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## Articles and Statements

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### **Areas of Mountains and Valleys of the Northern Region of Montenegro: an Overview from the Aspect of Mapping, Typology and Landscape Protection**

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#### **Abstract**

The text gives a geographical view of areas of mountains and valleys of the northern region of Montenegro with aspect of mapping, typology and landscape protection. According to the Ministry of Tourism and Sustainable Development of the Government of Montenegro (2015) in the areas of mountains and valleys of the northern region of Montenegro we highlight the landscape of regional character and local level (Figure 1). On Figure 2 we distinguish the following character types landscape: valley and basin mountain rivers; gorge and canyons of mountain rivers; plains, fields, plateaus; urban settlement; water accumulation of the lake; lower mountain type; Mountain landscape type and high mountain type landscape. Terminology and methodology applied in Montenegro studies of landscape, in the context of its protection, were discussed in very numerous publications. Finally, in concluding observations, we point to some aspects of cultural cartography and the study of landscapes in the past. When archaeological or historical landscapes are concerned, always the time that has already passed is being studied. Thus, it can be claimed Karro et al. [1] emphasizes using research Widgren [2] that the reconstructions of past landscapes are imagined, and may or may not be real. Unfortunately, it is impossible to say how much reality those reconstructions actually include, because treating evidence and the use of different theories and methodologies affect the result (e.g., the difference between retrospective and reconstructive method).

