Geoheritage perspectives through creation of Geoparks in Kazakhstan

A case study

Dissertation submitted for the academic degree of

Dr. rer. nat.

to the Natural Sciences Examination Office of

Justus Liebig University Giessen.

FB07 - Mathematics and Computer Science, Physics, Geography

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JUSTUS-LIEBIG-
UNIVERSITÄT
GIESSEN

Gießen, 2025

The work was made possible with the support of a scholarship from the

German Academic Exchange Service (DAAD)

Dedication:

I would like to express my special thanks to Prof. Dr. Dr. h.c. Andreas Dittmann and Prof. Dr. Dr. Johann-Bernhard Haversath

I would also like to thank Dr. Sascha Valentin and my family, without whom this dissertation would not have been possible.

Table of contents

List of abbreviations

CIS	Commonwealth of Independent States
EGN	European Geopark Network
GDP	Gross domestic product
GGN	Global Geoparks Network
GHSL	Global Human Settlement Layer
GIZ	Gesellschaft für internationale Zusammenarbeit
IFAS	International Fund for Saving the Aral Sea in the Republic of Kazakhstan
IGGP	International Geoscience and Geoparks Programme
IUCN	International Union of the Conservation of Nature
KZT	Kazakh Tenge
MDG	Millennium Development Goals
SPNA	Specially protected natural areas
SSR	Soviet Socialist Republics
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USD	US-Dollar
USSR	Union of Soviet Socialist Republics
VKO	Vostochno-Kazakhstanskaya oblast' (East Kazakhstan Region)

List of figures

List of tables

Abstract

This research project examines the possibilities for creating Geoparks in Kazakhstan. In recent years, not only the rich cultural history but also the geological heritage of the country between the Altai Mountains and the Caspian Sea has attracted the interest of international researchers. The sheer number of geologically significant sites makes selecting an area for a Geopark a challenging undertaking. This makes it all the more important to conduct thorough research in advance of creating Geoparks in Kazakhstan in order to identify the best possible location. Another important aspect is the fact that, in a corner of the world that has always been fraught with tension, the Geopark movement could prove to be a useful tool for cross-border cooperation. This work attempts to link the many aspects together and present a potential overall picture of the future of Geoparks in Kazakhstan. The basic research carried out in the course of this work provides useful input for further Geopark research in Kazakhstan.

Zusammenfassung

Diese Forschungsarbeit befasst sich mit den Möglichkeiten der Erstellung von Geoparks in Kasachstan. Nicht nur die reiche Kulturhistorie sondern auch das geologische Erbe des Landes zwischen Altai und Kaspischen Meer hat in den letzten Jahren das Interesse der internationalen Forschung auf den Plan gerufen. Die bloße Menge an geologisch bedeutsamen Orten, macht die Auswahl eines Gebietes für einen Geopark zu einem herausfordernden Unterfangen. Umso wichtiger ist es, dass man im Vorfeld der Erstellung von Geoparks in Kasachstan fundierte Forschung betreibt um den bestmöglichen Standort zu ermitteln. Ein weiterer wichtiger Aspekt ist die Tatsache, dass sich in einer seit je her spannungsgeladenen Ecke der Welt, die Geoparkbewegung als nützliches Mittel zur grenzüberschreitenden Zusammenarbeit erweisen könnte. Diese Arbeit versucht die vielen Aspekte miteinander zu verknüpfen und ein potenzielles Gesamtbild der Geoparkzukunft Kasachstans aufzuzeigen. Die Grundlagenforschung die im Zuge dessen betrieben wurde, stellt sich als nützlicher Input für den weiteren Verlauf der Geoparkforschungen in Kasachstan dar.

Preface

Among the many aspects that need to be considered in the geosciences, geography has the significant advantage that it can draw on all sub-disciplines to improve what it takes from them. This is exactly the case with Geoparks. These were originally a playground for geologists with a passion for rocks, and they would certainly still be so today if it hadn't been for a few enthusiastic geographers who took up the cause. Today, of course, we know better. Geoparks are not and never have been just about rocks, but about so much more. Geology certainly forms the foundation, but the multifaceted content is filled by history, cultural heritage, flora and fauna, and, last but not least, by the people who live in and with the Geoparks. Such a delicate mixture is rarely found in the field of geosciences, and the beauty of it is that essentially everyone is involved in their own way. I very much hope that this work will help to open up the wealth of opportunities offered by Geoparks to Kazakhstan. It would be a great shame if millions of years of geological history and thousands of years of cultural history were simply left untapped and a meaningful concept such as Geoparks were unable to establish itself.

