

THE INTERDISCIPLINARY TREATMENT OF THE LOCAL STRATEGY FOR SUSTAINABLE DEVELOPMENT AND THE EFFECT OF THE IMPACT ON THE RELATIONSHIP MAN - NATURE

Susana GEANGALĂU¹, Elena FLORESCU²,
Costache ANDONE³, Vasile AVĂDĂNEI⁴

Abstract: *The paper aims to substantiate the need for Local Agenda 21 - The Local Strategy for Sustainable Development by the systemic developing and the interdisciplinary treatment of the elements of Sustainable Development: economic, environmental, scientific-technological and social, of the strategic objectives proposed by citizens, in short, medium and long term, because it is not put into practice. These can be achieved by intercondition / interrelation, highlighting the compatibility/ incompatibility of the proposed objectives through the transfer of methodologies and concepts among different disciplines. We proposed the use of systemic methods, participatory, prospective, antitheses, etc. Is presented synoptically the effect of the impact on the relationship MAN - NATURE. Conclusions.*

Key words: impact, interdisciplinary, strategy, sustainable, system.

1. Introduction

This paper starts from the fact that in our theoretical and applicative measures made to develop a significant number of Local Agenda 21-Local Strategies for Sustainable Development (LA21-LSSD) complex or thematic, we reached the imperative conclusion that the Strategies for Sustainable Development (LSSD) for communes, cities, counties, regions and even nationally, are incomplete:

- if not addressed systemically, although it is complex systems;
- if not treated in relation to interdisciplinary correlative in terms of elements of Sustainable Development (SD).

Only the application of interdisciplinary **based on the transfer of methodologies and concepts among disciplines** can cause inter-conditionings and interrelations of the systems and subsystems, which highlight the compatibilities and incompatibilities of the SD elements. The need to apply

¹ Ph.D. in economy, President of the Ecoforest Association - Piatra - Neamt, Romania, member of the Academy of Scientists in Romania; ecofores@decebal.ro,

² Dr. ethnologist, advisor and associate member of the Academy of Scientists in Romania; aosnt@clicknet.ro,

³ Doctor of medicine, president of AOSR, Piatra - Neamt Branch; aosnt@clicknet.ro,

⁴ Dr. chemist, president of S.C. INFAST SRL, Piatra-Neamt.

interdisciplinary is required by the fact that so far we have not met within national, regional, county and local LSSD systematically addressed and treated in terms of inter-conditionings and interrelations of systems and subsystems, which highlight elements of compatibility and incompatibility SD. Under these circumstances, we noticed that there is a partial, incomplete and not integrated into a system approach, which is reflected, which is reflected, also incomplete on the effects of impact on MEN and NATURE. We believe that, besides the improving of the quality of LSSD content which implemented can predict the limitation up to elimination of the pollution of the nature and the ecological imbalance, they are a new way of thinking, researching and progress in science. Thus it is fulfilled an increase of value, improving the quality of human life in harmony with the quality of Nature and its economy.

2. Systemic approach of LA21-LSSD of local communities

2.1 Introduction to LA21-LSSD issues

The concept of *Sustainable Development* was introduced for the first time in World Strategy for Conservation¹, in 1980, by which the development of the society is conceived only under the conditions of judicious conservation of natural resources. The concept of Sustainable Development is based on the idea that a society can be sustainable only under circumstances where both the natural system and the human one are in perfect symbiosis. The United Nations Programme for Development (UNPD) integrates the obtained results and promotes the concept of “*Sustainable Development*” as being based on the fight against poverty, on the creation of working places, the protection of nature, democracy and fairness.

It is known that at the World Conference on Environment and Development in Rio de Janeiro in 1992, there was advanced the LA21 concept, which began to have been applied in our country since 2000 in nine cities, declared “*pilot cities*” and continued for other 40 municipalities by 2009 under the auspices of UNPD.

The LA21-LSSD concept was a novelty in the short, medium and long term development plans. Unlike the known plans/projections applicable in the earlier periods, LA21 is a complex concept, referring to SD, as attributes of the Strategy and to its elements: economic, human, environmental and technological. The elements are mutually interconditioned and interrelated,

¹ Developed by the World Conservation Union, World Wildlife Fund and United Nations Environment Programmed

contributing to “*Meet the needs of present generations without compromising the possibilities of the future generations to meet their own needs*”¹

2.2 The main features of LA21-LSSD

LA21-LSSD is superior to other forms of previous foresights, by the following features:

- It is designed and specific to 21st century - a century with other technical, socio-economic and conjunctural traits than those of the previous centuries.
- It is accompanied by two inseparable concepts: *Sustainable Development* attributes of LA21-LSSD.
- The significance of these two concepts corresponds to the real and natural needs of the relationship MAN – NATURE, a relationship mankind is facing.

