Prerequisites for tourism development in Chechen Republic

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Abstract. The paper is devoted to the development of recreation and ecotourism in the mountainous part of the Chechen Republic. The paper gives definitions of ecotourism. A brief geological and geographical characteristic of the territory is given (a brief history of geological development, a description of low, medium and high mountain ranges) as well as recreational potential assessment. The organization of tourist and recreational activities in the mountainous part of the republic is substantiated on the basis of numerous hydrological objects available here (springs, mountain rivers and streams with clean spring water, mineral and fresh underground water sources, alpine lakes, waterfalls), picturesque landscapes, geological objects, etc. The paper describes tourist routes with the allocation of specific objects (exits to the daylight surface of rocks with paleontological finds, unique hydrological objects, ethnocultural objects – tower complexes), their duration and length. The following routes are described: Benoy; Grozny – Tsesi Gorge; Grozny – Galanchozhsky district; Grozny – Chatoy – Itum Kale – Malchist Gorge. In conclusion, the main directions of tourist recreational framework that will contribute to the sustainable development of the Chechen Republic are highlighted: expansion of the services in the region, investment attraction, jobs creation; promotion of environmental activities; increase of the level of environmental education and general cultural level of tourists and local population, etc.

1. Introduction
The 20\textsuperscript{th} century is characterized by huge population growth rates (from 1.6–2 billion at the beginning to 7 billion at the end of the 20\textsuperscript{th} century), use of natural resources (annually up to 100 billion tons were extracted from the Earth interior), and an increase in the anthropogenic impact on environment. In this regard, from the middle of the 20\textsuperscript{th} century there began to develop various development models of human civilization. The reports by a team of authors headed by D. Meadows to the Club of Rome (1972, 1992) and others, which noted that humanity was approaching a global catastrophe.
At the UN Conference on Environment and Development held in Rio de Janeiro and at the World Summit (Johannesburg, 2002), a new path for the development of humanity was outlined, based on the strategy of the transition of society to sustainable development. The concept of “sustainable development” was first mentioned in the report of the World Commission on Environment and Development, Brundtland, which was understood as development that meets the needs of current generation and does not deprive the future generation of the opportunity to satisfy their needs. Subsequently, there were generated many other definitions of sustainable development.

The concept of “sustainable development” is linked with tourist and recreational activities, in particular, with ecological tourism. The development of tourism in the conditions of mountainous countries (regions) [10–12], which includes the object of this study, is particularly relevant.

2. Methods and materials
The basis of this work was the historical, scientific and analytical approaches to research. The work was carried out using the available literature on the topic under study.

3. Results
The history of the development of ecotourism has several decades and the emergence of this area is due to high urbanization in certain regions and isolation of a man from nature. As a result of environment deterioration caused by the excessive population growth, the so-called “green ideas” and forms of ecological tourism, including visits to national parks, reserves, etc. have become popular [7, 8].

In general, ecological tourism in Russia is at an early stage of development, but has a great future. There is a number of definitions of ecotourism.

According to the definition of the International Union for Conservation of Nature (IUCN), ecotourism means being responsible while traveling through relatively undisturbed natural territories in order to explore and enjoy nature and cultural attractions. It contributes to nature conservation, has a soft effect on the environment, and ensures active social and economic participation of local people who gain benefits from this activity (Ceballos-Lascurain, 1993a).

The main objects of ecotourism include natural open spaces untouched by man, national parks, reserves, historical and cultural sites, etc. The main areas of ecotourism are natural tourism, extreme tourism, sports tourism, scientific tourism and educational tourism.

The development of ecotourism and recreational activities in a particular territory depends, first, on interrelated natural factors (geological structure, climate, topography, soil cover, etc.).

The formation of the modern appearance of the earth in any territory had occurred under the influence of long tectonic movements and shorter exogenous processes. In some geological periods, the crust gradually sagged with the formation of water basins filled with numerous marine organisms, the remains of which were subsequently thick strata of carbonate rocks. During the periods when the earth crust had experienced a rise with the retreat of the sea, shallow-water sand-clay rocks accumulated, which were gradually substituted by more coarse clastic continental sediments.