1. Introduction

In conditions of increasing anthropogenic impact, the degradation of natural systems occurs, therefore, the issues of studying and preserving the natural heritage of the Earth are becoming more and more urgent. The natural heritage can be considered as the information potential imprinted in the phenomena and objects of nature, necessary for humanity for its development. Thus, natural heritage sites are the information base of Earth sciences, but they are often under threat of complete or partial loss, and this sometimes even applies to world-class objects of significance, the disappearance of which can lead to significant losses for science and society.

This threat is mainly due to the lack or insufficient level of protection of natural heritage. Thus, many scientifically significant objects, such as, for example, Geoparks in the Republic of Kazakhstan, with various organic remains of good preservation do not have a protected status at all and are not taken into account at the state level. As for protected objects, most of them have the status of natural monuments of regional or even local significance, and, according to

the author, the official level of protection of many of them is underestimated. Thus, the identification of natural heritage objects based on objective criteria, the assessment of their significance and the revision of the official protected status with subsequent amendments to the register of specially protected natural territories, the development of recommendations for their conservation and use are an urgent task today. Over the past century, the anthropogenic load on the natural environment has increased significantly. In this regard, the preservation of natural heritage has become an extremely acute problem.

The highest achievement of ecological thinking was the realization of the need for comprehensive conservation of not only directly living organisms, but also unique objects of "inanimate" nature, which perform several functions at once: act as biotopes for the corresponding biocenoses, represent cultural, aesthetic and scientific value. Therefore, similarly to classical nature reserves and national parks, since the 1990s, in many countries, specially protected natural areas (SPNA) have been organized to preserve unique geological objects – geological parks (Geoparks). The name "European Geopark" was approved as an official term in June 2003 and assigned to the Geoparks of the European network, operating since 2001 in partnership with UNESCO (EGN 2013). In 2004, a Worldwide network of Geoparks was created under the auspices of UNESCO, which today includes 91 sites in 27 countries (UNESCO 2025d).

Kazakhstan, as a party to the Convention on the Conservation of Biological Diversity (Resolution of the Cabinet of Ministers of the Republic of Kazakhstan No. 918 dated August 19, 1994), has its obligations to preserve biological diversity. Legislation in the field of protected areas is based on the Constitution of the Republic of Kazakhstan, the Law of the Republic of Kazakhstan "On Specially Protected Natural Territories", the Concept of development and placement of specially protected Natural Territories until 2030, approved by the Decree of the Government of the Republic of Kazakhstan dated November 10, 2000 N 1692 (KARIBZHANOVA 2005: 11).
Of great importance for the development of the nature reserve business is the holding of parliamentary hearings in March 2004 about "Problems and prospects for the development of the State Nature Reserve Fund", at which the problems of the development of the territorial nature protection system in Kazakhstan were discussed and ways to solve them were determined (MAKULBEKOV 2006).

In 1997, the Development Strategy of the Republic of Kazakhstan until 2030 was proclaimed, which declared that Kazakhstan should become a clean and green country with fresh air and clear water by 2030. One of the tools to achieve these goals is the creation of a system of protected areas. The main task of forming an optimal system of protected areas is to ensure their continuity, when protected areas (reserves and national parks) are interconnected by territories with less strict protection (reserves, protected areas), as well as with elements of the ecological network: ecological corridors, forests, water protection zones and strips and other protected natural territories (UTEGENOVA 2011: 133).

At the present stage, the placement of protected areas on the territory of the Republic of Kazakhstan is difficult to qualify as an "ecological network" in its global sense. At the same time, regional intra-state ecological networks are being formed in the Ili Alatau, the Zhongar Alatau and the Altai region. Elements of ecological networks are also being formed at the interstate level these are the Western Tien Shan and Altai-Sayan ecological regions. The work started and the approaches being developed should be continued for all natural complexes (forest, steppe, forest-steppe, deserts, semi-deserts, coastal and aquatic ecosystems), for which the organization of an ecological network is as relevant as for mountain areas (REPUBLIC OF KAZAKHSTAN 2006; SALEMGAREYEV 2024).

