Formation and development factors of Altai ethno-cultural landscapes

To cite this article: D A Dirin and C Madry 2018 IOP Conf. Ser.: Earth Environ. Sci. 190 012005
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Abstract. In the article major factors of culture genesis in the Altai Mountains are analyzed. Natural and social laws of formation and evolution of the Altai’s ethno-cultural landscapes are revealed. Ten basic factors in the formation and development of the ethno-cultural landscapes of the Altai have been identified through the joint application of natural-scientific and humanitarian research methods. Such are the High landscape diversity, the Naturally caused low population of Altai, the Barrier and contact role of the Altai Mountains, the External expansion, the Natural isolation of the Altai geo-cultural space, the Natural environment dynamics in Altai and adjacent contiguous territories, the State regulation of economic activity, the Change in the geo economical and geopolitical situation of the region, the Change in market conditions, the Change in the traditional worldview of the local population. According to the results of the work, it is determined that the culture genesis of Altai is largely determined by natural factors. Now in the Altai Mountains there is a great variety of ethno-cultural landscapes, the laws of development of which are related both to the features of the environment and to social processes. The isolation and inaccessibility of the Altai Mountains territory, its remoteness from civilizational centers, significant internal differentiation determine the low intensity of processes cultural diffusion, and significant sustainability and the preservation of traditional ethno-cultural landscapes. Globalization processes lead to simplification and unification structure of the Altai's geo-cultural space and loss of cultural diversity.

1. Introduction
Most of the planet mountain systems attract the researchers’ attention not only by the diversity and uniqueness of their natural landscapes, but also by the social systems specificity. In the era of globalization in all spheres of human life, the issues of studying ethnocultural diversity and the specifics of the space development by different cultures and ethnoses are becoming increasingly important.

These issues are becoming more relevant as the erosion of local cultural traditions, the unification of perception and behavior stereotypes among different peoples. In addition to the cultural heritage loss, these processes also lead to the loss of ethnic adaptation mechanisms to the natural environment developed by centuries and are consequently the causes of environmental and social-economic crises.
In this aspect, special attention is paid to the regions, where landscapes are noted along with polyethnicty. One of these regions is the Republic of Altai (administrative region of Russia). This article is devoted to the analysis of the formation and development factors of the ethno-cultural landscapes of Altai Mountains (within the Altai Republic boundaries), as well as to identify trends and causes of their modern transformation.

2. Models and Methods
The studying of the human communities’ interaction processes (particulaly ethnoses) with the geographical environment of their habitat has always been one of the most important problems of Geography. At the same time, the issue of developing ethnoses adaptation to the transforming environment is of a particular interest. To study this issue and some others close to it, many concepts and entire science directions arose.

2.1. The concept of ethno-cultural landscape
At the beginning of the 20th century, at the intersection of Geography, Cultural studies and Ethnography, the concept of a cultural landscape began to develop almost simultaneously in Russia [1], Germany [2] and the USA [3]. This concept has undergone considerable evolution during its existence, but its basis remained unshakable. The objects of research in it are "cultural landscapes" as natural-social systems where all the components (the human community, its economy, the natural environment, the elements of material and spiritual culture that are simultaneously a form of adaptation to the environment and its result, etc.) are inextricably linked and interdependent and the cultural landscapes themselves represent the outcome of the societies and nature interaction. Thus, the main properties of cultural landscapes are their systematic and spatial. In addition to purely utilitarian material connections of the community with the natural environment, spiritual interrelations in cultural landscapes are taken into account.

The understanding of the ethno-historical essence of the cultural landscape appeared very quickly, in the framework of this concept [4], which brought Cultural geography closer to Ethnography and led to a new “ethno-cultural landscape” concept. The term “ethno-cultural landscape” (ECL) is referred in this article to the natural and cultural territorial complex formed as a result of the evolutionary interaction of nature and the local ethnic people community, utilitarian, semantic and symbolically mastering and transforming the geographical space according to their spiritual and material needs. An important feature of the ethno-cultural landscape functioning is the culture interpenetration in space and space into culture.