Various depressions arose in the form of primary valleys with the ancient rivers along them under the influence of erosion of precipitation on land. At the intersection of the water-bearing ground confined to the rocks with favorable filtration properties, river valleys, gullies, wellsprings and springs came to the surface. The presence of various soils is also associated with a variety of soil-forming rocks, relief elements and plants. The modern relief of the territory of the Chechen Republic, 1/3 of which belongs to the mountains, was formed during the Neogene-Quaternary Period.

The middle and high mountains of the republic have significant potential for the development of these types of tourist and recreational activities because of the untouched vast landscapes characterized by landscape diversity, uniqueness, and aesthetic appeal. A wide variety of natural landscapes, geological, geomorphological, hydrographic, and other objects of the highlands are typical for the small territory of the Chechen Republic. In the orographic sense, it is represented by the Pasture, Rocky and Side Ridges [1, 2].
The Pasture Ridge consists of several parallel ranges, i.e. Andean, Kerketsky and others. Many ranges and their individual peaks rise above 2,000 m: Zani (2,295 m), Guolkom (2,262 m), Chermoylam (2,361 m), Ridge. Ishkhoylam (2,249 m), Bachelam (2,420 m) and others. Lithologically, the pasture range is composed mainly of upper cretaceous limestones, and tectonically by the Varandi anticline, bordered in the west with Shatoiskaya and in the south with Ansaltinsk synclines, as well as other structural lower elements.

Flatter northern slope and steep southern slope is a characteristic of the Rocky Ridge. Altitudes are on average amount to 2,700–2,900 m. The top of the highest mountain Khakhalgi has a mark of 3,032 m. Lithologically it is composed mainly of carbonate rocks of the Upper Jurassic Period, and tectonically it is represented by the eastern end of the Northern monocline complicated by the Korilamskaya and Chizhkinskaya anticlines.

To the south lies the highest Side Ridge with snow-white peaks. The rivers dissect it into a number of mountain ranges and ridges. The links of this ridge within the Chechen Republic are the Pyrikitelsky Ridge (western part) with the peaks of Tbeulos-Mtä (the highest peak of the Eastern Caucasus, 4,494 m), Komito-Dattah-Kort (4,272 m), Donos-Mtä (4,178 m), Maistis-Mtä (4,072 m) and the Snow Ridge (eastern part) with the peak Diklos-Mtä (4,274 m). According to some reports, four more peaks with the altitudes of more than 4,000 m stand out near Tbeulos-Mtä. The necropolis the City of the Dead – Tsoi-Pede (15–18 centuries) – is located in this area.

The Side Ridge is composed mainly of metamorphosed clay schists (so-called slate), sandstones and mudstones of the Lower and Middle Jurassic Period. The rocks are characterized by paleontological findings. In particular, the participants in the Unknown Chechnya expedition in the area of the high-mountain village of Buti (Sharoy region) discovered a fossil in the form of a huge seashell (with a height of more than 3 m and a circumference of about 7 m), which is of scientific and educational interest.

In tectonic terms, the Side Ridge is represented by a horst-antilinorium subdivided into several structural elements of a lower order: Pyrikatelsky downthrown block, Kobulamsky horst, etc., complicated by discontinuous violations. The North Jurassic Depression, stretching from the Central Caucasus where it has the greatest width occupies the intermountain space between the Rocky and the Side ridges. Within the Chechen Republic, it is divided into Itum-Kalinskaya, Ushkaloyskaya, Galanochozhskaya, Malkhskaya, Sharoyskaya and other basins represented by terrigenous rocks of Jurassic Period.

The highlands of the Chechen Republic belong to the least anthropogenized territory. Currently, due to the intensification of its development, there is a need for comprehensive assessment of its tourist and recreational attractiveness. It has a diverse and underdeveloped recreational potential. Tourism and recreational facilities can be represented by the following areas: resort, sports and recreational, environmental, extreme and other types of tourism [4, 5].