1.1. Current state of research

The current state of research on Geoparks in Kazakhstan has been summarised using a timeline (Figure 1: Timeline of current research on Geoparks in Kazakhstan (Source: Own Design)). The description of the events can be taken from the following text. In the early 1990s, Iliya Fishman, who is inextricably linked to Kazakh Geopark research, appeared on the scene. He initiated the discussion about Geoparks in Kazakhstan based on the European model and began working with his team to create a database of Kazakh geological heritage sites, which proved useful as a basis for subsequent Geopark research. In 2005, the Kazakh government officially confirmed a list of valuable geological objects, which was seen by scientists as a concrete step towards implementing Geopark ideas in Kazakhstan (SADYKOVA 2014: B). In 2012, a conference was held

Figure 1: Timeline of current research on Geoparks in Kazakhstan (Source: Own Design)

in Astana at the Kazakh Geographical Society with the title 'Potential of the Earth and People' to examine the topic of Geoparks in Kazakhstan in greater detail. It was stated, that around 40 Geoparks could be opened within Kazakhstan. Furthermore, in 2023, Fishman gave a presentation at the EGU General Assembly on the topic of 'Geoparks as a way to raise geoconservation in Kazakhstan' (FISHMAN ET AL. 2013: 1, TENGRINE NEWS 2013). In the run-up to EXPO 2017 in Astana, Kazakh geologists became increasingly vocal in calling for a closer look at the topic of Geoparks in Kazakhstan. On the one hand, Geoparks would offer the opportunity to tell the story of Kazakhstan through living objects. On the other hand, many see Geoparks as a tourism factor that should not be underestimated and that could have a direct impact on Kazakhstan's GDP (SADYKOVA 2014: B). In 2018, the Kazakhstan National Committee on Geoparks began to consider potential candidates for UNESCO Global Geoparks (KAZAKHSTAN NATIONAL COMMITTEE ON GEOPARKS 2018). In 2022, the conference 'Millions of Years before the Silk Road' took place in Almaty. Main topics include Geoparks not only in Kazakhstan but the whole Region. UNESCO Geoparks are valuable toools (DITTMANN 2017: 9).

The main organisers were UNESCO and the Kazakhstan National Committee on Geoparks (UNESCO SECTION ON EARTH SCIENCES & GEO-HAZARDS RISK REDUCTION 2022; UNESCO KAZAKHSTAN 2022, UNESCO SECTION ON EARTH SCIENCES & GEO-HAZARDS RISK REDUCTION 2022: 9). In 2024 an official Geopark was announced. You can find details about the announcement at (NIGMATOVA ET AL. 2024: 4): 'The territory of the potential Geopark covers Zheskazgan city, the village Karsakpai in the southwest and the Zhezdy river basin in the east, from the Ulytau Mountains to the Karatorgai River valley in the north. The total planned area is about 3000 km^2. The initiative to create a Geopark began in 2018. However, in 2024, by decision of the public council, this territory was awarded the status of a Geopark'. Unfortunately, apart from the reference in this article, there is no further evidence of the existence, planning or existence of the Geopark mentioned in the article. On 15 August 2024, Central Asia's first Geopark was opened in the Aral region of Kazakhstan. The Geopark is not recognised as a UNESCO Global Geopark and is not a member of any other comparable network (GEOPARK ARAL 2024). Official representatives from Kazakhstan took part in the International Day of Geodiversity at UNESCO in Paris in October 2024. The Kazakh ambassador praised the advantages of a national Kazakh Geoparks system, saying that it could be 'gradually integrated into the UNESCO system' (GOVERNMENT OF KAZAKHSTAN 2024). A major

problem is that, as of today (June 2025), all websites of the Kazakh UNESCO Commission, the Kazakhstan National Committee on Geoparks, and the official UNESCO pages on Kazakhstan's membership status (https://www.unesco.org/en/countries/kz) are no longer functioning. It almost seems as if there is currently no information available on the status of UNESCO activities in Kazakhstan.

1.2. Study Hypotheses and Questions

The following section briefly addresses the research questions to be answered in this paper. There are three main questions, which are further divided into different aspects and procedures (Figure 2).