2. Interdisciplinary - a new way of thinking, research and knowledge in the management of Local Agenda21 - Local Strategy for Sustainable Development

As noted, interdisciplinary is based on the transfer of methodologies and concepts between disciplines.

2.3 The emergence of interdisciplinary

The concept of interdisciplinary appeared in 1954, as a result of the studies conducted by four researchers on issues of general theoretical systems applicable to more disciplines, aiming at the creation of an interdisciplinary. These four researchers were: Ludwig von Bertalanffy – biologist, Anatol Rapoport – mathematician, USA, Ralph Gerard – physiologist and Kenneth Boulding – economist. The emergence of general theoretic system and of interdisciplinary was determined by:

- The limits of human brain - our organ of thinking - comprehending and perceiving the complexity of the general phenomena;
- The need to deepen the more and more complex problems and phenomena the contemporary sciences as well as the technological, economic and social practice are facing.

A UNESCO document² sets out four stages of collaboration between different sciences, namely: 1) *multidisciplinary*; 2) *pluridisciplinary*, 3) *inter-discipline* and 4) *trans-disciplinary*. We refer to stage 3), interdisciplinary, defined by UNESCO as a phase superior to multidisciplinary and pluridisciplinary, but a less developed form of communication, coordination

¹ SD definition was given in Brundtland Commission report, entitled; *Our Common Future*; in 1987.

² 3. Ion Dragan, Preliminary study - a way of thinking and research indispensable for progress in science-Interdisciplinary and human, Publishing House, Bucharest, 1986.

and integration of scientific disciplines as compared to trans-disciplinary, which follows it.

Interdisciplinary shall treat concentric complex problems by different disciplines. It is a concept derived from the objective reality of life priorities. The argument pleading for interdisciplinary lies in the fact that the disciplines for which we have been formed do not give us a complete image of the things considered in isolation, but articulating creatively they do their task effectively. One of the most outstanding supporters of interdisciplinary, K.E. Boulding, requires that in the new context of the evolution of the contemporary scientific movement “... *special attention should be paid to the basic disciplines and the cultivation of the existing social disciplines. Specialization and diversification of the social sciences is equivalent to the constitution of true, intellectual and specialized subcultures.*” In this way, the researcher can pass from the disciplinary study to the interdisciplinary methodological approaches, and from these to the renovation of his/her own discipline. In the same context, academician Basarab Nicolescu¹ states that “*the interdisciplinary approach abound disciplinary boundaries, but its purpose remains within the disciplinary investigation*”.

2.4 Why the need for interdisciplinary treatment LA21and LSSD?

- LA21and LSSD, at the level of local communities, villages, communes, cities, counties, regions and even at the national level are incomplete if they are not addressed and dealt with systematically interdisciplinary treated, from the point of view of inter-conditionings of SD elements: economic, environmental, scientific-technological and social.

- Without an interdisciplinary treatment of interrelation of the systems and subsystems, there cannot be emphasized compatibilities and incompatibilities of SD elements, in order to take decisions regarding the strategic objectives.

- As far as we know, there is not a LSSD so far, to deal with SD interdisciplinary elements, which is reflected in a partial, incomplete and not integrated treatment into a system, with undesirable repercussions of the effects of impact on MAN and NATURE.

- The interdisciplinary treatment raises the quality of LSSD, which implemented can predict limitation/elimination of the pollution of Nature, and Man, avoiding the ecological economic and social lack of balance,

- There can be achieved an increase of value and improve the quality of MAN’s life in harmony with the quality of NATURE and its economy.

¹ Franco-Romanian philosopher and psychologist, France

- The incorporation of abstract design work, of creative thinking, mental new ideas, the interdisciplinary treatment of LSSD corresponds to the interests of effectiveness and efficiency for the achievement of a scientific good.
- In terms of market value of the practical applications, in over 3,000 public rural administrations in our country, the interdisciplinary treatment of SD is a sine qua non utility of LSSD development.
- We tried to do what others have not done yet., even if the interdisciplinary treatment of LSSD development is imperfect,
- By the interdisciplinary treatment of LSSD, we bring an increase of value to the qualitative and quantitative imperatives of NDP for the years 2007 - 2013, and the National Strategy for Romania's SD Horizons 2013 - 2020 - 2030 as part of the Strategy for Sustainable Development of the European Union.

3. LA21-LSSD development methodology

3.1 LSSD systemic approach method

We considered this method appropriate, considering that LA21-LSSD is a global system with a network of economic, scientific-technological, social elements, which are in a relationship of structural/sector domains, of mutual inter-conditioning and interrelation, forming an organized whole.

The major *objective* of LA21 systemic approach is to harmonize and achieve the *consonance* between the aggregated system and the five elements of SD to highlight the connections of the different components, as structural parts, the role of each of them within the overall process of the system operation as well as the influence of the global system on its elements.