Most studies of ECL are devoted to their classification, delimitation of ECL boundaries, characterization of their current state and trends in their development. At the same time, there are not many publications that reveal the factors and patterns of the formation of such spatial systems.

This article is devoted to the determination of the factors of the culture-genesis in the Altai Mountains, as well as the specific features of the formation and development of ECL of this territory.

2.2. Basic research methods and dates
To achieve this goal, the following methods were used:

2.2.1. Statistical. The analysis of regional statistical information reflecting the peculiarities of spatial organization of the population and economy, as well as their dynamics was carried out. For this purpose, official statistical data of the regional statistical agency (http://akstat.gks.ru/) were used.

2.2.2. The landscape-cartographic method. The study of landscape structure of the territory, settlement systems and nature management was carried out with the definition of the degree of their adaptability and efficiency of functioning. For the analysis, a landscape map was used for the entire study area [5]. At the same time, tools for processing spatial geodata in the ArcGIS 10.1 and MapInfo 12.0 environment were used.
2.2.3. **Unincorporated surveillance.** During the expeditionary studies in the period from 2012 to 2018, modern methods of adapting different ethno-territorial groups of the Altai's population to different types of landscapes were observed; study of the regime of daily and periodic household activity of people related to the functioning of ECL.

2.2.4. **Questioning.** Special questionnaires were developed, which were completed by representatives of local communities, made it possible to identify the main features of the spatial and functional organization of modern ECL, as well as identify key trends in their dynamics. A total of 1,138 people took part in the survey, living in 51 settlements of the Altai Republic. Among the respondents – representatives of 12 ethnic groups.

2.2.5. **Narrative interview.** A sociological survey of representatives of different ethnic groups of the Altai's population was conducted (43 interviews in the period from 2012 onwards), which made it possible to identify significant factors in the spatial organization and development of the Altai's ECL. The interviews allowed to detail the results of the questionnaire and to reveal some factors of ECL development, which were not obvious by the results of the questionnaire.

3. **Results and Discussion**

The formation and evolution features of the Altai's ethno-cultural landscapes are determined by its geographical conditions specificity and socio-historical processes direction. The analysis made it possible to identify the main factors of the Altai's culture, which determined the current state of the ECL s of the given territory, as well as the trends of their further development.

3.1. **The High landscape diversity**

The Altai Mountains are the most important climatic and watershed of Eurasia, situated at the junction of several physiographic countries and climatic sectors. This determines the natural conditions diversity within one mountainous country, and, consequently, the need for a various ways of economic adaptation. Thus, in the Altai, with the combination of different types of semi-desert, steppe, forest, meadow, tundra and glacial-nival landscapes, the corresponding traditional cultural and economic types are represented: hunting and fishing, semi-nomadic, pasture and stables, farming, etc. In Altai, depending on the height and exposure of the slopes, the territories are zoned for winter, spring-autumn and summer pastures, hunting and agricultural lands. However, with a certain economic specialization, all the Altai’s ethno-cultural landscapes are characterized by the diversified nature management.

3.2. **The Naturally caused low population of Altai**

The territory of Altai is characterized by low population density, which is historically associated with the relatively low natural productivity of mountain landscapes, their vulnerability to anthropogenic impact, and also inaccessibility. At present, just over 218 thousand people live on the territory of the Altai Republic (92.9 thousand km²) (according to: Approved estimation of the population of the Republic of Altai as of 01.01.2018 Territorial body of state statistics for the Altai Republic: official site Access mode: http://akstat.gks.ru/wps/wcm/connect/rosstat_ts/akstat/ru/statistics/altayRepublicStat/population/). At the same time, the population is very differentiated within the territory. A complex relief for transport and communal construction determined the settlement of only a small part of the territory (large river valleys and intermountain basins). For a long time, the main limiting factor in the settlement of Altai was the high snow cover (the cause also in the height of the terrain and mountainous terrain), which limits the livestock breeding possibilities and, correspondingly, the population growth with the predominant livestock type of the farm.