**Keywords:** Northern Montenegro, mapping, typology, landscape, protection.

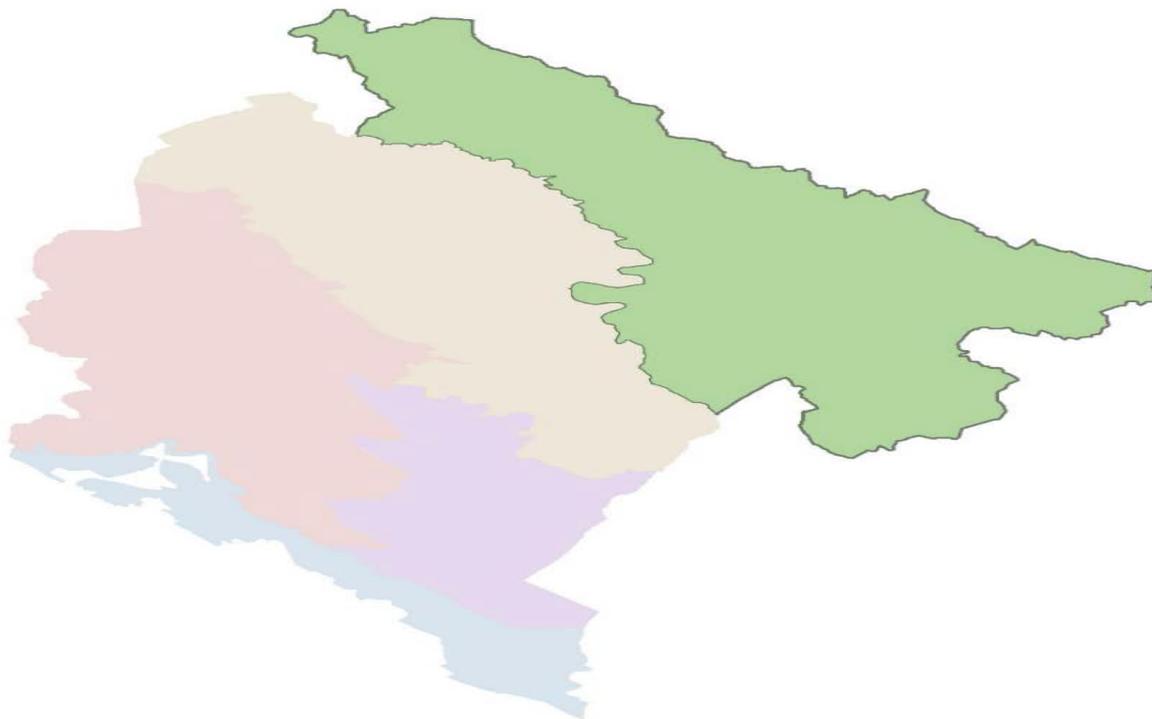
#### **1. Introduction**

The entire appearance of a certain space towards Kaloger [3], that is its landscape is determined by the basic physical – geographical elements, especially relief, water and plant cover, so it depends on the presence of man and the intensity of his work. Due to the increasingly intense, and most often, completely uncontrolled man's activity, especially in our social conditions, there are less and less original natural landscapes in the area of mountain and river valleys of the northern region of Montenegro. Because to contemporary developments and relations in space, the general phenomenon of absolute domination of cultivated landscapes is common, and this very often without any functionality, that is, without a harmony between man and nature, without

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feeling for any spiritual needs of the population, practically without the basic physical conditions for the unfolding of the modern way of life, which perhaps more than ever before requires exactly the harmony of space and harmonious relations in it. Right on because of this, the urban settlements of the northern region of Montenegro have become alienated and, in some sense, residential fleet to the suburbs - rural settlements, this only confirms [3].



**Fig. 1.** Landscape of mountains and valleys of the northern region of Montenegro [4]

Planning, according to Marušić [5] indicates that “both for development and protection, can be carried out by two approaches that are basically different from the methodological point of view: analytical planning approach and normative approach or, as Simon [6] has denominated it, standardization. The first of the above two approaches represents an approach are which has been predominant in the traditional landscape planning practice. The main task of landscape planning is to locate new land uses, new development and new activities. The normative planning approach is based on the assumption that landscape appearance can be defined as the objective of landscape management practice”. It is, in fact, a concept that understands the landscape as cultural heritage that should be maintained, rather than the landscape as a living organism which evolves according to the dynamics of natural and social processes. The basis for landscape standardization is the landscape typology classification. For the purpose of preparing landscape planning norms, the morphological definition of landscape type seemed to be most adequate. Landscape pattern is a specific structure of landscape elements that can be described as a complex landscape appearance. The complexity of the landscape pattern differs according to the scale of landscape perception and assessment [5].

Our research records are based on similar research Badora [7] including research Kistowski [3] indicates that landscape protection, one of key aspects in preservation of socio-cultural identity and natural heritage, is an important task for the Montenegro society and administration. Providing landscape protection may involve the development of a spatial system of protected areas, differing in their rank and protection conditions and contributing to legal protection described as passive. In Montenegro, spatial systems of landscape protection are established according to Badora [7] a scientific paradigm in which landscape, as the subject of protection, is understood differently. Two main trends may be distinguished in its research and development according to Badora [7]: (1) based on natural studies (e.g. landscape geography, landscape ecology and geochemistry) and focusing on the protection of nature values and (2) based on technical sciences (e.g. Urban planning, architecture, landscape architecture) and focusing on the protection of cultural values, very often resulting from the history of the area and its monuments

[see 9-10]. Terminology and methodology applied in Montenegro studies of landscape, also in the context of its protection, were discussed in very numerous publications.

## **2. Research Methodology**

To study landscape, according to Antrop [11] information was gathered from field surveys, maps, literature, sketches and photographs. Since the Second World War, aerial photography, and from 1970 on also satellite remote sensing, gave a completely new approach in the study of landscape. Therefore, it is not appropriate any more to speak about the geography of landscapes, but rather about what geography can bring to the study of landscape. In most countries the number of researchers according to Antrop [11] citing research Verhoeve and Vervloet [12] indicates that studying the landscape is limited and fortunately this stimulated in the development of an international network. Many landscape researchers meet under the umbrella of the International Association for Landscape Ecology (IALE), which has national, (supra)regional groups and thematic workshops. Also important is the Standing European Conference for the Study of the Rural Landscape. "A method for landscape characterization (LTS) will only serve its purpose as a knowledge base for landscape analysis if it gains general acceptance by all stakeholder groups. It therefore has to meet some basic criteria, of which the following are likely to be the most important: general patterns in the variation of landscape characteristics need to be addressed; only characteristics (variables) that are observable on a relevant (i.e., landscape) scale taken into account; the characterization must be so exhaustive that the needs of all stakeholders for information is satisfied; the terms and concepts used in landscape characterization, including criteria for definition of types, need to be explicitly defined and applied in a way that meets the demand for repeatability in scientific studies" [13]. So, the whole information volume in this article was obtained through specific methods for the selective research, respecting all its stages from the methodological point of view: identification of the researched issue, research framework delimitation, information collection, data processing, analysis and interpretation drawing up the conclusions. Research also played an important role in the article in the identification of other studies and articles on the same subject. Hence, the information sources used can be classified into governmental sources (ministerial and from research institutes), and into non-governmental sources (independent publications) [see 14-17].