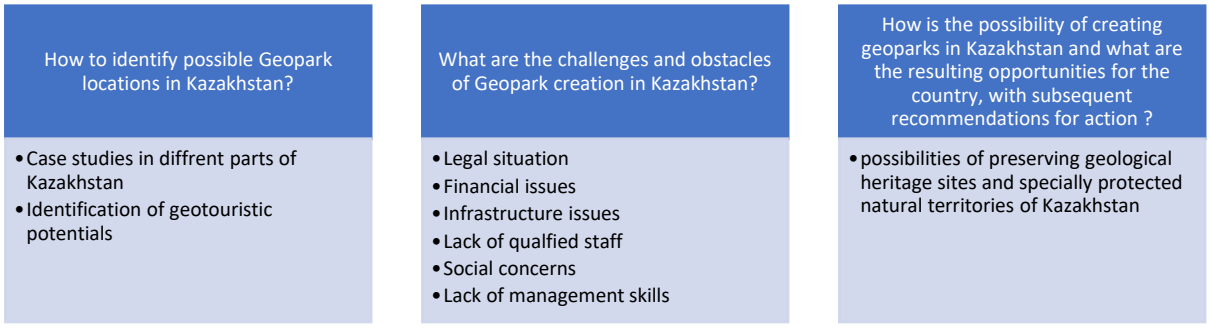

Figure 2: Study questions (Source: Own design)

The first question in the entire set of questions is 'How to identify possible Geopark locations in Kazakhstan?'. The core of this question points to something that seems obvious, but in detail is not necessarily easy to answer. One of the biggest problems in Kazakhstan with regard to Geoparks is actually finding locations. Normally, almost the entire country would have to be designated as one huge geopark, but since this is not possible, the only option is to find out where the best locations for geoparks are.

The following practices were used for this purpose:

- Case studies in different parts of Kazakhstan
- Identification of geotouristic potential

First, it was necessary to use case studies to assess the suitability of various areas in Kazakhstan. There are many regions worth visiting in Kazakhstan, some of which are internationally renowned sites. In the second step, the focus was mainly on geotourism potential. This made it possible to gain a general overview of the situation and to pre-select candidates at this stage. You can follow this process in Chapter 7.

The second question from the complex 'What are the challenges and obstacles of Geopark creation in Kazakhstan?' dealt with questions of feasibility and challenges in the creation of geoparks in Kazakhstan. This is not only about specific difficulties in creating geoparks, but also about (unfortunately) general administrative obstacles that make such projects difficult in Kazakhstan.

- Legal situation
- Financial issues
- Infrastructure issues
- Lack of qualified staff
- Social concerns
- Lack of management skills

One of the biggest challenges is the legal situation in Kazakhstan. An attempt was made to gain insights into the legal structure with regard to geoparks.
Furthermore, Kazakhstan is no different from the rest of the world in that nothing works without financial resources, not even geoparks.

Other challenges described in this paper include infrastructural problems that can seriously disrupt a geopark (or its planning) in the early stages.

It is also important to determine the situation with regard to qualified personnel. An attempt is made to evaluate the current situation in both the academic and practical fields.

Social issues always play a role in new and especially large projects and are also a recurring source of social friction. This is discussed in more detail in the course of the paper. Another

issue that is closely related to personnel problems is management issues. This is particularly relevant when geoparks act on their own behalf and start operating as (partially) self-governing entities.

The third and final question in the complex ‘How is the possibility of creating geoparks in Kazakhstan and what are the resulting opportunities for the country, with subsequent recommendations for action?’

The question itself seems self-explanatory, but the core of this question is as important as it is banal. ‘Is there a realistic possibility of establishing geoparks in Kazakhstan?’ And if so, how can Kazakhstan benefit from them? These questions are addressed and evaluated in more detail in chapters 6 and 7, among others. Corresponding recommendations for action are also discussed at the end of the paper.

A separate point that also belongs to the overarching question is the
‘Possibilities of preserving geological heritage sites and specially protected natural territories of Kazakhstan’ . The main focus here is on assessing whether and to what extent geoparks can contribute to the preservation of Kazakhstan's natural and geological heritage.

The above questions will be re-evaluated at the end of the work and assessed to determine whether they have been fulfilled.

1.3. Description of the study area

The Republic of Kazakhstan is a country in Central Asia. It is politically divided into 17 regions (Oblasts) and four cities as well as in 170 smaller districts (raions) (see Figure 3). The current president is Kassym-Jomart Kemeluly Tokayev, who is not affiliated with any political party (MUNZINGER-ARCHIV GMBH 2024: 7).