3.3. **The Barrier and contact role of the Altai Mountains**

The mountain structures always represent natural obstacles to the cultural interaction of the areas they share, but they themselves often become zones of interpenetration of different cultures. Altai
historically was the territory of interethnic contacts. It was the natural border of the distribution areas of the nomadic Turkic-Mongolian peoples of Inner Asia and the Finno-Ugric peoples of Siberia, who were forest hunters and fishers. Ethnic mixing and interpenetration of cultures took place in Altai. The peoples introduced their own traditions when interacting with other peoples. Thus, Altai is located at the junction of the peripheral zones of several cultural worlds (civilizations): a) Turkic-Mongolian Buddhist-Islamic nomadic (Inner Asia), b) Slavic Christian agricultural (Russia), c) Turkic-Finno-Ugrian Christian-animistic forestry (Siberia). In its geocultural space, elements of all the above-mentioned civilizational types were intertwined.

3.4. The external expansion
Throughout history Altai was repeatedly subordinated to various empires and other state formations. Of course, involving the territory in the sphere of someone's geopolitical influence can lead to significant changes in existing ethno-cultural landscapes and even to the emergence of new ones. This process is accompanied by the foreign people influx into the given territory, the exchange of knowledge between the aboriginal and the newcomers, the emergence of new types of wildlife management, previously untypical for the area, and often the targeted modification of traditional ethno-cultural landscapes. So the Altai accession into the Russian state (the Russian Empire – the USSR – the Russian Federation) led to profound changes in its geocultural space. Firstly, with the Russian population influx, the ethnic structure of the Altai population has dramatically changed (the share of Russians here is now 60%). Secondly, nature management types atypically earlier for the territory – plow farming, maral breeding, forestry and mining industry, etc. appeared there. Thirdly, the traditional way of life of the indigenous population has changed. Particularly significant transformations were associated with the actual forcible transfer of Altaians to a settled way of life and a change in the type of economic relations from the communal-clan to the collective-planned (during the Soviet period of history) and then to the market (in the post-Soviet period).

3.5. The Natural isolation of the Altai’s geo-cultural space
The geocultural space of the Mountainous Altai is differentiated by a system of ridges into individual areas within the river valleys and intermountain basins. This factor has several consequences: a) cultural diffusion in the mountains is slow, but its results are more stable (for Altai, the identity and safety of local cultures is characteristic); b) the relict traditional ECL are preserved within the Altai; c) isolation also determines the social and economic gap from the flat territories.

3.6. The Natural environment dynamics in Altai and adjacent contiguous territories
The natural environment dynamics (for example, primarily climate change) in a pre-industrial society provokes mass migration. According to the studies conducted in Altai [6], the change of material cultures is synchronous with climatic cycles. For example, when the drought occurred in the steppes of the Inner Asia, Altai became an attractive place for nomads, and in connection with it, in the past a change of cultures took place (due to assimilation, mixing, or displacement of some peoples by others). Consequently, the waves of cultural genesis can be linked to the climate dynamics.

However, during the last several decades, global climate changes have been clearly manifested in Altai. At present, the main trend of changes in the Altai environment is the climate warming, which is reflected in the transformation of the territory landscape structure. There is an aridization of the landscapes of the South-Eastern, Eastern and partly Central Altai [7]. This leads to a decrease in the landscapes productivity and a decrease in their resistance to anthropogenic impact. At the same time, the thickness reducing of the snow cover determines the possibility of year-round pasture use. Accordingly, in a number of Altai regions, the hayfields are gradually transformed into pasturaleands. The case of wild animals decreases in winter, which improves hunting conditions. Other consequences of climate warming are an increase in the upper and lower boundaries of the forest and intensive melting of glaciers. All this leads to territorial and structural shifts in the land use by the local population. The instability of natural geosystems functioning in the context of global climate change
leads to an increase in the number of natural disasters – fires, floods, mudflows, avalanches, etc. [8], which affect not only the conditions of economic activity, but also the resettlement, migration situation etc.

