mainly technologies) that plays the main role in these changes. The public that is formed around these issues must still structure itself, find the appropriate political organization and seek, Thanks to this social survey, whose indicators of sustainable development constitute an essential part, the information necessary for its action.

«The space of sustainable development. What are the dimensions of sustainable development? To answer this question, one must first agree on the type of object to which it refers. There is no consensus on this point. Looking at the different lists of indicators of sustainable development, we are confronted with an impressive diversity of approaches. In a some what schematic way, it seems possible to see four main reference classes: socio-natural sectors (or systems); the resources; men; standards. Moreover, in the couple formed by the noun «development» and the adjective «durable», the emphasis can be placed on one or the other term. For example, Action emphasizes sustainability. Table 1 presents the dimensions of sustainable development in terms of the four identified objects and the development-sustainability pair» [13, p.5].

The last line of the table indicates the institutional level for which the approach described seems the most appropriate.

«The sectorial approach (in terms of «pilfers»). In its most popular form, the sectorial approach is limited to the pillars of sustainable development: economic, social and environmental as separate «domains» This approach focuses on sustainability as a form of Balance between the evolutions of these famous pillars» [9]. On the other hand, the development dimension is hardly analyzed. It is undoubtedly regarded as self-evident and,

in fact, assimilated to economic growth accompanied by certain social conditions (not too much unemployment, social security more or less developed) and environmental factors (air and water quality, pollutions, nuisances).

Table 1

Balance of economic, social and environmental sustainable development indicators

	Area of dimensions of sustainable development			
	Sectors Systems	Resources Human's Capital	Hommes (people)	Normes (Standards)
Development			Wellness (Welfare) Capabilities Functions	Efficiency Participation Freedom
Sustainability	Balance Decoupling Co-evolution	True saving Ecological footprint Maximum sustainable yield		Equity Efficiency Resilience Caution Prudence
Scale	State Region	State Places	Civilization	Local - Global

Sources: Paul-Marie B. [13, p.5].

This conception of sustainable development is probably the least disruptive of the dominant political and ideological presuppositions, hence its relative success in the political and industrial circles of the rich countries. In addition, it endorses the disciplinary divisions of the «scholarly city», as well as the institutional divisions of so-called neocorporatist democracies or, in more or less influential advisory councils, employers representatives sit beside representatives of workers and those of environmental organizations, the first identifying with the economic, the second with the social and the third with the environmental.

«The worked-out of corresponding indicator systems is also greatly facilitated: it is the result of negotiations between these three social forces with the help of experts and scientists whose mission is, more often than not, to Environmental pillar that is a little too deformed compared to the «big arms» of employers and trade unions» [8, p.2].

The result is generally a balanced scoreboard of economic, social and environmental indicators, which will obviously not be aggregated into any synthetic index since, by definition, it is the balance between the pillars that matters.

The approach by the pillars or sectors to the disadvantages of its advantages. Its major disadvantage is a risk of insignificance. It is feared that, being overly consensual, it will eventually ignore the real demands of sustainable development and will not prepare us to face up to the challenges that lie ahead. In the end, one could almost speak of recovering the concept of sustainable development when one sees certain uses that are made of it in the business or political circles.

The approach in terms of resources. The resource approach is also silent on the issue

of development. It is resolutely oriented towards sustainability, either in the limited sense of the sustainable use of natural resources or in the wider sense of transmitting an aggregate stock of productive capital per capita sufficient to enable future generations to produce goods and services necessary for their well-being. Virtually all synthetic environmental indicators can be listed here: the *Ecological Footprint, the Environmental Sustainability Index* (ESI), the Ecosystem Wellbeing Index (EWI) – most of these parameters shall be strongly called sustainability perspective, that is, low (or even no) substitutability between natural and produced capital.

Some opposite hypothesis radically must be used in the ways of sustainable development indicators working-out. It's according to monetary indices, based on the measurement the degree of real national economy enrichment, the levies on the natural resources and the cost of environmental damage, as well as external debt, but with the addition of health and education expenditures, which are considered an investment in human capital. True saving is therefore only an indicator of intergenerational equity. It does not indicate to what extent the requirement of intra-generational equity is satisfied. Moreover, it presupposes a perfect substitutability between the three forms of capital taken into consideration: natural capital, produced fixed and variable capital.