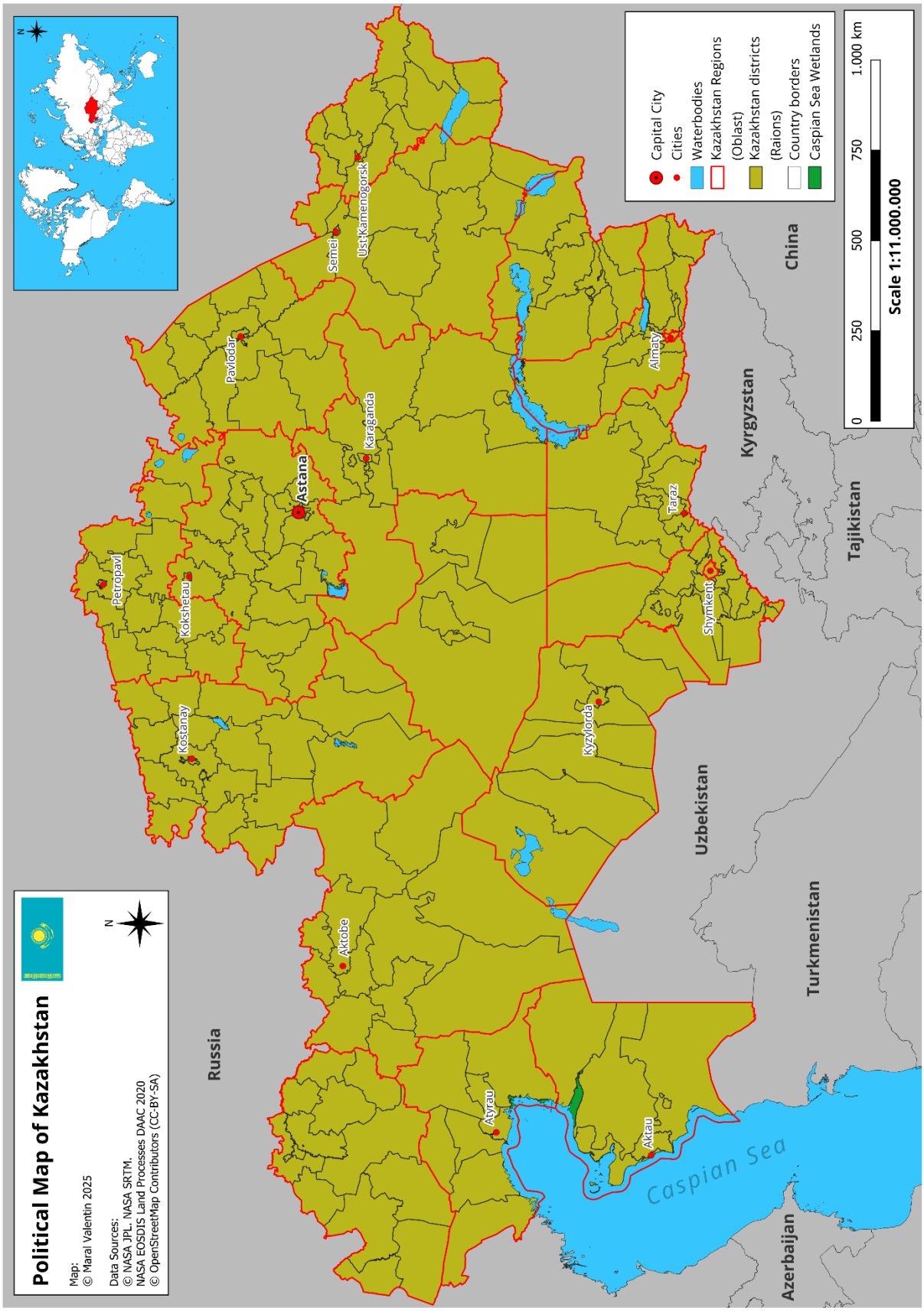

Figure 3: Political map of Kazakhstan (Source: Own Design)

Geographically, it lies between the 40th and 50th parallels. The main landmass is located in Eurasia and Central Asia. Approximately 5% of the land area is considered part of Eastern Europe. The total area is approximately 2,724,956 km^2 (ANDERSON ET AL. 2018: xx, GORELOVA u. MESYATSEVA 1978: 101). The population in the first quarter of 2025 was approximately 20,333,530 (QAZSTAT 2025b: 3). The capital is Astana (population 1,354,435), the largest city in the country, while the former capital is Almaty (population 2,161,695). The largest ethnic group in the country is the Kazakhs, who make up 71.3% of the population, followed by ethnic Russians with 14.6%. Uzbeks and Ukrainians form a national minority in Kazakhstan, accounting for 3.3% and 1.18% of the population respectively (QAZSTAT 2025a: 1).

