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SCENARIOS OF THE AREA DEVELOPMENT AS A TOOL FOR TOURISM DESIGN: AN APPROACH TO DEVELOPMENT

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Abstract: The development of tourist areas occurs under changing conditions; design solutions can quickly become outdated. The purpose of the study is to develop a method of adaptive scenario planning applicable for the design of tourist areas. The theoretical foundation of the study is a systematic and integrated approaches to the study of tourist areas, and the concepts of the recreation and tourism opportunity spectrum. The research materials include scientific works, cartographic data on sample areas, and the results of a stakeholder survey. We used observation, survey, and cartographic methods. The scenario development process includes 6 stages. The result is the creation of 3 types of interrelated scenarios: 1) spatial scenarios at the level of tourist opportunity zones, 2) spatial scenarios at the level of functional zones, 3) program scenarios. We studied examples of 4 types of tourist areas in the foothill and low-mountain regions of Altai; identified a range of basic tourist opportunities, including 11 types of spatial zones, as well as the features of a set of tourist opportunities for each sample territory. The proposed method for developing scenarios makes it possible to ensure the competitiveness for tourist areas in the future. This is due to having the widest possible provision of opportunities on the territory for different categories of visitors, as well as through monitoring and making changes to program and spatial scenarios at the level of functional zones.

Key words: scenario planning, tourism design, destination, site, recreation opportunity spectrum, tourism opportunity spectrum, adaptive management

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INTRODUCTION

For design tourism areas at the destinations and sites level, it is important to develop a coherent development concept that takes into account the interests of different stakeholders (Pomeroy and Douvere, 2008; Clark et al., 2016). At the same time, the area development occurs in constantly changing conditions (the level of demand, the preferences of visitors, etc. change). In order to maintain the competitiveness of tourist areas it is necessary to adapt to these changes. One of these ways to adapt to changing conditions is to design scenarios for the tourist areas development. Scenario planning in economics and politics has received active development since the middle of the last century.

Sondeijker (2009) describes three phases in the development of futures study and scenario planning, each leading to a specific type of scenarios. *The first generation of scenarios*, developed since the mid-40s. last century, were based on a statistical approach and used quantitative methods such as trend analysis, trend extrapolation, cross-impact analysis to construct them. Initially these scenarios have been applied at the public policy level. *During the second phase* which began in the 1970s scenario planning entered the world of business and corporate strategic planning.

Forecasting has been replaced by foresighting, a more exploratory and prospective approach. Key uncertainties of the business environment that drive the future of the business are used as a framework to delimit multiple alternative futures, each illustrating a direction to which the business could evolve. *The third generation of scenarios* is related to sustainable development. Such scenarios must simultaneously solve environmental, social and economic problems and this requires using a holistic, systemic, integrative, participatory, reflexive, comprehensive and anticipative as well as adaptive approaches when developing them (Postma, 2002; Postma et al., 2013; Sondeijker, 2009).

In tourism futures studies and scenario planning are still in its infancy. The second generation of scenarios for tourism began to develop only in the early 2000s (Postma, 2015). The European Tourism Futures Institute makes a significant contribution to the development of tourism scenario planning. Institute staff are developing an approach to creating scenarios based on identifying driving forces and uncertainties (Postma, 2015). Scenario development is viewed as a

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cyclical process that includes research and monitoring drivers, scenario development / compilation, policy and innovations (based on scenarios), impact analysis and evaluations. In this process neither trends nor extrapolations of trends are taken as a starting point, but uncertainties instead. The experience of developing scenarios for the tourism industry on a national scale is described (Enger et al., 2015). Wyatt et al. (2021) presented the experience of developing sustainable scenarios for the development of territories based on participatory mapping. The authors proposed activity-specific scenarios that include the following types: "Business as Usual", "Conservation", "Sustainable Prosperity", "Intensive Development". Seyitoğlu F. and Costa C. completed the systematic review of scenario planning studies in tourism and hospitality research (Seyitoğlu and Costa, 2022). It showed that there is still a need for scenario planning studies in tourism and hospitality. There are still a number of unresolved methodological issues when creating scenarios in tourism, such as methods of applying adaptive planning for the area development, procedures for assessing the social, economic and environmental consequences of scenarios at different levels (organizations, destinations). In addition, the issues of translating scenarios into specific actions and decisions that underlie the design of tourist areas are of particular importance. In this research, we set a goal to develop a methodology for creating scenarios for tourist areas. It would be applicable when designing such areas at the levels of destination and sites and would be consistent with adaptive planning. We chose foothill and low-mountain territories of Altai as sample territories for the study. These areas have a good transport accessibility and tourism has been developing intensively here in recent years. In particular, new territories are beginning to be developed here as tourist areas. It requires their coordinated development. The plans and main indicators of territorial development are reflected, as a rule, in strategic planning documents at the regional and municipal levels.

Investment projects for the tourist areas development include schemes for the placement of infrastructure and tourism facilities, functional zones and quantitative indicators of development. There are scientific publications devoted to the analysis of approved territorial planning projects of the Altai Mountains. These articles aim to determine the priority placement of tourism facilities and solve the problem of balanced urban development taking into account environmental and economic goals (Skryabin, 2019; Otto and Kulikova, 2021). Among the studies devoted to the design of tourist areas in the Altai, the following can be noted, which are useful in developing scenarios. There is a study on the analysis of tourist resources, level of facilities development, population demand for recreation and the volume of investment in the tourism sector in the Altai (Minaev, 2021). An assessment of the tourist and recreational potential of the Altai territory was carried out for the purposes of architectural design (Pomorov and Pomorov, 2021). A number of works are devoted to the study of the architectural and planning organization of existing tourist complexes. In particular, the types of tourist complexes have been identified depending on the planning organization in the Altai Republic (Ganzha and Tenova, 2019).