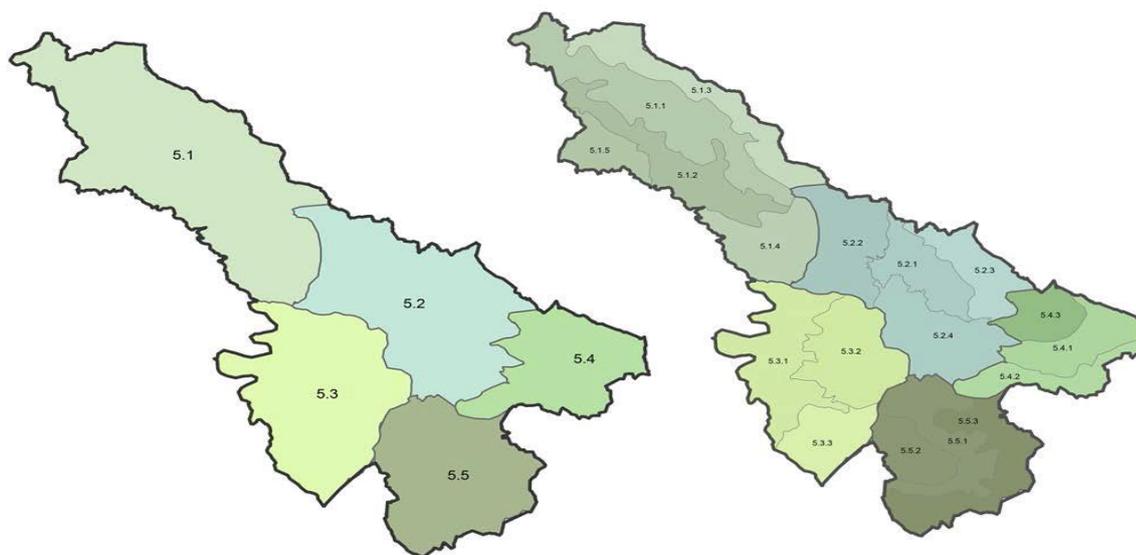
## **3. Analysis and Discussion**

Various approaches are hidden behind the title „landscape mapping“ (even landscape ecological mapping), and among them also commonly very specific ways of landscape survey. It was noticed according to Maly [18] who commented, that „some so called landscape maps produced by non geographers (by ecologists, biologists, planners) are not a true landscape maps, because they display only selected landscape components and the other ones are totally neglected or suppressed. Such maps do nothing with the synthetic approach typical for the landscape maps in true sense of this word“ [18]. The outcomes stating the measures of unused lands according to the Ministry of Tourism and Sustainable Development of the Government of Montenegro [4] in the areas of mountains and valleys of the northern region of Montenegro (Figure 1) are rather undervalued, which is a result of methodological limitations in the mapping process. By Lipský and Kukla [19] the mapping could not include smaller areas that cannot be expressed on the map scale (e.g. areas around electric wiring posts, kerbs, irrigation and drainage systems and other objects making the continuous mechanized farming of lands impossible in the free landscape), the number of neglected line elements (alongside water flows and watercourses, balks, ditches), which have a similar vegetative character, and also abandoned unused areas located on the premises of enclosed industrial and storage areas that are fenced and generally inaccessible. It was also impossible to map individual small areas in the inner parts of settlements (e.g. abandoned gardens) unless these were publicly accessible. The unused areas in the landscape keep growing. At the same time according to Lipský and Kukla [19] they carry a substantial landscape-forming, ecological and also hygienic and social impact. In the immediate vicinity of the town they are interwoven with an uncontrolled network of paths mostly used for nature walks, dog walking... They concentrate a number of wild animals (e.g. roebuck, hare and pheasant), birds, insects and other groups of organisms whose occurrence is much higher here than in the surrounding urban and let natural processes take its course?

