

## **SUSTAINABLE DEVELOPMENT OF THE PROTECTED AREAS WITH THE REFERENCE TO THE SICEVO GORGE**

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**Abstract.** *The goal of this paper is to test the topical and possible application of sustainable development principles in the protected areas. The sustainable development is observed as a goal and the flexible mechanism for reaching the consensus set by the fundamental postulates of the Agenda 21, among all the relevant factors in the decision making and enforcement of regulations. It is unquestionable that the spatial planning possesses the necessary integrative potentials for management of changes, long term time horizon and the catalytic position in reconciliation of public, social and private interest. The road towards sustainability is a long and complex process, because it requires the change of the way of thinking and behavior of all the social factors, that is, establishment of the understanding the environmental effect of the development is as important as the economic one. The main guidelines of this reconciliation must be the vision and the aims of preservation of natural resources, but not as the ultimate requirement of the authorities, but as the argument-supported and articulated public interest.*

*This paper refers to the Spatial plan of the special area of Sicevo gorge through the review of basic regimes of natural resources protection, restrictions and prohibitions. It also pays attention to the measures which will allow to achieve sustainability of development as well as apply protective regimes.*

**Key words:** *protected area, natural resources, sustainable development*

### 1. INTRODUCTION

The sustainable development concept is the basis of the strategic decisions, acts and documents passed at the "United Nations Summit on the environment and development Rio, 1992 and which is confirmed at the world summit in Johannesburg 2002 as an inevitable paradigm and the principal element of an vision of the future. The realization of this concept worldwide in the 21st century is conditioned by the rules of conduct defined

in the 40 chapter of the Agenda 21, which, apart from the other things include: usage of natural resources, environment and ecosystem protection, human rights and human health, criteria for decision making on the economic development, human settlements development etc. Even though it was affirmatively accepted in the whole world, the sustainable development concept is rare to find in the formulation of the developmental policies on one hand, due to the insufficiently developed instruments for a comprehensive and parallel consideration of economic, ecologic and social goals, and on the other hand because of the prevailing attitude that the requirements of environmental sustainability inevitably limit the economic growth. One of the misconceptions is that the protection of the human environment collides with the interest of the economic growth, gross product growth, living standard, creation of new jobs [1].

The practice of the most developed countries, but also the developing countries, during the last decade proves the opposite: the traditional concept of development oriented to the growth of production and at the same time the increase of natural resources consumption reached its limits. The so called "external costs" produced by pollution, resources exhaustion and degradation of human health have begun to outweigh the benefit of the further growth. The capital in the most developed countries is nowadays more and more invested in the environment protection, energy saving and other resources and the development of the environment friendly technologies. The sustainable development should be stimulated by fiscal measures at a local level, which should be aimed at preventing pollution and wasting of natural resources [2]. The radical changes in the strategies of protection in the developed countries – from the protection of environment to the sustainable development – bring about the integration of environmental aspect into the development policies of all other domains.

## 2. THE BASIC PRINCIPLES OF SUSTAINABLE DEVELOPMENT

The sustainable development is not only an environmental issue. Three aspect of sustainable development have been determined: economic sustainability, environmental sustainability and social sustainability.

The aspect of economic sustainability comprises the economic growth and development, environmental sustainability comprises the integrity of ecosystems and care of their capacity and biodiversity, while the last aspect comprises values such as equality, capability, accessibility and participation. Apart from these three components, the main principles of the sustainable spatial development of European continent introduce the fourth dimension in the form of the cultural sustainability [3].

- The sustainable development is the general guideline, and not the unalterable list of tasks.
- The sustainable development is aimed at creating a better world, balancing the social, economic and human environment protection factors.

A territory is a complex system which does not only include the urbanized, rural and other areas, such as industrial land, but the nature as a whole and the environment where people live. It is a place and the necessary framework of human dwelling and activities, and therefore is a basis of sustainable development.