3.7. The State regulation of economic activity

State management of the territory development is the most powerful factor in the transformation of ethnocultural landscapes. Government bodies regulate land relations. The state determines even the ideology of the space development and the population life.

The most significant transformations in the nature management of Altai, during the state administration of the territory, were associated with the abolition of private and communal and clan land ownership in the post-revolutionary period (after 1917) and the population transfer to a settled way of life, as well as the economy collectivization in the 1930s. After the collapse of the USSR, most of the collective farms disintegrated. Today, there is a return to traditional forms of management on the basis of private property and the formation of public (often family-clan) brigades in order to jointly conduct economic activities [9]. At the same time, state socio-economic projects are being implemented in the area under investigation, which modify landscapes and change the structure of nature management, introducing new branches of the economy. One of such innovative industries in the nature use of Altai is tourism [10].

3.8. The Change in geoeconomic and geopolitical situation of the region

The change in the geoeconomical and geopolitical situation of Altai is primarily due to the improvement of its transport accessibility, which allows it to sell its products in rather remote markets, and also to use its territory and resources to provide services (for example, tourist and recreational ones) to the population of other regions and countries. The geopolitical significance of Altai also changes as a result of Russia's international interaction with neighboring countries – China, Mongolia, Kazakhstan – these vectors determine its role as an important region of cross-border cooperation or as a frontier outpost on the borders of the country. These processes, in particular, contribute to the introduction of innovations that also transform the ethno-cultural landscapes of the Altai. Nowadays major projects for the transport network development in Altai are being developed. In particular the construction of a gas pipeline and road to China through the Ukok Plateau and the Kanas Pass are actively discussed.

3.9. The Change in market conditions

In market economy a change in demand for certain products often leads to a change in the nature management systems that are reoriented to a new more profitable specialization. Maral breeding, fur trade, goat breeding, beekeeping and other branches of economic activity of the Altai population greatly depend on market demand. The change in the structure of the Altai regional economy is strongly influenced by the rapid tourism development (especially in the most developed northern lowland part and along the main transport arteries). The greater part of the local population is involved in tourist service, and also produces goods that are popular among the tourists (agricultural goods, souvenirs) [9].

3.10. The Change in the traditional worldview of the local population

The change in the traditional outlook of the local population is caused by the processes of socio-ethnic integration and globalization along with the spread of the so-called "mass" technogenic and consumer culture, against the backdrop of degradation and sometimes the disappearance of the spiritual and ecological distinctive ethnos culture. In this case, the following consequences are seen: the loss of "roots" deforms the consciousness and self-consciousness of an individual, deprives him of the centuries-old cultural and historical experience of his ancestors. A person no longer accepts moral and ethical norms and principles (including nature use) of his ethnos, although he can still identify himself with it. An important consequence of the technogenic consumer culture spreading is a constantly
rising psychologically conditioned level of population material needs. However, the growing needs of the population, leading the traditional nature management, leads to the most serious environmental problems. So, in this case with the preservation of management forms (for example, transhumance) its intensification (the number of livestock) is multiplied, that leads to a sharp increase in loads on landscapes and rapid degradation of natural complexes [11].

4. Conclusions
To sum it up we can draw a number of conclusions:

Modern cultural landscapes of Altai are embodied in space as a result of a constantly ongoing process of cultural genesis, caused by a multitude of interrelated natural and social nature factors, the combination of which is unique for each specific ethnic area.

Altai is characterized by a significant diversity of cultural landscapes, determined by the nature diversity and the boundary position of this mountainous country, as well as the stability of traditional culture forms associated with the natural isolation and inaccessibility of the territory, its remoteness from civilizational centers.

The formation and development specifics of Altai cultural landscapes is still largely determined by ethnic factors. It is ethnic identity that is the foundation that unites people of this territory into original cultural communities creating specific ethno-cultural landscapes.

The differences between the ethno-cultural landscapes of Altai are well expressed, in particular, in the existing systems of traditional nature management, adapted to local natural conditions.

The globalization processes lead to simplification and unification structure of the Altai's geo-cultural space and loss of cultural diversity.

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