The main prerequisites for the development of recreation and various types of tourism in the highlands of the Chechen Republic are the aesthetic attractiveness of picturesque natural landscapes (subalpine, nival), unique hydrological objects (lakes, mountain rivers and streams with clean spring water, mineral and fresh underground water sources), ethnic and cultural objects (tower complexes, etc.). Clean water and picturesque valleys are highly recognized among vacationers [6]. In general, the territory of the Chechen Republic is one of the regions of Russia provided with water resources (both surface and underground) [2, 4]. On a limited-sized territory (just over 15 thousand km²), about 3,100 of large and small rivers are concentrated here, several hundred fresh water sources in the form springs, mountain and plain lakes, waterfalls, etc. [2]. The following is a description of some of the old tourist routes passing through the mentioned and other natural objects.

The Route Grozny – the Chatoy village. It passes through the picturesque places of the Chechen plain and the Montenegrin strip, along a road stretching into the depths of the mountains along the valley of the stormy Argun. From the city, the highway abruptly turns south and enters the Khankal Gorge, which is a wide valley between the hills of the Siuil Court and the Suir Court. The Khankal Gorge cuts the Oktyabrskskaya (Novogroznensky Ridge) fold into two parts. After the Khankal Gorge, the highway goes to the Chechen Plain geologically representing the eponymous depression. On the
left side of the road along the left bank of the River Argun is located one of the oldest Chechen villages – Starye Atagi. A small rise begins behind the village and the road enters the gorge. A strip of dense conglomerates of Neogene age crosses the valley of the river Chanty-Argun and forms a narrow Chishkinskoe gorge. On the right into the Chishkinsky depression opens a narrower valley of another river – Sharo-Arguna. When merging, these two rivers form Argun. The Chishkinsky basin arose at the place of distribution of easily eroded sandy-clay sediments of the Neogene. The river terraces are well expressed here.

At the bend of the road, the sandy horizon of Chokraka with a thickness of more than 100 m reaches surface. This layer is famous for the oil that has been extracted from it for more than 120 years at a number of fields in Chechnya and Ingushetia (Starogrozenskoye, Malgobekskoye, etc.).

Between the Zone and Shatoi villages, one can observe the anticlinal fold of an asymmetric structure of significant size (Varanda anticline). After the Shatoy village, the road descends into the floodplain of the River Chanty-Argun, and at 2 km it passes to the left bank where a narrow gorge begins. Near the Vashindara village at a distance of 100–150 m up the River Varanda one can admire a beautiful waterfall and further to Ushkaloy – the limestone cliffs of the banks of the River Chanty-Argun. Here, the strata of rocks are almost vertical, sometimes forming small folds. In this picturesque place, there are small mountain villages, i.e. Bashin-Kale, Nikhaloy, Guchum-Kale. After the Ushkaloy village is a large Chenakhoy gypsum deposit. It is known that gypsum-anhydrite rocks are easily dissolved by water, thereby forming numerous impoverishment and caves where many pigeons are found. Perhaps these places are mentioned in the poem Ismail-Bey, M.Yu. Lermontov [9].

The Chatoy village – the Itum Kale village – the Malchist Gorge. This is a route of all-Union significance (before the USSR fell apart). It starts from the mountain village of Chatoy. An ancient path leads up the gorge of stormy Chant-Argun through passes to Khevsuretiya, and then to Georgia. From Shatoy the automobile road steeply descends into the floodplain of the Chanty-Argun. The valley here is composed of easily eroded sandy-clayey rocks of Paleogene age. This determines both the width of the valley itself and the soft outline of the slopes of the surrounding mountains. However, the situation will soon change. Two kilometers ahead, there is a dark narrow gorge. The layers of the Upper Cretaceous limestone come out from the depths to the surface and the riverbed is so tightly compressed by the walls, leaving no space at the bottom even for a footpath. At the entrance to the gorge, the road crosses to the left bank of the river. In the southeastern part of Itum-Kale, where the River Chanty-Argun flows into the Chaty-Akhk, forming the Tazbichi gorge, there is a large number of towers. About 12 km from Itum-Kale, another small Kerigo River flows into Chanty Argun, flowing along the solid rocks. Therefore, the water in the river is clean and transparent.

Climbing up the valley of a small river flowing here into Argun, there is a beautiful waterfall with a height of about 10 m just 100 meters from the road. The road to Itum-Kale, carved into the limestone rocks, is unusually good. It impresses the traveler with its greatness and beauty. Nature has retained the features of pristine nature, and therefore, it is recommended to go all the way on foot, which will give many vivid and interesting impressions.