Digression: The Kazakh flag

The flag of Kazakhstan is remarkable in that it does not follow international vexillological conventions. The flag (see Figure 4) is described by the CIA World Factbook as follows: "*The flag shows a golden sun with 32 rays above a soaring golden steppe eagle, both centered on a sky blue background; the hoist side displays a national ornamental pattern "koshkar-muiz" (the horns of the ram) in gold; the blue color is of religious significance to the Turkic peoples of the country, and so symbolizes cultural and ethnic unity; it also represents the endless sky as well as water; the sun, a source of life and energy, exemplifies wealth and plenitude; the sun's rays are shaped like grain, which is the basis of abundance and prosperity; the eagle has appeared on the flags of Kazakh tribes for centuries and represents freedom, power, and the flight to the future*" (CIA 2025).

Figure 4: Flag of Kazakhstan (Source: CIA 2025)

Per capita GDP was around 12,919 US dollars in 2023 (WORLD BANK 2025). The Human Development Index stands at 67, which means that Kazakhstan is classified as ‘very highly developed in human terms (UNDP 2024: 275). Kazakhstan is a member of the following organisations: UN and UN specialised agencies, WTO, CIS, OSCE, EBRD, EAPC, PfP (NATO), CSTO, EAEU, ADB, AIIB, SCO, OIC, IsDB, OTS, ECO (MUNZINGER-ARCHIV GMBH 2023: 2–5).

Geographical features

Kazakhstan is the ninth largest country in the world and also the largest landlocked country in the world. Its only access to a large body of water is via the Caspian Sea, after the Aral Sea almost completely evaporated (GEBHARDT ET AL. 2011: 1271). Kazakhstan stretches from the Caspian Sea in the west to the Altai Mountains in the east, covering approximately 3,000 km from east to west (See Figure 5). The north-south extension is approximately 1,500 km. Half of the country is covered by deserts or semi-deserts. About one third of the land area consists of steppes. The forest cover is just around 1.2%. The west is dominated by the Caspian Depression and the Mugodzhar Mountains, as well as the Turgay Plateau, which extends to the (former) Aral Sea (GORELOVA u. MESYATSEVA 1978: 101). The north of the country is characterised by the West Siberian Plain, while the Altai Mountains and the Tarbagatai Mountains are located in the northeast. In the far east are the Dzungarian Alatau and Kazakhstan's highest mountain range, the Tian Shan. The country's highest mountain, Khan Tengri, is also located here, at an altitude of 7,010 metres. The former capital, Almaty, is located adjacent to the Ile Alatau mountain range in the south-east border region of the Kazakhstan. The Kazakh Uplands are located in the centre of the country, where the capital Astana is also located. The Turan Depression stretches far to the south. (MUNZINGER-ARCHIV GMBH 2023: 3–4).

Climate

Kazakhstan has various climates, but is dominated by the Köppen-Geiger climate classification Dfb (MCCLATCHEY 2012: 123). The Kazakh climate is very continental. This means cold winters with little snow and hot summers with low humidity. A special feature are the regular