The inconsistent developmental policies cause risk, uncontrolled usage of land and unsustainable development, they are both damaging for the nature and the people, which is confirmed both by the natural disasters such as earthquakes and the volcano eruptions, droughts and floods, and by the human incited disasters, including wars, large scale fires, etc. The sustainable spatial development prevents or significantly reduces these risks.

### 3. SUSTAINABLE DEVELOPMENT AND ENVIRONMENT

The idea of the sustainability of the environment means leaving the planet to the future generation in the better state than we when we inherited it. By definition, the human activity is sustainable for the environment only if it unfolded without exhaustion of natural resources and if it did not degrade the environment [4].

It means that:

- the exploitation of the resources should be minimal
- consumption of the material resources would be based entirely on the 100% recycled material or the materials from a recoverable source (which were used without endangering the environment or without consumption of the base of the raw materials source)
- waste waters should be 100% recycled
- energy should be preserved and the energy sources recoverable and non-polluting (solar and thermal energy, wind energy, biomass)

"Sustainable development is a development which meets the present needs without endangering the possibility of the future generation to meet its own needs." This definition is formulated by the WCED – World Committee for Environment and Development.

The word "development" in this definition introduces two important aspects of this concept: it is multi-disciplinarity, because the development cannot be limited to a certain number of disciplines or areas, but rather is applicable to the whole world, everyone and everything in it, and now in the future. The second aspect is that there is no goal, but the continuity of development is the goal in its own right. The definition of the principle is based on two principles: the principle of "demand", and the principle of "limitation" to the capacity of the environment to satisfy the needs of the present and the future, determined by the technological development and the social organization.

The limitations exist, and they can be natural, such is the finiteness of the sources, but those can also be the decrease of the productivity caused by over-exploitation of the natural resources, decrease of the water quality and disappearance of the biodiversity. For our common future, it would be the best if the needs are satisfied, and that the limitations are not increasing but decreasing. It brings us to a quite simple conclusion that any political, technical and social development can be easily evaluated in the light of the sustainable development through these two arguments. Each development should assist in the satisfaction of the needs, and should not increase the limitations.

#### 4. SUSTAINABLE DEVELOPMENT OF THE PROTECTED AREAS

The people can live in the protected areas and use the natural resources and potentials of the area for their needs, and the activities related to the economic and demographic development can unfold, with a few exceptions. Of course, these activities are limited in kind, extent, time and spatial arrangement. In other words the area under protection must be different from the adjacent, unprotected space by "reduced freedom of availability", and the owners and user of properties/real estates and the visitors should adapt to such a regime [5].

The basic postulate/motto of the sustainable development is the balance of economic growth, social-demographic development and care for nature and the environment. In its essence, the mentioned balance should be an immanent category of the status of protected areas, as a result of its anthropogenic-demographic and cultural-historical properties, ways of establishing (which comprises agreement or consensus of the decision-makers) and the goals of management (preservation, recovery and arrangement of nature, taking care about the interest of the population and users of natural resources and the space).

The basic pivotal point of the balance must be the vision and the goals of preservation of the natural values, but not as an ultimate requirement of the authorities, but as a documented and articulated public interest.

##### **4.1 The protection regimes and identifying of the extent of development sustainability**

The protection regimes of natural resources which are regulated in the law through the corresponding acts are more closely defined through two kinds of measures defining the relationship towards the construction of the structures, natural resources and development of activities based on them [6]. The first kind of these measures are prohibitions, they are in most cases clearly defined, recognizable and simple to implement. The second kind are the limitations, and they refer to the acceptable and desirable activities, which in most cases are not quantified, which is later provided through other regulations.