The approach in terms of well-being. While the concept based on the resource approach ignores the definition of development. Since development is understood here as the increase of well-being for the greatest possible number of human beings, today and tomorrow. Contrary to what this formulation might suggest, the welfare approach does not necessarily mean adherence to the dominant utilitarian agenda in welfare economics. Indeed, if one adopts the theory of A. Sen which rests well-being both on agency and wellbeing and which distinguishes the capabilities (capabilities) from Functioning, one finds oneself in a philosophical context far removed from utilitarianism. One can also credit. A. Sen for being the first economist recognized by his peers to propose a multidimensional vision of development centered not on economic growth or on increasing monetary income but on the extension of freedom Real for men to come true.

What he believes contributes to the well-being of an individual is not the basket of consumer goods to which he has access, but what he can do with the characteristics of these goods themselves, Personal characteristics, both physical and mental, as well as social characteristics and external circumstances. These three sets define what Sen calls functions.

As far as capabilities are concerned, they refer to the possibilities for an individual to be and act according to his or her own goals and values («Peoples capabilities to lead the lives they value». In the end, to broaden the range of capabilities available to individuals and thus the range of desirable life choices accessible to humans. In scaffolding his theory of capabilities, Sen seeks to make possible an evaluation of «*Societal arrangements*». On the other hand, he puts out the theory of social choice of the rut in which it had been bogged down. Since Arrow had demonstrated that there was no mechanism of social choice that simultaneously satisfied the requirements of rationality and democracy on which each could agree. For, Sen says, Arrow's theorem of impossibility has been misunderstood: «... what he establishes is not the impossibility of a rational social choice, but the impossibility that results from a social choice based on a class of information that

is too restricted» [14, p.8]. «The solution to the problem posed by Arrow therefore consists in widening the information base on which to base social choice. This expansion involves taking into account capabilities and functioning» [15, p.16].

The approach in terms of well-being has also been worked-out the synthetic indices. Consider, for example, the HDI, the ISEW, the IPG, the CDM, etc. Note that, with the exception of ISEW, none of these indices attempts to integrate the dimension of sustainability.

The approach in terms of standards. The noted three conceptions of sustainable development, in terms of pillars, resources or well-being, adopt a substantial definition. In Table 1, we have, as an example and under the benefit of an inventory, characterize the «Development» dimension by respecting the standards of efficiency, participation and freedom. In the «Sustainability» box, we have Equity (inter and intra-generational), efficiency, resilience and prudence (prevention and precaution). These choices are based on the logical framework for development projects submitted for funding to international institutions such as the European Commission. Projects must meet the requirements of efficiency (achieving the targets effectively), efficiency (doing it at the lowest cost) and viability (being sustainable). We added participation and freedom for the development component; equity, prudence and resilience (which could potentially be replaced by sustainability) for the sustainability component.

«The place of freedom and participation in the «development» framework is, we believe, justified by Sen's analyzes of development as well as by all the work that is in line with an ethic of development. Its importance for sustainable development has been acknowledged at the Rio Conference and is repeatedly recalled in Agenda»[18, p. 20]. As a result, participation can't be implies that the citizen has the means to make his voice heard in all decisions likely to affect him, and this at all levels and in all fields, including the economic one.

We have included in the sustainability standards the two forms of equity constituting sustainable development, intra-generational equity and intergenerational equity. The efficiency in question is not limited to economic efficiency as defined by cost-benefit or cost-effectiveness analysis procedures. It is indeed a global efficiency, concerned with all the scarce resources, namely natural, human, social and cultural resources. In reality, once the requirement of double equity is given, the other standards become somewhat superfluous. Indeed, it is in the name of equity that it is important to make the most efficient use of scarce resources, to adopt a prudent attitude and thus to respect the principles of prevention and precaution, ensuring the sustainability of systems, etc.