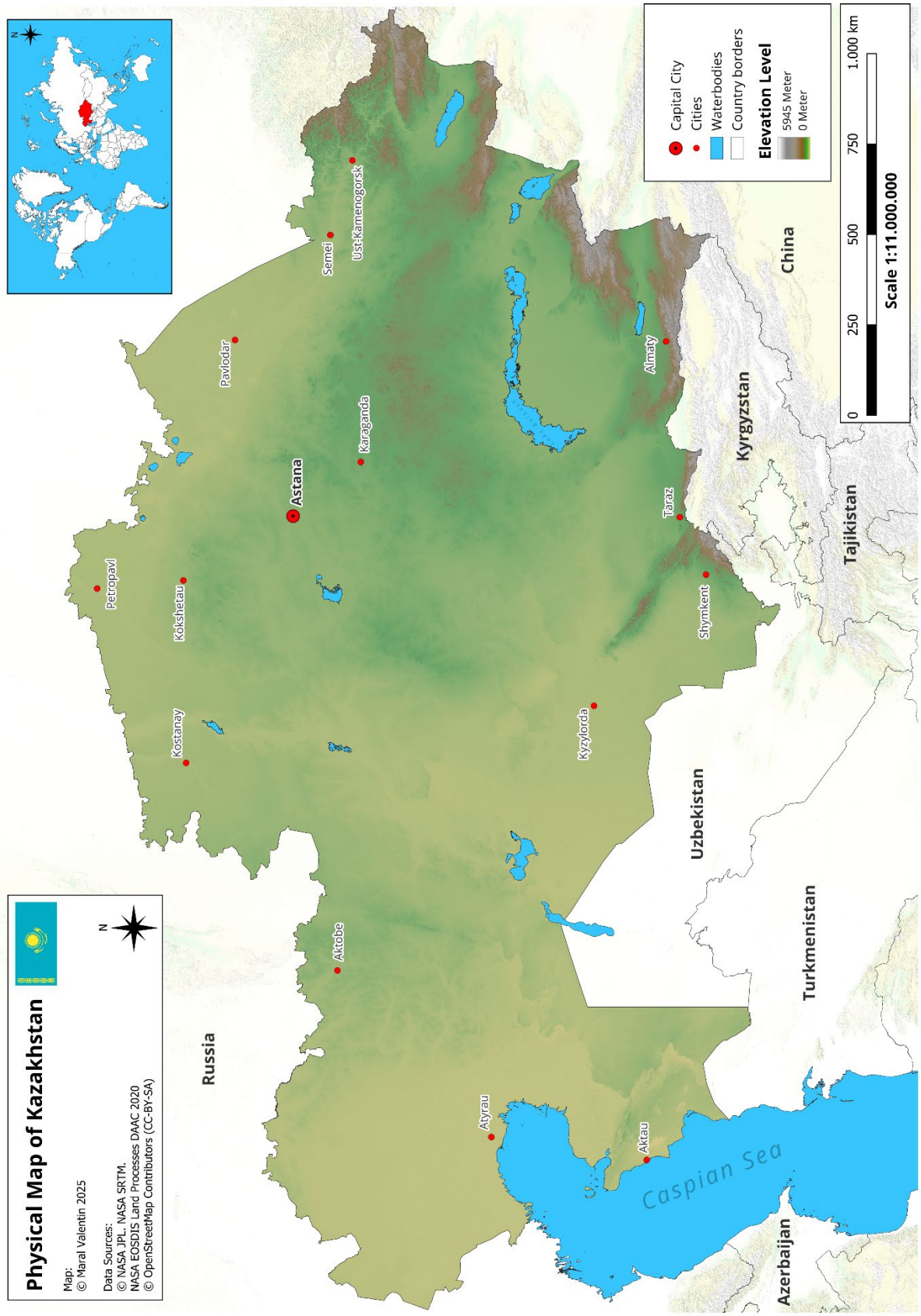

Figure 5: Physical map of Kazakhstan (Source: Own design)

sandstorms. The average annual temperature in Almaty is around 10° Celsius, while in Astana it is 1° Celsius. Annual precipitation ranges from 327 mm to 570 mm. In the mountains, it can reach up to 1600 mm, while the dry south receives approx. 100 mm of precipitation. (MUNZINGER-ARCHIV GMBH 2023: 3–4; KAZHYDROMET 2025).

Environmental issues

One of the greatest ecological disasters of the 20th century was the almost complete drying up of the Aral Sea. Between 1950 and 2009, its surface area shrank from 65,607 km^2 to 8,730 km^2. This was mainly due to the diversion of the Amu Darya and Syr Darya rivers. Most of the former lake is now a toxic, barren desert dominated by pesticide residues and remnants of weapons research. The dust stirred up contributes to major sandstorms in the region. Fishing came to a virtual standstill and recovered slightly after the construction of a dam in the northern Kazakh part, as the water level rose slightly there (GEBHARDT ET AL. 2011: 1271). Other problems include the disposal of radioactive waste from the Soviet era and pollution from the Baikonur Cosmodrome. The extraction of fossil fuels in the Caspian Sea also contributes significantly to the pollution of the ecosystem. There are very low standards, if any, for the disposal of industrial waste from industrial plants. Wastewater is often discharged into river systems without being filtered. Air pollution is a major problem in cities, regularly leading to smog alerts during the hot summer months. Air pollution is suspected of causing or exacerbating respiratory diseases (MÜLLER 2000: 109–113, MUNZINGER-ARCHIV GMBH 2023: 4).

2. Research Methodology

The most difficult part of starting a research project, including a dissertation, is choosing the right methodology. It is both a blessing and a curse that geography as a science offers a seemingly endless array of methods. It is a curse because you first have to be clear about which methods you want to use, but it is a blessing because you have access to a colourful bouquet of tangible tools with which you can methodically tackle almost any scientific situation

imaginable. In the present case, the author asks herself how best to approach tourism geography and, subsequently, geotourism from a methodological perspective.