For identification the extent of development sustainability, the most important are the documents which are issued after the proclamation of protection and the rules, plans and design specifications are based on them. The documents which are considered principal – governing are the programs of protection and development. It is desirable that the definition of those programs unfolds simultaneously with the production of the documentation that proclaims the protection. In order to balance the protection and sustainable development, it is deemed necessary that these documents, apart from its basic – obligatory content, include a long term (strategic) 20 year long vision of protection and development, business – financial plan and implementation plan. The other necessary preconditions for the coordination of protection with the sustainable development are the spatial and town plans. The connections between these activities are very strong and numerous. The spatial plans of the protected areas are a powerful means (in professional, procedural and political respect) for creation of the relationship between the developmental and environmental needs. They comprise, at least a face level and strategic level, a full respect for the functional/content requirements of protection of the special natural and cultural historical values, and they strive to "relativize", that is, reconcile and eliminate the oppositions of various developmental and protective interests with economic and social requirement.

The regulations, procedures and documents which refer to the environmental acceptability of developmental projects can be a significant means for measuring the sustainability of development of the protected areas, but not individually, but within a hierarchic vertical with other relevant documents regulating the natural protection. Here, care should be taken, because the activities and contents which are at one place evaluated as adequate and compatible, can be more easily planned for some similar locations, but they cannot be universal and they cannot be applied without the previous detailed analysis of the area. Again, care should be taken that some economic activity or harmful or inadequate structure found in the area when it was proclaimed protected, would not serve as examples for some future planning in the protected natural resource areas.

One of, also, very important instruments in the implementation of the desired harmony of interests (social, economic and environmental) is, or should be, the opinion of the population. The basic condition for achieving this harmony, apart from the regular and legal informing of the population, is the clear vision of future life in this protected area, guaranteeing justice, equality and assistance, and transparency in presentation of limitations and prohibitions imposed and the consequences in cases when the allowed regimes are not followed.

#### **4.2 Protective regimes implementation**

Evaluation of complying with the protective regimes is the best way for recognition and evaluation of the development sustainability elements of the protected areas. However, the problems because of which, the evaluated status very often is not satisfactory mostly lie, whether in the very procedure of protection proclamation, as a result of willful compromise, or in the insufficient willingness of the "system" to provide implementation of the protection goals. The causes of these situations may be of various nature (political, organizational, professional, economic, financial...)

Compliance with the regimes is the most consistent in areas under the 1<sup>st</sup> level of protection, both because of the explicit character of measures (prohibition) and because of the relatively small surface area covered by the regime.

In the areas with the regimes of 2<sup>nd</sup> and 3<sup>rd</sup> level of protection, the departures are more frequent and extensive. Certain changes in the nature and anthropogenic artifacts are either accepted as a reality or as an inevitable planning, developmental perspective at the moment of declaring the protection. An example of such departure and acceptance of the existing activities and status is the Natural Park Sicevo Gorge (principal roads and railroad, stone quarries and too intensive building activities.).

The basic problem of incompliance with the determined protective regimes are mostly the illegal construction of various types of structures. They are to greater or smaller extent present in the majority of the protected areas, including all the national park reserves. One of the most frequent problems is the inappropriate usage of farming land, of forests and woodland. Exploitation of minerals resources, primarily opening of stone and lime stone quarries, creation of weirs on the river and making of fish-ponds are a large part of "unsustainable" developmental pressure on the protected areas. In addition, there are the "eternal" problems of wild disposal sites, unresolved issue of waste and waste waters disposal and removal, illegal and too intensive hunting and fishing, introduction of non-native species in the natural habitat. All these problems should be solved at the local level,

but due to the overall social inefficiency in our country, this is of the not possible, or the procedure is very complicated.

#### 5. SPATIAL PLAN OF THE SPECIAL PURPOSE AREA OF SICEVO GORGE

The spatial plan of the special purpose area of the Sicevo Gorge is a long term plan for development, improvement, usage, protection and preservation of the Sicevo Gorge area and natural, monumental and cultural values and rarities in it.

The spatial plan of the special purpose area of the Sicevo Gorge is a long term document which is produced according to the Decree on the reparation of the Plan, passed by the Municipal assemblies of Nis and Bela Palanka [7].