Unfortunately, divisions go further than just what people talk about in conferences. Dudley [20] states that different arms of government often regard protected landscapes as very different

entities and management can end up confused as a result. Environment ministries tend to report them as contributing to biodiversity conservation targets, including those of the Convention on Biological Diversity's Program of Work on Protected Areas, while rural development ministries downplay their conservation role in favor of human livelihood issues. At management level, some protected landscape managers emphasize the nature conservation aspect and have addressed this carefully in management plans, while others see it as less important than maintaining landscape values, community benefits, and the traditional management systems.

According to the Ministry of Tourism and Sustainable Development of the Government of Montenegro [4] in the areas of mountains and valleys of the northern region of Montenegro (see Figure 2) we highlight the following landscape of regional character (5.1 – landscape Pljevaljski areas; 5.2 – landscape Vraneške valley and Lower Kolašina; 5.3 – landscape Bjelasice and Komova; 5.4 – landscape Rožajskog areas and 5.5 – landscape Plavsko areas) and local level (5.1.1 – lower mountainous landscape along the river bank Čehotine; 5.1.2 – mountainous landscape Podgora, Vrba, Višnjice, Kosanice; 5.1.3 – mountainous landscape Kovača and Graba; 5.1.4 – mountainous and high mountains landscape Stožersko-Baričke surfaces, Slatine, Sokolca and Lekovine; 5.1.5 – mountainous landscape Ljubišnje and Lisca with the canyon Drage; 5.2.1 – lower mountainous landscape bjelopoljskog areas with the valley Lima; 5.2.2 – mountainous landscape Lise; 5.2.3 – mountainous and high mountains landscape Đalovica, Korita and Bora; 5.2.4 – lower mountains landscape with Beranske valley and Tirvanskom gorge; 5.3.1 – valley river Tare; 5.3.2 – high mountains landscape Bjelasice; 5.3.3 – high mountains landscape Komova; 5.4.1 – landscape valley Ibar and Rožajske valley; 5.4.2 – high mountains landscape Hajle; 5.4.3 – mountains and high mountains landscape Vlahova; 5.5.1 – landscape Andrijevičke and Plavsko-Gusinjska valley; 5.5.2 – mountains and high mountains landscape Zeletina and Visitor and 5.5.3 – high mountains landscape Prokletija).



**Fig. 2.** Areas of character landscape (left – regional level, right – local level) [4].

Brånhult [21] emphasizes by referring to research Wańkowicz [22], Vos & Meekes [23] and Sarlöv–Herlin [24] a way to balance different needs, and satisfy various interests at the same time, is to facilitate the creation of multifunctional landscapes. Multifunctional landscapes are essentially about safeguarding and enhancing different interests and values, such as biodiversity, production, recreation, cultural heritage and aesthetic values, in one and the same area, not handling them as separate interests. This is especially important in urban areas where land is scarce and landscapes often are under high pressure [see 25-27]. In seeking the right balance between protection, management and planning of a landscape, it should be remembered that the aim is not the preservation or "freezing" of the landscape at a particular point in its lengthy evolution. Landscapes have always changed and will continue to change, both through natural processes and through human action. In fact, the aim should be to manage future changes in a way which recognizes the great diversity and the quality of the landscapes that we inherit and which seeks to preserve, or even enhance, that diversity and quality instead of allowing them to decline [21].