While many indicator experiments refer to some of the standards mentioned here, such as equity, efficiency or participation, there are, to our knowledge, no examples of indicator systems built in priority Terms. The listed indicators were being adopted in 2003 by Sweden focuses on the following contents: efficiency, equality, values and resources for the coming generations.

Despite the difficulties in its implementation, the normative approach has the merit of focusing on development policies, projects and policies and refocusing on the real foundations of the idea of sustainable development [18, p.22].

Synthesis about different approaches. Of the four perspectives discussed, only the

one in terms of standards can be considered complete, since it informs us as much about the standards of development as those of sustainability. The resource-based approach ignores development and the one on well-being ignores the issue of sustainability. But, of course, these are ideal types, pure models. In fact, the different approaches are intertwined. And from this point of view, the combination of well-being and resources seems the best compromise to guide a process of building a sustainable development information system.

On this basis, one could imagine a hierarchy (tree) with, on the one hand, the synthetic indicator of well-being and all its components and, on the other, the synthetic indicator of environment, which also decomposes in its core indicators.

There is a strong negative correlation between EF (Ecological Footprint) and the three human development indices. The same applies to EW_1 and ESI_2, but with a lower intensity than for EF. On the other hand, the various socio-economic indices are positively correlated with each other and the various environmental indices, with the exception of EW_1 and EF, which move in opposite directions. These indications point to a tension, even a contradiction, between the pursuit of socio-economic objectives and certain requirements of intergenerational justice. We are convinced that this tension would be much less noticeable when reading a scoreboard or a list of dozens of indicators. On the other hand, there is nothing to prevent an in-depth exploration of this contradiction, which the synthetic indices make apparent and to look for its causes and manifestations in the basic parameters used during the calculation of indices.

Table 2

Correlations between socio-economic and environmental indices

HDI	HWI	HALE	EWI	EF	ESI_1	ESI_2
100.00						
95.38	100.00					
94.67	90.10	100.00				
-24.21	- 23.62	- 2775	100.00			
-90.58	- 87.89	- 83.88	27.46	100.00		
7.00	9.69	- 2.01	14.28	- 12.44	100.00	
-26.54	- 18.73	- 25.21	9.28	30.22	24.31	100.00

Sources: Paul-Marie B. [14, p.5]

Sustainable development indicators should reflect economical, social and environmental aspects to meet the needs of the current generation without restriction needs for future generations to meet their own needs. To development could be considered sustainable, it must take into account the achievement of economic growth, but while ensuring its balance with the needs of society to improve the quality of life and prevent degradation environment.

The indicators are designed to solve these problems on regional level:

1) Definition of objectives:

– identification of the specific objectives of sustainable development policy

quantified;

– development of strategies for future development;
– prediction of the effect of the planned activities.

2) Control:

– monitoring the achievement of sustainable development;
– assessment of progress;
– evaluation of the effectiveness of policies used previously;
– information for planning and decision-making authorities;
– improving the quality of management decisions at the regional level, taking into account the positions and interests of different groups.

3) An evaluation of the region in the country and the world:

– inter-regional comparisons, justification of transfers;
– the region's relations with the international community,
– attracting foreign investments, programs, grants.

4) Public participation:

– information, education, relationship with the community and the individual groups;
– public involvement and participation in civic activities;
– corporative social responsibility.

In the context of the development of certain policies and in connection with the stability of the indicators listed tasks must be performed the following functions: identify and express the goals arising from national / regional strategic programs. indicators reflect the key objectives and activities identified in the framework of regional development programs and programs Socio-Economic Development of the Russian Federation.

This will give the possibility to set a number of targets for each indicator, thus ensuring a more a clear vision and understanding of the general policy objectives.