We chose zoning as the main tool for developing scenarios, since this is the tool that is best suited for creating place-based development planning scenarios. Zoning is widely used in tourism (Fertas et al., 2022; Mukayev et al., 2022; Pathmanandakumar et al., 2023; Waiyasusri and Tananonchai, 2022). However, the criteria underlying the allocation of zones may vary. There is experience in functional zoning of the transitional area from the plains to the mountains in the Altai taking into account recreational capacity (Prudnikova and Baryshnikova, 2009). In our work, when developing scenarios, we used zoning based on the tourism and recreational opportunity spectrum. Similar work has not been carried out for Altai, with the exception of our work on the classification of the tourist areas in Bolshaya Belokurikha (Tabakaeva et al., 2023). The present research is to contribute to the literature on the application of a recreation and tourism opportunity spectrum concept for creating tourist areas development scenarios. The way we propose to create scenarios is different in that the development of scenarios takes into account not only the spatial component as zones with different opportunities, but also the functional component within each opportunity, as well as the behavioral component.

MATERIALS AND METHODS

The theoretical and methodological basis of the research was a systematic and integrated approaches to the study of tourist areas, as well as the theoretical foundations of recreational geography, including the structure of recreational activities, the principles of creating recreation programs (Preobrazhensky, 1975; Zorin and Kvartalnov, 2000), the concept of fixed images “place-function” (Nikolaenko, 2001), sense of place concept (Datel and Dingemans, 1984; Hang et al., 2023). Works on the structure and evolution of tourist and recreational space had great importance when carrying out the research (Preobrazhensky, 1975; Butler, 2006; Lunkar, 2014; Aleksandrova, 2020, etc.).

The methodological basis for creating scenarios of area development is the Recreation Opportunity Spectrum (Clark and Stankey, 1979) and the Tourism Opportunity Spectrum concepts (Boyd and Butler, 1996; Butler and Waldbrook, 2003; Carroll and Hession, 2015). Recreational opportunity is understood as a combination of physical, biological, social, and managerial conditions that give value to a place for visitors, and kinds of activities and the experiences they desire. Tourism opportunity is based tangentially off of the recreation opportunity, but differ in a specific set of opportunity factors. In this paper, we use the term “tourism opportunity” that includes not only recreational opportunities.

The features that need to be taken into account when developing scenarios for the tourist areas are primarily the spatial heterogeneity of the distribution of tourist resources and attractions, as well as the diversity of recreational and tourist opportunities expected by visitors. Therefore, we chose zoning as the main method for scenario development process. We carried out zoning at two levels: 1) at the level of the opportunity spectrum with the development of a series of spatial scenarios (zones with a certain opportunity), 2) at the level of functional zones located within a zone of the opportunity spectrum. Such functional zones include the zone of hospitality enterprises, trade, transport, business activity, natural, cultural, entertainment, sports, and medical zones (Morozova, 2012; Zhukova, 2013). In addition, there are zones for the protection of natural and cultural-historical sites, where there are restrictions on visiting. Thus, the spatial scenario for the area development

is aimed at creating the necessary conditions on the territory to meet the needs of a certain category of tourists. It includes requirements for the created tourist facilities, the level of improvement and transport accessibility of the territory, as well as for management actions to maintain the necessary conditions. A set of spatial scenarios forms the tourism opportunity spectrum of a destination. In addition to spatial scenarios, based on field observation data, we identified scenarios for visitor behavior in sample areas. We propose to call them program scenarios. Program scenarios are sets of interrelated and significant for tourists elementary recreational activities. They can be implemented both within one and in several zones of tourist opportunities.

We chose to study sample areas in the foothill and low-mountain regions of Altai, which belong to the following types: 1) long-term development areas with a predominance of short-term tourism - in the vicinity of Lake Aya, 2) long-term resort development areas - the federal resort city of Belokurikha and adjacent territories, 3) new development areas based on development tools - a special economic zone of the tourist and recreational type "Biryuzovaya Katun", 4) pioneer development areas - the natural and archaeological complex "Denisova Cave". The research materials included sets of cartographic data for the sample areas, websites of tourism projects, and the results of surveys of stakeholders. In addition, data on the spatial behavior of tourists obtained using UAVs and video recordings, published previously, were used (Dunets et al., 2023). We studied current tourism use in selected sample areas, including forms of recreational settlement, features of tourism facilities, ongoing tourism projects, and spatial behavior of tourists. Data collection was carried out using observational methods, stakeholder interviews, and analysis of available published text and map data. The stakeholder survey included questions regarding the experience of visiting the functional zones, missing elements of tourism infrastructure in each functional zone, the preferred set of opportunities in the destination, as well as descriptions of visitor behavior scenarios. The questionnaires were posted on the website https://geo.asu.ru/structure/economgeo/projects/altai_tourism/. In addition, a typological analysis of tourist facilities was used both on the ground and on the basis of cartographic materials. The collected data allowed for participatory mapping among stakeholders and the uploading of aggregated results into Web-GIS, as well as the development of a set of spatial scenarios for each sample area (Figure 1).