The general balance of the needs and possibilities should be a starting point for the determination of the development policy and later for drafting of spatial management plans. In particular, we should aim at balancing the land needs in respect of the indication of land use of the selected areas, taking into account the protection of those components whose use and development should be subjected to special needs, owing to the features of the natural and cultural environment. That would allow for the implementation of the principles of sustainable development: on the one hand, preservation of selected resource, and, on the other hand, a possibility of the development of local communities [22]. What is an essential element in reference to landscape is the analysis and evaluation of the usefulness of particular plots of land for the development of various useful functions which will allow us to maintain and utilize landscape values. Assuming that the landscape use is associated with a possibility of providing aesthetic experiences, the landscape value increases with the increase of the possibility of providing such experiences to observers, just like in case of masterpieces (landscape has real value only when one can see it). The areas which are affected by the objects mentioned before are the lands on which the objects are passively exposed (or the places where we can see such specific objects). To put it simply, the larger the area from which an object can be seen the higher landscape value [22].

The landscape setting is defined by an area and its geology, landform, vegetation, built form, human activity, and climate and their influences on its processes. The values associated with landscape protection are complementary to those values traditionally attributed to environmental protection, including economic efficiency, clean air and water, species protection, availability for public enjoyment and sustainability. The community's appreciation of the landscape resource is a collection of individual perceptions, some acute, some subliminal, others based upon historical and childhood appreciations of activities and cultural values. The landscape can be appreciated at a local level or for its regional significance. Rather than competing, these overlapping parameters enhance the power of the landscape to affect individual lives and the community's environmental appreciation [28].

The protected landscape approach can be according to Brown and Mitchell [29] particularly appropriate in diverse regions of the world, including and the Montenegro, because it: links people's needs and biodiversity conservation; typically comprises a mosaic of land ownership patterns, including private and communally owned property; can accommodate diverse management regimes, including customary laws governing resource management; Has important specific objectives related to conservation of cultural heritage; seeks to bring benefits to local communities and contribute to their well-being through the provision of environmental goods and services; and has proven to work well in certain indigenous territories where strict protected areas have failed, because it accommodates traditional uses and customary tools for resource management. The protected landscape approach according to Brown and Mitchell [29] citing research Brown [30] emphasizes that engages local communities in stewardship of working landscapes because it: reinforces local responsibility for resource management; builds on existing institutional responsibilities; and encourages flexible arrangements for management of resources, including collaborative management agreements and the range of private land stewardship tools.

According to Moore–Colyer and Scott [31] citing research Greeves and Taylor [32], Francis and Henderson [33], Clifford and King [34], Edwards [35], Owen [36], Phillips [37] emphasizes that with the advent of Local Agenda 21 plans and Community Planning. This 'bottom-up' approach has been characterized by a plethora of responses and initiatives aimed at improving local landscapes and quality of life. Currently the policy emphasis has switched to community plans as the principal mechanisms to deliver a bottom-up approach towards the local implementation of the sustainable development agenda. Furthermore, the European Landscapes Convention provides the justification for a more citizen – 1 end approach to landscape matters, together with a more holistic view of landscape itself, where landscape is deemed to be democratic, participatory, inclusive, realistic and international.