To provide a basis for assessing progress in implementing these policies at various levels (technical and management purpose). Indicators make it possible to carry out the measurement, monitoring, evaluation and analysis of the rate and efficiency of movement towards the achievement of sustainable development and, if necessary, adjust the general policy of such way to steer development in the right direction, ensuring its stability. This also enables transmission responsibility for the achievement of certain individual targets for different departments (eg, health status, or employment) or even to carry out a (partial) performance evaluation certain elements of the governance structure to achieve certain policy objectives;

Indicators can also be used to provide information to support the planning and decision-making processes and other regional administrations of Great agencies and organizations. This is advisable especially to inform about the consequences and results of the implementation of special programs for sustainable development, adopted in separate agencies and organizations, so that these consequences and results could be analyzed in a broader context. For example, indicators can be used as a basis for assessing the long-term sustainability policies and programs for the implementation of socio-economic activities as well as to determine the additional opportunities for more active participation individual organizations in ensuring sustainable development, that are not so apparent to

be detected during the first examination.

Ensure public awareness of the implementation strategies of the pace of movement towards sustainable development in a clear and accessible form, capable of stimulate the necessary changes in the behavior of the population.

Development of indicators of sustainable development is possible on the three levels: national or regional (region, territory, autonomy and others.), local / local (districts, municipalities, cities, etc.).These three levels can develop their own a system of indicators that have individual characteristics. Thus, the indicators developed at the federal level. It will not always be equally beneficial for various levels of government.

CONCLUSION

It is for not having perceived this dual nature of the indicators, that the movement of social indicators became entangled and finally disappeared completely. The «movement» of sustainable development indicators also runs the risk if it loses contact with the public in the sense that Dewey gives to this word. It was necessary, he said, to transform the Great Society of the era of the machine into a Great Community, that is to say into a great democracy. It was necessary that a scattered, mobile and multifaceted audience could identify, define and express its interests. For Dewey, «the only possible solution: the improvement of means and means of communicating can give shape to desire and effort and, in this way, leading to the action».

In this respect, science, especially social science, had an important role and responsibility. It was incumbent upon it to explore and analyze these consequences and to communicate its results as widely as possible in order to bring about this public, a community capable of regaining control of the consequences of its actions in the face of the new challenges of globalization and globalization. technology. This task is more important than ever.

Thus, the most important provisions of the concept of sustainable socio-economic development has directly applicable to the regions of the North Caucasus Federal District. The study area has the potential for rapid progress towards sustainable development. This are the wealth of natural resources, human potential, the level of the state of manufacturing industries, science and education.

However, the potential economic opportunities country subjects not quite the same. Of course, the stability problems of socio-economic development of regions with different levels of economic potential should be resolved taking into account the peculiarities of the particular subject.

Analysis of the socio-economic situation in the region, aimed at developing an active policy of sustainable development, has shown that in the investigated macro-region requires a special approach to solving the problem of stability associated with the structure of the region's economy, its demographic, ethnic and religious composition of the natural conditions, the state of use of subsoil and

promising opportunities.

Worked-out such analysis has shown that to ensure sustainable socio-economic development of the region is necessary to observe a certain hierarchy of objectives and priorities related to the peculiarities of border and coastal region. Three kinds of problems are appointed:

The first one is to ensure social and economic stability for the said subject is to create conditions for functioning and development of the industry. Previously, the industry had a dominant position in the entire economic structure of the region and ensuring its economic and social potential. It is characterized by its predominant position in the production of gross regional product, the structure of fixed and working capital, in the proportion of employment of the active workforce, in the provision of public consumer goods, to ensure the profitable part of the budget of the region and, consequently, the possibility of solving it faces social problems. Today it is necessary to return the previously lost ground and restore a key role in shaping the dynamically developing economy of the region.

The second concerns the problematic factor and condition for achieving sustainable socio-economic development of the region - is to ensure food security by enhancing the functioning of the agricultural complex. This factor must be considered, not only because it occupied a large part of the population, but also because it provides food of all people in the region and, therefore, forms the social climate in the region.

The third one regards the solution of urgent problems in the field of social services, serving the population of the region. This analysis showed that the special importance the tasks associated with maintaining the motivation of the economically active population, ensuring the growth of living standards and employment (the problem of seasonal unemployment).

Finally, the study showed that all the problems of social and economic development of the region can’t be solved without financial support, referring to the whole complex of budget financing, monetary circulation, the liquidity and the functioning of the securities market. For market economy mobilization of financial resources and their effective use acquire leading role in the implementation of social and economic programs.

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