RESULTS AND DISCUSSION

An analysis of the tourism projects development in selected sample areas in the foothill and low-mountain regions of Altai showed that there are a number of problems in their implementation. Among them is the lack of coordinated actions among stakeholders in the areas development, which leads to chaotic development and the emergence of various conflicts in the land use. In some cases, there is a violation of the stages of project implementation due to mistakes in the design. For example, large tourist complexes are being created that do not meet the current volume and needs of the market. This leads to problems with attracting investors. As a result, imbalances arise in the development of supporting and tourism infrastructure, which ultimately leads to the impossibility of effective implementation of projects. All this confirms the importance of taking into account changing conditions when planning the development of tourist areas. In addition, this necessitates the need to present the process of creating scenarios for the tourist area development in the form of successive stages (Figure 2).

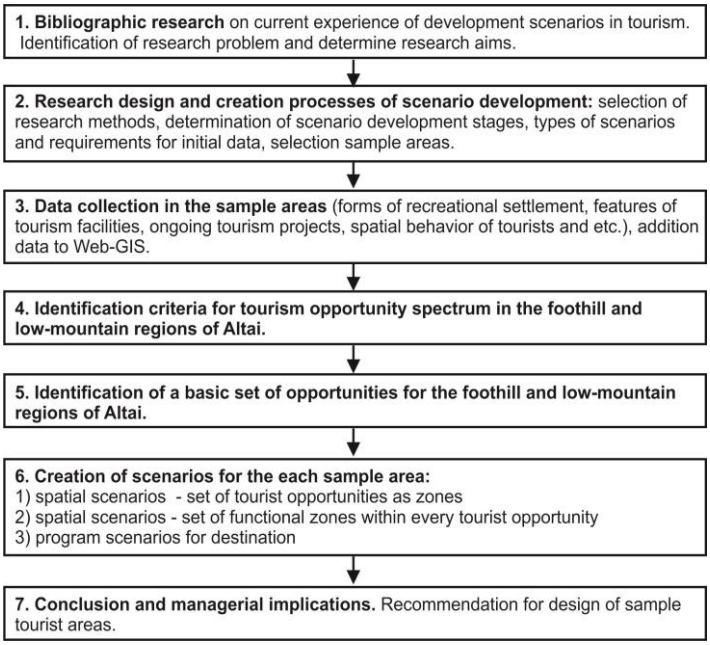

Figure 1. Research flow chart (developed by authors)

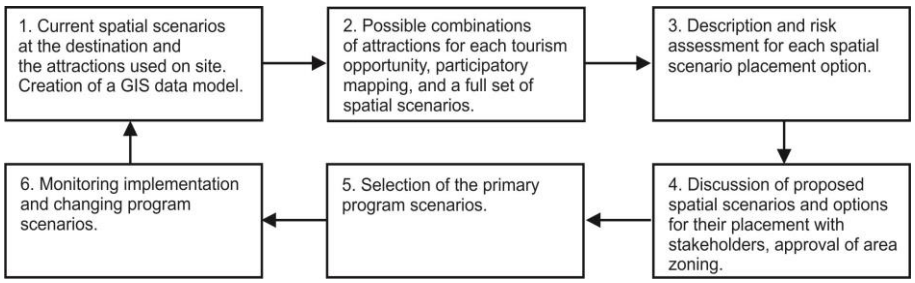

Figure 2. The process of creating scenarios for the development of a tourist area (developed by the authors)

At the first stage of the scenario development process, it is necessary to collect data on the current tourist use of the destination and the set of attractions at the place level. The outcome of this stage is a geoinformation model of the designed area, which includes a variety of date in the form of Web-GIS layers: tourist and supporting infrastructure, attractions, development restrictions, sensitivity of landscapes to recreational loads, tourist flows, types of tourist activities, etc. The task of the first stage is to identify which spatial and program scenarios are currently being implemented on the area, or what prerequisites and where exist if the area has not yet been developed. As an example,

we created a Web-GIS for the pioneer development area - the natural-archaeological complex "Denisova Cave" (http://geomixer.asu.ru/api/index.html?10F1770A61CB4D4F95E4BA1016DD3446).

The tasks of the second stage are to identify possible combinations of attractions for each tourist opportunity, assess the suitability of areas for different types of tourist activities. Another important task is participatory mapping to collect stakeholders' opinions on the necessary infrastructure in each functional area, as well as the expected set of tourism opportunities in the destination. Based on these data, conclusions can be drawn about what tourism opportunities are still missing or underdeveloped. The outcome of this stage is the development of a complete set of spatial scenarios - the tourism opportunity spectrum of the destination, as well as program scenarios, reflecting them in Web-GIS.

At the third stage, it is necessary to identify and assess the risks for each option for placing spatial scenarios, as well as program scenarios. Risks in the implementation of any scenario on the area are considered in the environmental, economic and social spheres. To assess them, the criteria of the probability of causing damage and the level of damage are used. The probability of causing damage is assessed on a scale: very likely, likely, possible, unlikely, extremely unlikely, the level of damage is assessed as catastrophic, significant, medium, low, insignificant. The outcome of this stage is the selection of location options for spatial scenarios with the lowest risks. At the fourth and fifth stages, a final discussion of the proposed spatial and program scenarios and options for their placement is organized with stakeholders. If necessary, they are adjusted. The outcome of the stage is the approval of the area zoning and the creation of scenario maps of tourist activities.