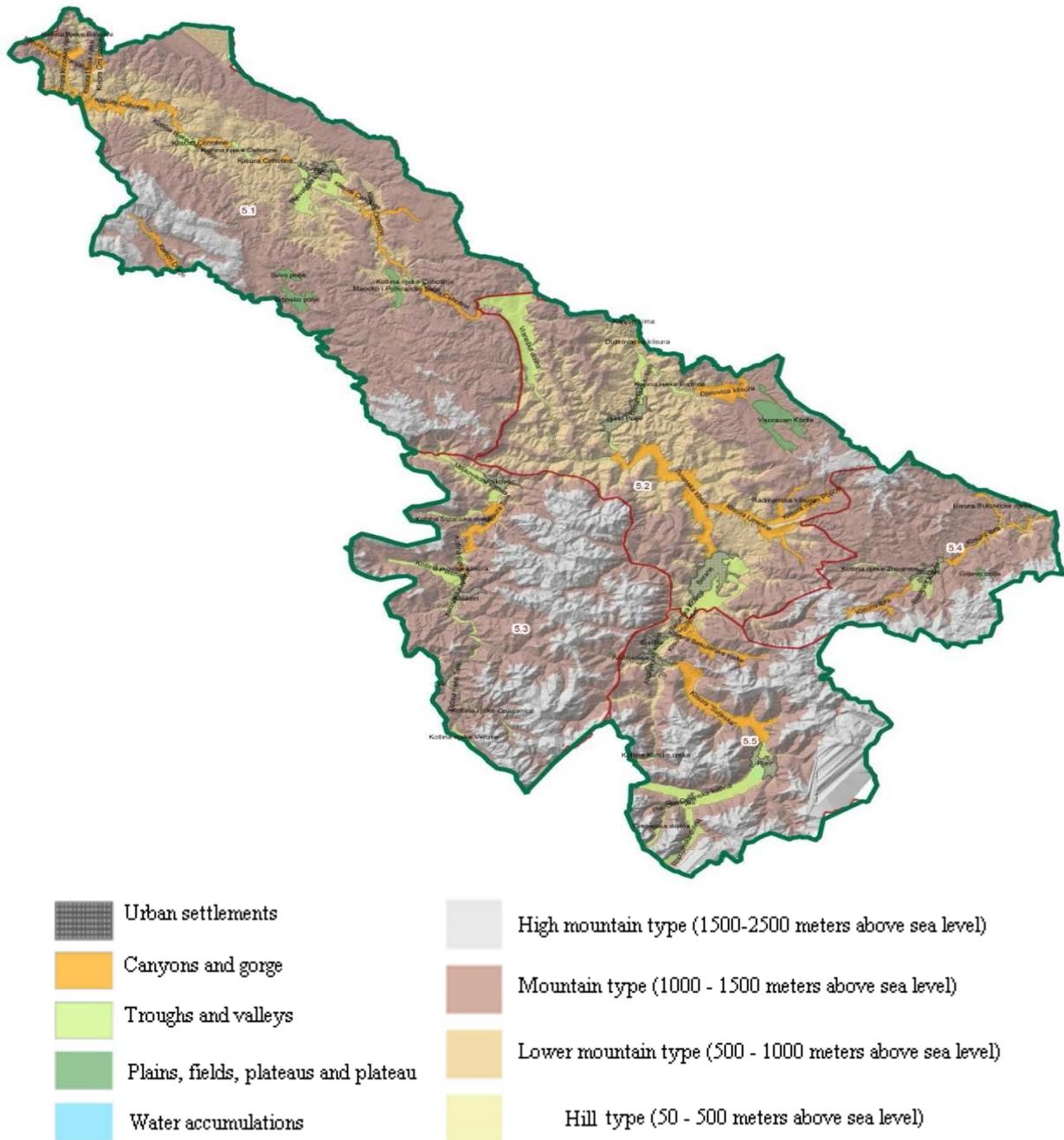
According to the Ministry of Tourism and Sustainable Development of the Government of Montenegro [4] in the areas of mountains and valleys of the northern region of Montenegro (see Fig. 3) we distinguish the following character types landscape: valley and basin mountain rivers (Čehotine, Tare, Lima, Ibra and their tributaries, Vraneška valley, Ropojanska valley...); gorge and canyons of mountain rivers (canyon Drage, gorge Čehotine, Đalovića gorge, Tivranska gorge, Radmanska gorge, gorge Ibra...); plains, fields, plateaus (Maočko and Potkrajčko field, Suvo field, Giljevo field, plateau Korita...); urban settlement (Pljevlja, Bijelo Polje, Berane, Petnjica, Plav, Rožaje, Andrijevića, Gusinje, Plav); water accumulation of the lake (Plavsko, Ridsko, Biogradsko,

Šiško...); lower mountain type (along the river basin Cehotine, along bjelopoljskog areas along the valley Lima, the edge of the Berane basin ...); Mountain landscape type (Ljubišnja, Lisac, Podgor, Vrba, Kosanica, Kovač, Grab, Barice, Stožer, Lisa, Lekovina...) and high mountain type landscape (Bjelasica, Komovi, Hajla, Vlahovo, Zelatin, Visitor and Prokletije) [see 38-39].