Nowadays several interesting routes have been developed for the highland part of the republic (hiking, horseback riding, etc. (Tur-ex, Grozny)) (Table 1), which gives reason to believe that tourism development in this region is promising. This is a significant potential; however, poorly mastered yet for organizing resort, recreational and tourist activities.
Table 1. Routes of the highland part of the Chechen Republic

| Route | Places, duration (km)/(hours) |
|-------|------------------------------|
| Grozny – Tazbichi | Yarysh-Mardy – Yarysh-Mardy Spring, outcrops of carbonate rocks and paleontological findings<br>Tazbichi – Vainakhsk Watchtower<br>Water mill<br>Sharoysk district – Bukkuzinsky waterfall; rock outcrops of the Cretaceous and Jurassic Alpine meadows 93/11 |
| Grozny – Veduchi | 1. Shatoy – Shatoy battle tower<br>2. Nihaloy – Nihaloy Falls<br>3. Itum-Kale – Museum of Local Lore named after H. Isaev<br>4. Ski resort Veduchi 100/10 |
| Grozny – Shatoy – Satti | 1. Shatoy – Shatoy battle tower<br>2. Satti – Sattoy Battle Tower<br>3. Dai village – outcrops of Cretaceous rocks with paleontological findings – bivalves, ammonoids, etc.; Dai Waterfall 110/9 |
| Grozny – Benoy | 1. Zamay-Yurt (spring)<br>2. Simsir (Simsir and Yaryksuysky oil sources)<br>3. Benoy – Yassi River, Ahki Tai Bridge 100/48 |
| Grozny – Tsesi Gorge | 1. Grozny – Mosque The Heart of Chechnya<br>2. Germenchuk – Ethnographic Museum Shira-Yurt<br>3. Kharachoy – Maiden’s Scythe Waterfall<br>4. Khoy – ruins of the ancient city of Khoy<br>5. Lake Kezenoy-Am – discontinuous violation of the type of uplift in limestones of the Upper Cretaceous on the southern slope of a large Varandi anticline<br>6. Mount Bashoy Lam<br>7. Khinoy – a large clam (with a height of more than 3 m) in the area of. Booty<br>8. Tsesi Gorge, Gal-kort, exits of Middle Jurassic rocks, Tsesinsky waterfall 260/120 |
| Grozny – Galanchozh district | 1. Stone Army – karst formations<br>2. Nashkhoy-lam – Upper Cretaceous limestone outcrops with rich marine fauna (sea urchins, ammonoids, inoceramas)<br>3. Terkhinsky waterfall<br>4. The ancient village of Mozara<br>5. Mosque in the village of Haibakh<br>6. Lake Galanchozh 184/9 |

4. Conclusion

The Chechen Republic has a significant natural resource potential and opportunities for the development of tourism, in particular, ecologically oriented tourism designed to harmonize relations between people and the environment. The World Tourism Organization has named ecotourism among the three priority areas for development of domestic and inbound tourism in Russia. Its development as a whole is taking place throughout the country. Mandatory conditions for the development of ecotourism are, if not virgin, then relatively untouched by anthropogenic activities, natural and distinctive cultural landscapes, a sensitive and careful attitude to ecosystems, promoting environmental projects and improving the welfare of local population.

Social and economic development strategy of the Chechen Republic until 2025 includes the development of tourist and recreational complex. Thus, the need to preserve and rationally use both natural and recreational potential of the vulnerable mountain landscapes of the republic is of particular
relevance. In order to prevent environmental tension, the development of tourist and recreational activities should be strictly regulated by the current legislation of the Russian Federation in the field of environmental protection [4].

In general, ecological tourism will contribute to the sustainable development of the Chechen Republic in the following areas:

- Social and economic area, i.e. the expansion of the scope of services in the region, infrastructure modernization, investment attraction, job creation, etc.;
- Environmental area, i.e. the promotion of environmental measures, the conservation of landscape and biological diversity;
- Educational area, i.e. an improvement of environmental education and overall cultural level of tourists and local population.

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