The final stage of the scenario development process for tourist area is associated with monitoring the implementation of scenarios and making changes to program scenarios or spatial scenarios at the level of functional zones within any tourist opportunity. The main task of monitoring is to track the demand by visitors for tourist facilities and program scenarios within the tourism opportunities, as well as to analyze the factors influencing this demand. The basis for the development of monitoring indicators can be a number of indicators proposed in 2023 for the tourism industry data model by the Federal State Statistics Service of the Russian Federation: coefficient of use of available places in collective accommodation facilities (%); number of persons staying in individual accommodation facilities; number of natural and cultural-historical attractions, routes (by type) within tourist opportunity; number of tourist facilities by type within tourist opportunity; number of visitors of tourist facilities/tourist attractions by type (average, peak)(people); load of tourism facilities by type/object (average, peak)(%); consumer satisfaction with tourist services (by type, object, season).

For each indicator, standards are established in the form of minimum acceptable values for these indicators, taking into account economic, environmental and social consequences. Monitoring can be carried out both in terms of program scenarios and spatial scenarios at the level of tourist opportunities (zones). To identify spatial scenarios, we conducted field research, surveys of visitors and tourism industry experts, and the study of cartographic materials. The criteria for identifying spatial scenarios at the level of tourist opportunities were the type of access to the area, the type and number of accommodation facilities, the level of contacts with other visitors, and types of tourist activities. We have identified the following types of tourism opportunities for the foothill and low-mountain areas of Altai, which represent basic spatial scenarios:

I. The urban area is characterized by the highest level of contacts between visitors and the availability of comfortable accommodation facilities, which are represented by stationary hotel-type accommodation facilities.

II. Tourist complexes - a comfortable stay in hotels with a high level of landscaping and amenities, the level of meetings with other visitors is from high to average. Hotels can be located in intersettlement or natural areas in relative proximity to urban areas.

III. Sanatorium zone - the use of the sanatorium territory for treatment and recreation, a high level of meetings with other visitors.

IV. Holidays in rural areas are distinguished by an average level of amenities, accommodation in guest houses or cottages. Characterized by a high level of contact with other visitors.

V. Public recreational areas for short-term recreation with a high level of contact with other visitors. A variety of service facilities, without accommodation facilities.

VI. Natural areas with roads provide quick and short-term access to nature in comfortable conditions. Accommodation in campgrounds with cabins in areas adjacent to locality. The zone is characterized by an average level of amenities and a high level of contact with other visitors. There are opportunities for car, motorcycle, and bicycle trips on paved roads, as well as short walks at stopping places.

VII. Pedestrian zones are areas with specially equipped walking recreational routes (hiking trails, running paths, fitness areas), located near highly developed areas with a high level of contact with other visitors.

VIII. Areas of public recreation located near water bodies. Here you can relax on the beach, as well as water activities.

IX. An area for remote, comfortable recreation in nature with the possibility of using means of transport. Accommodation is organized in glamping camps or at remote campgrounds with cabins.

X. Hiking zone - these are remote areas of hiking routes for walking without overnight stays.

XI. Trekking zones are remote natural areas for long hiking trips with a backpack and overnight stays in a primitive campsites using a tent.

In addition, features of spatial and program scenarios were identified for selected typical destinations in the foothill and low-mountain regions of Altai. **The tourist destination "Aya"** belongs to the type of long-term development areas. It has been a popular destination for children and families since the 1950s. The most active development of tourist facilities has occurred in the last 25 years. Here is one of the warm lakes of Altai with water temperatures in July from +24 to +26°C. A large complex of swimming pools "Altai Riviera" was built next to the lake. The level of accommodation facilities in the destination varies significantly from comfortable hotels and small inns to campgrounds with cabins and summer guest houses.

Spatial scenarios for this destination are shown in Table 1. The survey revealed different points of view of stakeholders on the use of the southern and southwestern shores of Lake Aya. Some people prefer a pedestrian area with health routes, others would like to get around by bicycle. This territory belongs to the special protection zone of the Aya natural park. Therefore, taking into account environmental restrictions, priority is given to the use of the territory within the pedestrian zone.

Table 1. Spatial scenarios for long-term development areas with a predominance of short-term tourism. Sample area: Lake Aya area, neighboring villages Katun, Aya and the adjacent part of the Aya natural park (* - numbering is explained in the text above)