A landscape consists not only of interacting biological and geophysical elements but also of people, land uses, infrastructure, social organizations, institutional arrangements, and cultural, spiritual, and utility values. Most people link to wider-ranging markets and transport and communication networks at this level. Landscapes are also the primary level at which the actions of individual households intersect those of others resource users. The right to access, use and manage natural resources becomes subject to social convention and negotiation, themselves framed by more formal rules set down by distant government agencies. Together, these features shape people's lives and produce the natural resources, ecological services, and social and economic relationships on which they depend [40].

These relationships are pressured unpredictably by both local and distant economic change, advances in infrastructure and technology, widening access to markets and information, the growth and movement of populations, and variations in climate and other exogenous forces. People can seldom reduce or eliminate this complexity and uncertainty, at least in the short term. They cope by acting on best available knowledge, learning from the outcomes, and adapting accordingly. Understanding this complexity requires research driven less by the researchers and more by the perceptions, priorities, and actions of the land users [40].

From experiences and the management Kurz et al [41] we can implement the following action approaches: 1) Governance refers to regional conditions and builds on them positively. Regionally meaningful points of departure are, in particular, the cultural, social, economic and political relationships and those pertaining to the natural environment, plus ownership structures; 2) Governance is based on the relationships between the regional actors. The stakeholder landscape that secures the continuity of the cultural landscape is highly diverse. Platforms for debate and dialogue on an equal footing are needed; 3) Governance places the prospects of the inhabitants and those working in these regions at the forefront. Aspects of the continuity of a cultural landscape include: the preservation and development of the economic livelihoods of the people, which have mostly changed in respect of the original grounds for protection, landscape protection and development and monument/settlement protection and development; 4) It is important that the inhabitants of the prospects and an opportunity to help actively shape them. Cultural heritage can be used as a starting and integration point for new developments even aside from tourism, especially in regard to the regional culture of building and the associated technical and artisanal know – how; 5) Governance requires property responsibility and care takers. Who is, in fact, responsible for the Montenegro property? Here, on the one hand, it is a matter of the legislative responsibility of the public authorities and the private responsibility that ownership entails, and on the other hand the operational role in the management of the Montenegro cultural landscape; 6) Governance is based on planning instruments and planning principles. Existing planning instruments and/or their revised versions should focus more clearly on the topic of cultural landscapes, especially for the Cultural Heritage regions. We must increase the use of existing planning instruments (e.g. zoning regulations, village renewal concepts, subsidies for revitalization and provincial planning programmers) and put natural and cultural heritage on the spatial planning agenda. Heritage management planning should be implemented as an active instrument for regional development; 7) Governance enables integration in larger, higher state structures and needs their support. For this reason, to achieve successful implementation – especially with regard to the regional economic potential – integration at higher levels is essential. The local/regional level needs, on the one hand, expert support, motivation and systematic financial aid, whilst on the other hand it offers local, firsthand experience and knowledge, which, in turn, should be incorporated at the strategic, higher levels.



**Fig. 3.** Types of character landscape [4]

#### 4. Conclusion

According to the European Landscape Convention (ELC) [42] landscapes are areas, according to Kerro et al [1] as perceived by people, which character is the result of the action and interaction of natural and human factors. However, there are other circumstances that should be noted when talking about landscapes. Landscapes are constantly being transformed by the people living in them, thus, landscapes are never frozen entities but lively and dynamic. Landscapes can be according to Kerro et al [1] citing research Lefebvre [43] and Simonsen [44] considered as lived spaces or lebensraum, however, Tim Ingold has used the term meshwork to replace the German term, which has a more nuanced meaning than the English space.