According to the Law on planning and spatial arrangement and the Spatial Plan of SRS and the Statute of the City of Nis and the Statute of Municipality of Bela Palanka, this plan provides in particular:

- Development, protection, improvement and usage of the Sicevo Gorge area natural, monumental and cultural values and rarities,
- Balancing of interests of the space users, and the social and spatial development,
- Usage of space in accordance with its natural and environmental properties,
- Implementation of protective measures of importance for National Defense and social protection.

This spatial plan defines solutions for protection, arrangement and improvement of the space for the period of 20 years.

#### 6. SUSTAINABILITY ELEMENTS IN THE IMPLEMENTATION OF PROTECTIVE REGIMES

In Serbia, as in many other countries, the procedure of harmonization or "creation of sustainability, in establishing and further maintenance and management of the protected areas, does not have a character of a clear and pure, scientific, professional and political activity. But, this cannot be criticized, considering the seriousness and the extent of the problem on one hand, and a large number of variable factors related to the protection activities themselves on the other hand.

There are several tens of principles and several hundreds of indicators of the sustainable development that should be formulated into the concrete rules and precise qualitative and quantitative indicators. /5/ Very often, great difficulties occur in the evaluation of the importance, status (degree of danger) and the ways of protection of natural characteristics of an area, influential factors on the nature, and forecast of their effects.

The situation in the case of this plan and which elements are its mechanisms for the sustainable development, must be determined with the careful analysis of the preliminary goals and protective measures which are proposed in it. As the plan was not produce in the period of expansion of the "sustainability" trend in our country, the entire documentation needs reviewing and the principles and measures relying on the postulates of "sustainable development" and "sustainable planning" must be *perceived and identified*.

## 6.1 Basic protective regimes

The area covered by the Spatial plan, contains the protective regimes of 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> level.

*1<sup>st</sup> level* protective regime– determines the strict protection of natural values and rarities, and immobile cultural value with the activities of scientific research, education and the limited presentation for the public.

*2<sup>nd</sup> level* protective regime – determines limited and controlled usage of natural resources and immobile cultural values for the following activities: a) scientific research, b) education, c) touristic presentation of the cultural values d) certain forms of recreation and sports such as swimming in the river and pools, small sports, kayak peddling, hiking, alpinism, picnics and recreational walks, e) water resources, for water supply and waste water disposal, f) traffic, to provided access to the certain housing and recreation zones and the usage of the existing railroad and regional road, Niš – Dimitrovgrad without endangering the primary values of the Sicevo Gorge g) strictly controlled forestry in the function of improving the autochthonous forest communities.

*3<sup>rd</sup> level* protective regime – determines controlled and guided, usage of natural resources with activities serving to tourism, housing, farming, forestry, communal arrangement of the space and the grape processing and wine producing activities.

## 6.2 The protection regimes of usage and arrangement of the space in respect to the arranged protected zones and identifying of the extent of development sustainability

These arrangements are arranged by the allowed activities and localities of the previous chapter. Apart from that, the Spatial plan determines the prohibition regimes by every level of protection:

Table 1. Protective regimes for usage and arrangement of space with the sustainability elements

Prohibitions		
I level zone	II level zone	III level zone
Forest exploitation	Usage of forests and grazing land contrary to the regime	Construction of buildings outside building zones of the settlements
Quarry excavation		
Pollution of the river Nisava	Gravel dredging from the river	Pollution of the Nisava river with waste waters
Hunting		
Changing of geomorphological forms of karst	Stone excavation	Gravel dredging from the river
Unplanned picking of medicinal herbs		Quarry excavation
Building of all kinds of structures	Any works that change the morphology of the terrain	Change of crop pattern contrary to the environmental concept of zoning of farming and forestry land.
Construction of high voltage mains		
Disposal of all kinds of waste material		

### 6.3 Conditions for accomplishment of the spatial plan

The solutions determined with this spatial plan should be realized if the following conditions are fulfilled: a) it should become a part of the plans and programs of long and medium term social-economic development of the City of Nis and municipality of Bela Palanka, b) if it complies with the norms, criteria and purposes determined by the Spatial Plan, c) if the planning and program documents are mutually harmonized as well as with the Spatial plan.