Spatial scenario type*	**Functional zones within the tourist opportunity**	**Results of the inventory of tourism opportunities / Recommendations for the development of spatial scenarios based on a survey of stakeholders**
II.	Zone of hospitality and accommodation facilities, shopping zone, business activity zone, entertainment zone, transport infrastructure zone, cultural zone	Recreational opportunity is fully developed. The chaotic allocation and the high concentration of accommodation facilities are perceived negatively by visitors. / **Recommendations:** It is necessary to develop the entertainment facilities and cultural zone.
IV.	Zone of hospitality and accommodation facilities, shopping zone, transport infrastructure zone, cultural zone	Recreational opportunity is developed. There are many rural guest houses. / **Recommendations:** It is necessary to improve the amenity of guest houses and expand the types of rural entertainment.
VI.	Transport infrastructure zone, shopping zone, zone of hospitality and accommodation facilities, natural attraction zone	Recreational opportunity is overdeveloped. It is characterized by a large concentration of summer campgrounds with cabins in areas adjacent to locality. / **Recommendations:** In some places, it is necessary to develop a road network for motorized travel, and design separate lanes on the road for cyclists. There are a few year-round accommodation facilities.
VII.	Natural attraction zone, shopping zone	Recreational opportunity are present, but underdeveloped. / **Recommendations:** It is required to develop a walking trail along the shore of Lake Aya, install navigation signs and interpretive stands, create thematic photo zones.
VIII.	Zone of hospitality and accommodation facilities, shopping zone, entertainment zone, cultural zone	Recreational opportunity are fully developed. The chaotic allocation and the high concentration of accommodation facilities are perceived negatively by visitors. / **Recommendations:** It is necessary to increase the number of navigation signs and consider measures to regulate tourist flows.
IX.	Zone of hospitality and accommodation facilities, transport infrastructure zone, natural attraction zone	Recreational opportunities are present, but underdeveloped. **/ Recommendations:** A road network for motorized travel is required. There are a few navigation signs.
X.	Natural attraction zone	Recreational opportunity is poorly developed (other uses of the area limit its use). / **Recommendations:** The recreational opportunity is in demand by local residents. There are a few navigation signs. Trails are required.
XI.	Natural attraction zone	Recreational opportunity is poorly developed (other uses of the area limit its use). / **Recommendations:** It is necessary to create a network of trails with the campsites.

Several program scenarios have been identified in the destination. The target scenario may include visiting accessible natural sites: the banks of the Katun River, Lake Aya, *viewing platform* near the Devil's Finger rock, relaxing at campgrounds with cabins (using bath complexes and barbecue areas). In summer, swimming and water activities on Lake Aya, in the pools on the campgrounds area, are of particular interest. Important tourist facilities that require improvement are the creation of public places for short-term recreation (gazebos, restrooms). There is a need to create a visitor center for the Aya Natural Park. It can be located near the bridge over the Katun, where the main flow of vehicles passes. Almost all program scenarios in the destination include visits to various small retail outlets and souvenir booth. Another attracting factor is small cafes that attract visitors with music in the evening.

In addition to walking, the target scenario includes close routes by car, ATV or horseback. Rafting is the most popular offer for guests of campgrounds with cabins in the summer. Traditional are 1.5 - 2 hour routes along the Katun in the form of an excursion. Campgrounds with cabins often offer services: velvet antler and herbal baths, saunas, massages, herbal teas. However, at present there is a request for the creation of *viewing* platforms and photo zones in places of walking to the Devil's Finger rock and to the top of the town of Negodyayka, etc. The destination needs to create parking areas. A successful example is the parking lot near the swimming pool complex near Lake Aya. In addition, it is recommended to create information stands showing options for movement around the destination and popular attractions.

In the Altai region, **the Belokurikha resort town** belongs to the long-term resort development areas. The resort area of Belokurikha is a separate part of the Belokurikha city, which stretches along the valley of the river of the same name. Currently, there are 16 sanatoriums and 25 hotels in Belokurikha. Additional hospitality facilities includes restaurants and cafes. Spatial scenarios for this destination are presented in Table. 2.

Among the program scenarios, the target scenario is stay in a sanatorium and treatment in accordance with an individual recommendations. Additional program scenarios may include walking around the sanatoriums area, visiting attractions in the resort area and historical places, relaxing in a park area near the Belokurikha River. Most tourists visit health paths and climb the cable car to Mount Tserkovka, buy souvenirs in local market and try dishes in cafes and restaurants. We conducted a survey of 200 respondents about the possibilities of developing health tourism as the main activity in the Belokurikha resort (link to the questionnaire http://docs.google.com/forms/d/1y1NGf-XKd1aWedaa1P2 DzrkOVOarW-T5wKV249YiaWw/edit). It was revealed that among related types of tourist activities in health tourism, priorities are associated with massage, visiting saunas (bath complexes), swimming pools or open reservoirs in the summer, as well as health paths and excursions. Activities are arranged in order of importance for visitors: massage, sauna, walking, swimming pool, historical and botanical excursions, special meals, outdoor recreation, creative activities, etc. The use of water

procedures is one of the most attractive recreational activities for tourists. In addition, about 80% of respondents are ready to participate in health routes. Such routes will be determined taking into account acceptable physical activity (in accordance with the level of health). Tourists will be able to visit natural and historical attractions.