Cosgrove [45] emphasizes that cultural cartography as the geographic discipline has become more self-critical about its traditional claims to document at determined scales and with scientific objectivity patterns and processes on the earth's surface, especially for the social world, a significant opening towards the roles of creativity and imagination in making and communicating geographical knowledge has developed. At the same time a greatly expanded number of practicing

artists have moved away from the conventional confines of aesthetic production, visual media and gallery display to engage directly with the world, with the intention of researching, documenting and representing in challenging ways its environmental and social conditions. Advances in information technology that have democratized the gathering, storage, manipulation and display of spatially referenced data have afforded innovative opportunities for artists to fulfill these goals. The traditionally separate disciplinary projects of geography and art thus overlap and converge in exciting ways, and nowhere is this more directly expressed than in map work [45]. Late 20th century theoretical and historical critiques of cartography, and the continuing revolution in cartographic techniques and practices have provided the conceptual and technical foundations for these shared practical developments, so that, contrary to a sometimes expressed concern among geographers that the cultural turn might lead into an epistemological cul-de-sac, new concepts of cartography and new mapping practices are generating an active and intensely practical engagement with everyday cultural life [45]. Because of the changing technological aspects of visual culture as well as a scientific method – derived desire to create taxonomies or articulate what the "visual" is, many aspects of Visual Culture overlap with the study of geographical science, including hybrid electronic media, cognitive science, neurology, and image and brain theory. In an interview with the *Journal of Visual Culture*, academic Martin Jay explicates the rise of this tie between the visual and the technological: "Insofar as we live in a culture whose technological advances abet the production and dissemination of such images at a hitherto unimagined level, it is necessary to focus on how they work and what they do, rather than move past them too quickly to the ideas they represent or the reality they purport to depict. In so doing, we necessarily have to ask questions about ... technological mediations and extensions of visual experience" [see 46-48]. So, landscape does not mean the same as the word environment, it is the environment perceived, especially visually perceived. Unlike other aesthetic objects, such as buildings and paintings, landscape is not a discrete object. Landscape is more than physical features. It is the way a person interprets, interacts, and reacts to the natural and cultural elements of the environment [49].

At the end, as remarkably highlights Kerro et al [1] citing research Cosgrove [50] "landscape is a social and cultural product, a way of seeing projected onto the land and having its own techniques and compositional forms; a restrictive way of seeing that diminishes alternative modes of experiencing our relations with nature". Relph [51] "landscape is not merely an aesthetic background to life, rather it is a setting that both expresses and conditions cultural attitudes and activities, and significant modifications to landscapes are not possible without major changes in social attitudes". Fairclough [52] "environment changes into landscape in the eyes of the beholder who constructs landscape from the material environment".

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УДК 33

### **Области гор и долин Северного региона Черногории: обзор с точки зрения картографии, типологии и защиты ландшафта**

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**Аннотация.** В статье дается географическое представление районов гор и долин Северного региона Черногории с аспектом картографирования, типологии и охраны ландшафта. По данным Министерства туризма и устойчивого развития Правительства

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Черногории (2015) в районах гор и долин Северного региона Черногории выделяется ландшафт регионального и местного уровней (рисунок 1). На рисунке 2 авторы выделяют следующие типы ландшафтов: долины и бассейны горных рек; ущелья и каньоны горных рек; равнины, поля, плато; городское поселение; накопление воды озера; низкогорный тип; тип горного ландшафта и ландшафт высокогорного типа. Терминология и методология, применяемые в исследованиях ландшафта Черногории в контексте его охраны, обсуждались в многочисленных публикациях. Наконец, в заключительных частях статьи, авторы указывают на некоторые аспекты культурной картографии и изучения ландшафтов в прошлом.

**Ключевые слова:** Северная Черногория, картография, типология, ландшафт, защита.