In the paper "*The Law of Entropy and the Economic Process*", the renowned economist Nicolas Georgescu - Roegen, studying the relationship between nature and human species, shows that "*By its nature, the law of entropy itself appears as the most economical of all natural laws*". In the economic meaning, entropy indicates the degree of organization of a system. This is what we want to achieve, too in the way of this research.

So, in relation to the overall system - LA21, systems, sector subsystems, on profile and business objects are the base of a pyramidal hierarchy or rely on it, providing an organized whole, as shown in the following presentation:

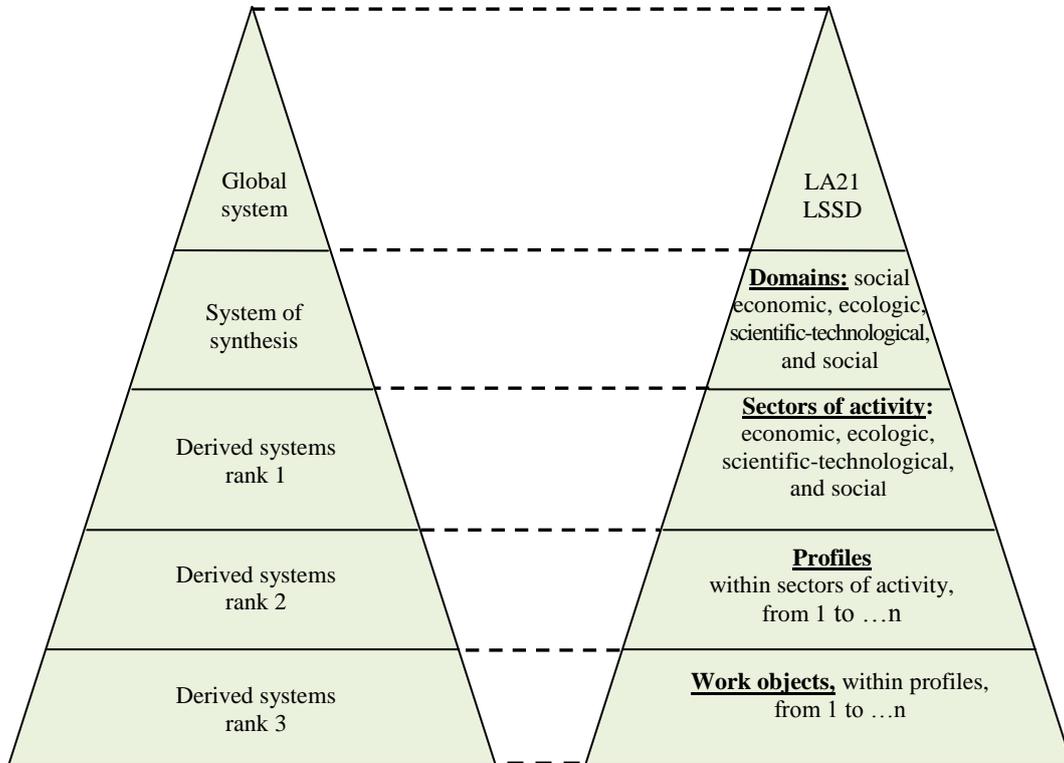


Chart 1. – The Pyramids correspondent to LA21-LSSD systemic approach

By establishing these structures, the authors had in view to make an inventory of all activities carried out within the local community, this being the support of the research object.

3.2 Method participatory approach

Method underlying process leading to democratic social-economic development sustainable. Public Participation is - in the context addressed - the process by which local government, its complementary activities supported by NGOs, open a broad dialogue with civil society, share information and interact in the formulation of proposals for strategic objectives in perspective. Consultation needs arising from nationals.

For this purpose questionnaires were developed for opinion, information, invitations to participate in various activities posted on the villages, leaflets etc. media appearances. They have prepared and put in com-theme uniting citizens of developing Local Agenda 21, the importance of participation in decision-making on sustainable development of the village in the years 2005 to 2010.

It was created as a favorable climate for consultation and participants seemed genuine community interest.

Categories of citizens see: City Council members, civil servants hall operators in production facilities, tourism, trade, services, institutions, professionals from various fields, farms and housewives from three villages, men and women, young adults and elderly.

Processes of consultation and involvement of citizens in Agenda 21, the method used participatory approach

- *Formal procedures for public participation*: meetings scheduled with City Council members, with civil servants hall, with established structures and sectors responsible; public debate, opinion surveys, roundtables, symposia, interdisciplinary session on *News and interdisciplinary in the context of sustainable development*; organized by Ecoforest - Neamt, under AOŞR - Piatra Neamt Branch.