Table 2. Spatial scenarios for long-term resort development areas. Sample area: Belokurikha resort town, Belokurikha 2 Gornaya and nearby attractions to tourists (* - numbering is explained in the text above)

Spatial scenario type*	**Functional zones within the tourist opportunity**	**Results of the inventory of tourism opportunities / Recommendations for the development of spatial scenarios based on a survey of stakeholders**
I.	Zone of hospitality and accommodation facilities, shopping zone, sports zone, transport infrastructure zone, cultural zone	The opportunity is developed quite fully. The hotels have a small area and are combined with shops, they are located close to the shopping area. / **Recommendations:** It is necessary to connect hotels informationally and logistically with cafes and restaurants.
III.	Zone of hospitality and accommodation facilities, medical zone, sports zone, entertainment zone, cultural zone	Recreational opportunity is fully developed. 16 sanatoriums with their own territory. The largest of them have a large treatment area and park space with opportunities for recreation and entertainment. / **Recommendations:** The growing share of short-stay tourists requires more SPA treatments and entertainment for family tourists.
IV.	Zone of hospitality and accommodation facilities, shopping zone, transport infrastructure zone, cultural zone	Recreational opportunity is fully developed. / **Recommendations:** The cultural zone is poorly developed, there is practically no sports zone, there are recommendations for the development of an entertainment zone.
VI.	Transport infrastructure zone, shopping zone, zone of hospitality and accommodation facilities, natural attraction zone	Recreational opportunity is present, but underdeveloped. / **Reco-mmendations:** In some places, it is necessary to develop a road network for motorized travel and design separate lanes on the road for cyclists.
VII.	Natural attraction zone, shopping zone	Recreational opportunity is present. There are a large number of visitors. / **Recommendations:** It is necessary to develop an interpretive signs for attractions along the routes. Pedestrian trails are required.
IX.	Zone of hospitality and accommodation facilities, transport infrastructure zone, natural attraction zone	Recreational opportunity is present, but underdeveloped. / **Recommendations:** A road network for motorized trip is required.
X.	Natural attraction zone	Recreational opportunity is developed. / **Recommendations:** Few navigation and interpretive signs. Trail development is required.
XI.	Natural attraction zone	Recreational opportunity is present, but underdeveloped. There are a few equipped trails. / **Recommendations:** It is possible to create trails to Mount Sinyukha and in the valley of the Peschanaya River.

Table 3. Spatial scenarios for new development areas based on development tools. Sample area: Special economic zone of tourist and recreational type "Biryuzovaya Katun" (* - numbering is explained in the text above)

Spatial scenario type*	**Functional zones within the tourist opportunity**	**Results of the inventory of tourism opportunities / Recommendations for the development of spatial scenarios based on a survey of stakeholders**
II.	Zone of hospitality and accommodation facilities, shopping zone, transport infrastructure zone	The engineering infrastructure has been created, and the tourism facilities is at the stage of extensive development. / **Recommendations:** It is necessary to develop catering companies.
V.	Business activity zone, entertainment zone, sports zone, transport infrastructure zone	A public area has been developed in the central part of Biryuzovaya Katun. / **Recommendations:** There are a few places of social activity in other parts of the destination.
VI.	Zone of hospitality and accommodation facilities, transport infrastructure zone, natural attraction zone, cultural zone, entertainment zone, sports zone	The opportunity is quite well developed. There are a sufficient number of modern hotels and campgrounds with cabins in the river valley Katun at a short distance from the public center of Biryuzovaya Katun. / **Recommendations:** There are not enough landscaping elements at stopping places; interpretive signs are needed.
VII.	Natural attraction zone, cultural zone, sports zone	There are walking and running trails. / **Recommendations:** It is necessary to develop fitness zones, circular trails on mountain slopes, and add amenity elements (benches, gazebos, etc.).
VIII.	Shopping zone, natural attraction zone, entertainment zone, sports zone	Well-developed entertainment area near the beach of the artificial lake. / **Recommendations:** It is necessary to organize other types of entertainment during periods without swimming.
IX.	Zone of hospitality and accommodation facilities, transport infrastructure zone, natural attraction zone, entertainment zone	There is initial development of the opportunity. / **Recommendations:** It is necessary to develop a road and path network in nature specially equipped for movement by vehicles, to create interpretive signs and photo zones.
X.	Natural attraction zone, cultural zone	There are excursions along the mountain slopes and caves, trails along the banks of the Katun, and river rafting. / **Recommendations:** It is necessary to improve the trail network in nature and create interpretive signs.

The results of the survey showed the need to include in the target scenario a visit to the new tourist complex Belokurikha 2 Gornaya. It is located 5 km from the Belokurikha resort. A scenic switchback road with viewing platforms for photography leads to Belokurikha 2 Gornaya. In Belukurikha 2 Gornaya, tourists visit the landscape rocks «Buddha of Medicine» and «Ambarchiki», the museum of the old village «Andreevskaya Sloboda», as well as areas of mountain taiga

forest, etc. There are prospects for the construction of small hotels and glamping sites in the mountainous part with the opportunity to visit the natural environment. For example, the campground with wooden cabins «Lesnaya skazka» belongs to a sanatorium located at the resort. In addition, in the foothill zone, 15 km from the resort town, there is a campground in the form of a traditional village «Belokurikha Village» (renamed the rural yard «Kalina Krasnaya»), nearby is the agricultural enterprise «Altai Meadows» with a farm produce store. The program scenario for the resort visitors also includes the visitation of the surrounding rural areas: the villages of Novotyryshkino, Danilovka, Solonovka, etc. There are places for entertainment, tourists are introduced to the features of the villages and are offered traditional products.

Near the Belokurikha resort there is the Altai Foothills natural park. There are both opportunities for walking routes near the resort area, and for routes with a backpack to the highest part of the park (Mount Sinyukha) and to the Peschanaya River gorge. **The tourist destination "Biryuzovaya Katun"** belongs to the new development areas based on development tools. In 2007, a special economic zone of a tourist and recreational type was created here. Infrastructure construction has begun. Spatial scenarios for this destination are shown in Table 3.