The activities of arrangement of the area of Sicevo Gorge must be directed towards protection, preservation and improvement of the values of natural ambience and the bringing in balance the environment of the entire area.

Table 2. Determination of regulations and priorities of usage and arrangement of space with the sustainability elements.

Regulations determining relations in space	Priorities of development, organization, arrangement and protection of the space
Each arrangement of space must maximally fit into the existing natural ambience	Implement the protective measures and prevention of further exploitation of the area
The new structures to be built must have the building characteristics of the traditional local architecture	Preparation for presentation of values to the scientists and the public
Prohibit land consolidation in order to preserve the landscape appearance	Determination and designation of protected zones
Prohibit further change of the water course and water regime of the Nisava	Equipping of tourist sites (road access etc.)
Introduce reduced traffic through the gorge after completion of the highway E – 80 Belgrade – Dimitrovgrad	Environmental reconstruction of devastated areas and harmonization with their natural and environmental properties
Prohibit cutting down forest	Scientific and research work
Prohibit weir construction on the Nišava	Infrastructural equipping
Prohibit further exploitation of stone and close down the quarries at Ostrovica and Dolac	Creation of the material circumstances (tax policy, credits) for realization of the concept of spatial arrangement and protection.

## 7. CONCLUSION

The sustainable development concept is one of the responses to the progressive degradation of human environment. As a consequence of inability of nature to recover from the



degradation caused by the anthropogenic disturbance, the sustainable development tried to provide and protect the survival of certain ecosystems and the entire life on the planet.

A view of the Spatial plan of Sicevo Gorge shows that the elements and measures of sustainable development are a paradigm of arrangement of protected areas, but that the instruments and means for its accomplishment are often inadequate or mutually non-synchronized in reaching the common goal. This disharmony and lack of understanding can result in the permanent damage of the environment.

Regardless of all the weaknesses of the existing system of natural protection, including the inconsistency in enforcement and imperfection of the methods and instruments of verification of general interest in this domain, the protected areas can be models to test reality and the examples of successfulness in reaching the goals of sustainable development.

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## ODRŽIVI RAZVOJ ZAŠTIĆENIH PODRUČJA SA OSVRTOM NA - SIĆEVAČKU KLISURU

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*Cilj ovog rada je da isproba aktuelne i moguće primene principa održivog razvoja na zaštićenim područjima. Održivi razvoj je posmatran kao cilj i fleksibilni mehanizam za dostizanje konsenzusa postavljenih osnovnim postulatima Agende 21, između svih relevantnih aktera u procesu odlučivanja i sprovođenja regulativa. Nesumljivo je da prostorno planiranje poseduje neophodne integrativne potencijale za upravljanje promenama, dugoročni vremenski horizont i poziciju katalizatora za usklađivanje javnog, društvenog i privatnog interesa. Put ka održivosti je složen i dugotrajan proces, jer zahteva promenu mišljenja i ponašanja svih društvenih aktera, odnosno shvatanja da je ekološki učinak razvoja jednako važan kao i ekonomski. Osnovni reperi usklađivanja moraju biti vizija i ciljevi očuvanja prirodnih vrednosti i resursa, ali ne kao ultimativni zahtev nosilaca moći, već kao argumentovan i artikulisan javni interes.*

*Ovaj rad daje osvrt na PPPN Sićevačka klisura, kroz pregled osnovnih režime zaštite prirodnih dobara, iskazivanje restrikcija i zabrana, traženje mera održivosti razvoja i primene zaštitnih režima.*