- *Non-formal processes of public participation*: consultation with large groups of citizens, carried out joint actions with local council and NGOs, micro-group discussions, meeting non-formal, oral or written proposals received from citizens, lobby - hearing public, influencing people; decision making; informal village leaders use ideas, proposals made by experts to help with proposals based on the questionnaire, the development of Local Agenda 21 - LSSD, using the media, otherwise non-formal participatory approach appropriate.

3.3 Method approach foresight, forecasting

The book „*Broca Brain*” - Carl Sagan noted that „*There is no plan without planning, invention without the inventor, serial no criteria, no commitment enthrone him something capable ... without someone to design for ... to reach the goal*”.

Prospective method, the authors have done to anticipate the future in the years 2005 - 2010, the economic, environmental, technological, and social infrastructure, and foreshadowed the content, direction and magnitude of likely needs, objectives, resources, etc.

Currently, the local government cannot function on the parameters of progress, only where there is a complex mechanism, such as Local Agenda 21, showing trends and changes in development and prefiguring the future. If the forecast for guidance, information and plan is a decision of the local executive and is binding, the strategic objectives of the plan are part of the forecast approved by council.

3.4 Method antithesis

Antithesis method offers interdisciplinary team to overcome the conflicting arguments, using the dialectic opposition between the two judgments / solutions, thus each embossed compatibility / incompatibility of an activity-to become a strategic objective or SDS.

Method antithesis, if our research constitutes an intervention method sine qua non, the interdisciplinary treatment of SD elements: economic, environmental, scientific-technological and social infrastructure.

4. Effect of impact in relation to MAN - NATURE, treated LA21-LSSD under interdisciplinary report findings from our research we can summarize - without exhausting the subject - by the following scheme:

ELEMENTS OF SUSTAINABLE DEVELOPMENT AND EFFECT OF TREATED INTERDISCIPLINARY POSITIVE IMPACT ON:

H u m a n



<i>ECONOMIC</i>	<i>ECOLOGICAL</i>	<i>SCIENCE - TECHNOLOGY</i>	<i>INFRA-STRUCTURE</i>	<i>SOCIAL</i>
<u>Provides:</u> - local-wood material for production - profit immediate - short term salary	<u>Provides:</u> - to air, water, soil and land scope clean - long-term profit - sustainable of forest development	<u>Provides:</u> - development of creativity and innovation - product-diversify action - friendly technologies	<u>Provides:</u> - upgraded road network - needed means of transport - modern communications	<u>Provides:</u> - job creation - professional level rise - welfare - health

N a t u r e



<i>ECONOMIC</i>	<i>ECOLOGICAL</i>	<i>STIENCE - TECHNOLOGY</i>	<i>INFRA-STRUCTURE</i>	<i>SOCIAL</i>
<u>Provides:</u> - rational management of renewable forest - financial resources for wages - long-term profit	<u>Provides:</u> - keeping environment clean, sustainable forest regeneration - ecological balance - long-term profit	<u>Provides:</u> - scientific and technical programs - innovation, operational equip-ment and transport - efficient technologies operating	<u>Provides:</u> - accessibility of forest roads - forest protection works - exploitation of timber and non-wood	<u>Provides:</u> - jobs - stabilize youth - health-friendly environment - tourism

No schedule. 2 - Comparison between the effects of impact in relation to man and nature

We interdisciplinary treatment means only development without sustainable. In this case, the impact effect is negative for both Man and Nature, no longer protected by LA21-LSSD. It has an adverse impact on projected Strategy objectives, with incalculable negative effects on the economy, ecology,

sciencentic-technology, infrastructure and the social for current generations and those who succeed

Conclusions

The idea started from our research that during bibliographic documentation, I have met treat systemic and interdisciplinary approach goals proposed by citizens, through the SD elements. Basically, we found that the strategies of regional, national and even European Union, strategic objectives, not dealt interdisciplinary sails, but the independent areas. For these reasons, and in finding practical, elaborating on the need to dilute a comprehensive strategy, the authors have done this research for the first time, to address systemic and interdisciplinary treatment of developing LA21-LSSD, a rural village. We believe that only the interdisciplinary application, based on the transfer of methodologies and concepts between disciplines can lead to inter-base systems and subsystems and interrelations investigated. Meanwhile, compatibility and incompatibilities strategic objectives addressed by the method of antithesis, in dealing with SD elements, helps to overcome the conflicting arguments, using the dialectical opposition between two options, which are thus mutually relief.

This will highlight the impact and effect of positive / negative relationship man and nature, with direct influence on quality of life. It is an activity based on knowledge and information and value-added contribution approach 100%. Costs for such a complex work are insignificant in comparison with the effects of medium and long term impact, reported to concrete situations. We believe that this research, as a whole, at an initial stage of preparation, may be a relevant *paradigm* for practitioners.

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