The target spatial scenario for the development of Biryuzovaya Katun is the eco-oriented development of the territory with fragments of intensive and extensive use, as well as functional zones with a preserve regime. The Katun River is, on the one hand, an ecological corridor, and on the other, the attraction for tourists. Therefore, destination program scenarios include a linear-radial type of short eco-friendly routes. It is possible to organize radial exits from the road route along the river. Linear routes along the spurs of the Seminsky ridge above the Katun River valley will also be interesting. The karst complex "Taldinsky Caves", which has the status of a natural monument, is an attraction for eco-friendly routes, including underground ones. We have identified 4 target groups of tourists, for which program scenarios may vary:

1."Family with children": it is important to add an ecological trail to a mountain pass above the lake, a visit to the petting zoo, a family quest, relaxation in the family area near the water slides in warm weather.

2. "Youth": in addition to stay in campgrounds and recreation at the sites, it is possible to include the following activities: rafting and a visit to the near-water Ichthyander cave, cycling along the Katun, volunteer activities for the development of an eco-trail, horseback riding, extreme via ferrata route, tourist trail "speleo-emotions", mass events in the public central area.

3. "Children's educational tourism": quest on a map with tasks (team photo, geoquest); eco-educational trail with children's attractions; excursion to the apiary, educational caving route.

4. "45+": a visit to the main natural sites (Katun River, Tavdinsky Caves); culinary master classes in a restaurant, drawing courses or photography courses in the Prostor art gallery, acquaintance with medicinal plants and an apiary, relaxation and fishing by the lake, a yoga festival.

Among the pioneer development areas, **the natural and archaeological complex "Denisova Cave"** was studied. It is the oldest cave in Siberia where evidence of ancient human habitation was found. All archaeological eras are represented in Denisova Cave: Neolithic, Paleolithic, Bronze and Iron Ages, Scythian era and Turkic period. The cave gained special, including world fame, after it was discovered by scientists from the Institute of Archeology and Ethnography of the Siberian Branch of the Russian Academy of Sciences under the leadership of Academician A.P. Derevyanko bone remains of a previously unknown species of human fossil that lived there 30–50 thousand years ago (Krause et al., 2010). This ancient human species is distinct from Neanderthals and Homo sapiens and is named after its location as "Denisovan man," or Homo altaiensis. This cave in 2022 added to the Tentative List for nomination to the UNESCO World Heritage List.

For many decades, the cave has been an tourist attraction. Currently, the concept of the natural and archaeological tourist complex "Denisova Cave" is being formed. This work is carried out by the Denisova Cave public foundation, created in 2021. The main task of the Foundation is related to maintaining a balance of interests of archaeologists, government agencies for the protection of cultural monuments and tourists, the number of which has begun to increase in recent years. To discuss scenarios for the development of this area with stakeholders, a Web GIS was created (http://geomixer.asu. ru/api/index.html?10F1770A61CB4D4F95E4BA1016DD3446). The results of the discussion showed that currently the cave without additional attractions is of interest only for a short excursion. Recommendations were made that trails and infrastructure should be developed in the surrounding areas to limit the flow of tourists into the cave. It has been revealed that currently the target type of tourists is the image of "Indiana Jones".

We have developed a concept for the development of the tourist destination Denisova Cave as a place for recreation and life for all times. There are a protected natural area with great biodiversity near the cave, that make it possible to create here opportunities for an eco-resort and comfortable recreation in the natural environment (recreation - healing - ecology - knowledge). The new concept will change the target tourists and create new scenarios for staying in the area. A significant number of tourists in Altai are characterized as visitors who are tired of the bustle of the city. They want to restore health in the natural environment and learn the history of human development. In addition to this, there are two more types of tourists. The first includes scientific tourists who go to the International Scientific Tourist Complex at Denisova Cave. The second type is represented by active tourists, who are predominantly transit tourists. They are not interested in the cave itself, but they will follow the trail above the cave or to the Shinok waterfalls. To implement the new spatial scenarios, the following functional zones have been proposed: visitor center, administrative and scientific, transport and logistics, guest accommodation, active recreation, natural landscape attractions, protection of natural resources, protection of cultural resources, agricultural activities. The list of spatial scenarios at the level of tourism opportunities is shown in Table. 4

Tourists visiting the Denisova Cave destination are primarily attracted by the natural component; excursions to the cave are of considerable interest. In 2023, with participation A.N. Dunets, a project for a new staircase to the cave was implemented. This contributed to improving the amenity of the area. In addition, program scenarios for the destination may

include the visitation the protected natural area “Cascade of Waterfalls on the Shinok River”, where the largest waterfall in the Altai Territory with a height of 72 m is located. Conducted field research and observations of tourist behavior made it possible to identify several new tourist routes, which also included in our Web-GIS project.

Table 4. Spatial scenarios for pioneer development areas. Sample area:
natural and archaeological complex “Denisova Cave” (* - numbering is explained in the text above)

Spatial scenario type*	Functional zones within the tourist opportunity	Results of the inventory of tourism opportunities / Recommendations for the development of spatial scenarios based on a survey of stakeholders
IV.	Zone of hospitality and accommodation facilities, shopping zone, transport infrastructure zone	Currently there is a small village of Tog-Altai with an apiary and several houses of villagers for tourists. / **Recommendations:** It is necessary to improve the village, create guest houses, sell local products and form a local souvenir market.
V.	Shopping zone, transport infrastructure zone, entertainment zone, sports zone	Currently there is no facilities. / **Recommendations:** It is necessary to create a public recreational area in a wide part of the Anui River valley, 3 km from Denisova Cave (the place is called the “Field of Miracles”), and to create a paleopark.
VI.	Zone of hospitality and accommodation facilities, shopping zone, entertainment zone, medical zone, transport infrastructure zone.	Campgrounds with cabins have a low camping capacity and operate only in the summer season. / **Recommendations:** It is necessary to create investment projects for accomodation facilities on reserved lands.
VII.	Natural attraction zone, cultural zone	There is one trail to the Maham cave grotto. / **Recommendations:** It is necessary to create walking trails near the Denisova Cave and along the valley of the Anuy River to the village of Tog-Altai.
IX.	Zone of hospitality and accommodation facilities, natural attraction zone	Comfortable outdoor recreation created for scientists, near to the scientific station of the Institute of Archeology and Ethnography SB RAS. / **Recommendations:** It is necessary to create glamping sites or remote campsites on the right side of the Anui River valley.
X.	Natural attraction zone	There are hiking trails to waterfalls in the canyon of the Shinok River. / **Recommendations:** It is necessary to improve existing trails in the Cascade of Waterfalls on the Shinok River reserve, and to create trails on Sosnovaya Mountain, at the foot of which is the entrance to Denisova Cave. Placement of interpretation stands.
XI.	Natural attraction zone	Currently there are only a few routes. / **Recommendations:** It is necessary to create and improve a network of trails to the Bashelaksky reserve, around Sosnovaya Mountain, and to place interpretive signs.

DISCUSSION

Comparison of the proposed approach to creating tourist area development scenarios with existing experience (Daconto and Sherpa, 2010; Page et al., 2010; Mai and Smith, 2018; Wyatt et al., 2021) allows us to draw a number of conclusions. Firstly, current scenario development cases are often based on the resource capabilities of the areas (Mai and Smith, 2018; Wyatt et al., 2021). This is definitely necessary. But it is also important to rely on the needs and expectations of different categories of visitors. Secondly, when developing scenarios, the destination is considered as a system, incl. dynamic socio-economic system. Thirdly, a prerequisite for developing scenarios is to involve and take into account the views of stakeholders. Fourthly, in most cases, when developing scenarios, one of the main tasks is to identify uncertainties and development drivers. Our approach focuses on maintaining the destination's competitiveness into the future by providing the widest possible on-site opportunities for different types of visitors. In the future, they are adapted to the changing needs of visitors based on monitoring data. The limitation of the use of the scenario approach to the area design (is the rapid obsolescence of condition prototypes (Krasheninnikov, 2017). This, in our opinion, can be avoided by monitoring and timely changes in program or partially spatial scenarios at the level of functional zones.

CONCLUSION

Our proposed approach to creating tourist area development scenarios includes 3 types of interrelated and complementary scenarios: spatial scenarios at the level of tourist opportunities, spatial scenarios at the level of functional zones within tourist opportunities and program scenarios. The scenarios at the level of tourist opportunities are based on different levels of area development, including the kind of access to the area, the type and number of accommodation facilities, and the level of contacts with other visitors.

The concept of the tourism opportunity spectrum, on which the creation of spatial scenarios is based, as well as the collected data on the current use of tourist areas, made it possible to identify 11 types of tourism opportunities for the foothill and low-mountain areas of Altai. Using the tourism opportunity spectrum also allows us to identify which opportunities are underdeveloped in a particular destinations, as well as define which opportunities are most important for the types of tourist areas, taking into account their specialization. In this work, we studied 4 types of tourist territories, identified the features of their tourist spectrum and formulated recommendations for their future development.

Lake Aya, which belongs to the long-term development areas with a predominance of short-term tourism, is characterized by overdevelopment of opportunities II, V, VI and a lack of the extreme least urbanized opportunities of the spectrum. It is necessary to develop a motorized zone. For long-term resort development areas, using the example of the Belokurikha resort, a pedestrian zone with health routes is very important, which is quite developed here. Distinctive tourist opportunities of this type of areas are the urban area and the sanatorium zone. At the same time, there is a shortage of natural areas with opportunities for motorized movement. The special economic zone of the tourist and recreational type “Biryuzovaya Katun”,

which belongs to the new development areas based on development tools is distinguished by a fairly balanced set of tourist opportunities. A special feature of Biryuzovaya Katun is the development of a public recreation area near water bodies. On the territory of the Denisova Cave natural-archaeological complex, which belongs to the pioneer development areas, tourist opportunities with a high level of amenity are currently underdeveloped. It is necessary to reserve territories for the coordinated development of various tourism opportunities in the future. Thus, the proposed method of scenario planning is a tool for strategic planning of the tourist areas development. It makes it possible to ensure the relevance of destinations in the future through the widest possible provision of opportunities on the area for different categories of visitors.

Limitations and Further Studies

A limitation of the study is the non-probability type of sample. In addition, there are still a number of issues that require further research. Among them are the automation of data updating processes in Web-GIS and the automation of some stages of the scenario development process. For this purpose, the results published in (Chow et al., 2023; Yoon and Choi, 2023) may be useful.

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