The methodology of the dissertation is based on a mixed-methods approach. It combines qualitative methods and spatial analyses with literature research to develop a comprehensive framework for potential Geopark areas in Kazakhstan. The first research phase included a face-to-face survey method that assessed the public's understanding of Geoparks. Both young and older people as well as participants from urban and rural areas took part. The thematic analysis of the survey results revealed important patterns regarding the Kazakh population's perception of geographical heritage, their values in relation to nature conservation measures, and their assessment of the sustainability of tourism in their country. In addition, interviews were conducted with potential stakeholders.

The field research was conducted over three field research periods from 2022 to 2024. The current dissertation presents a comprehensive interdisciplinary research approach using various methods to provide a methodology catalogue that forms a solid basis for investigating key factors for the establishment of Geoparks in Kazakhstan. In the end, a mix of methods was established, which you can see in Figure 6.

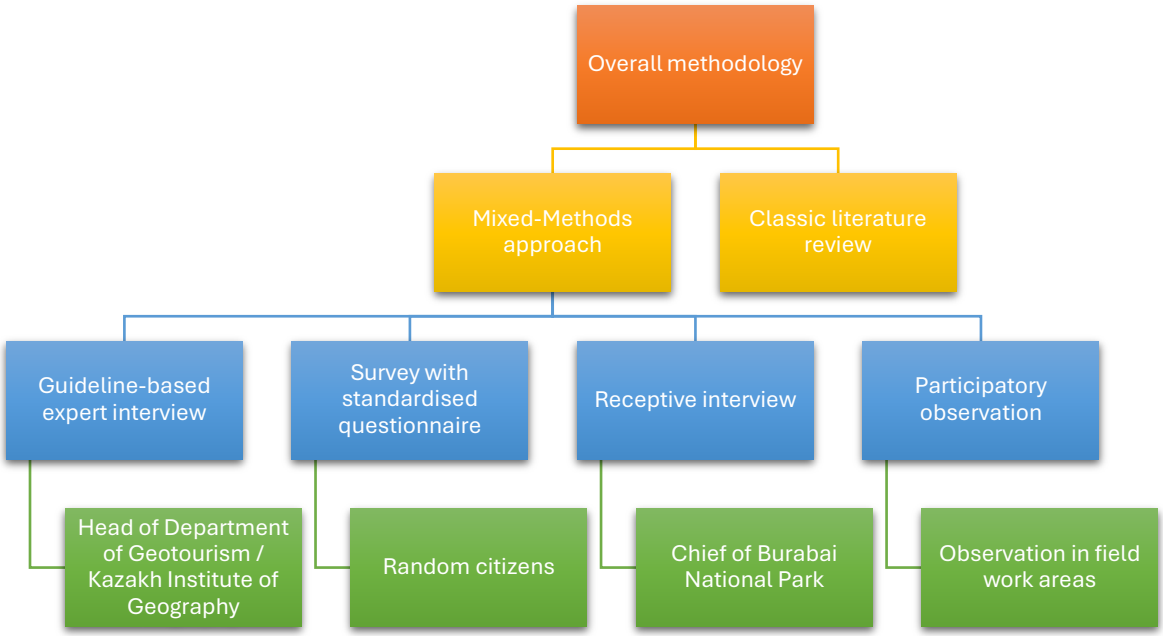

Figure 6: Overview of the used methods in this dissertation (Source: Own design)

2.1. Mixed-Methods-Approach

As a central approach, the author has taken a rather novel path, independent of specific methods. The concept of 'mixed methods' refers to the integration of qualitative and quantitative data within the same research project. (KUCKARTZ 2014: 33). The application of this scheme simplifies data retrieval and the associated data yield. In the present case, the mixed methods approach is advantageous because its inherent multi-perspectivity covers many views 'at once' (KUCKARTZ 2014: 34). A comparison of traditional qualitative and quantitative approaches with the mixed-methods approach can be found in Table 1. It can be seen that both the qualitative and quantitative approaches exist within fairly 'rigid' guidelines. The qualitative approach combines induction with subjectivity, and inferences are generally context-dependent. In the quantitative case, a deductive-objectivist approach is taken. Inferences are based on generalisation. In the mixed-methods approach, abduction plays a major role, with intersubjectivity coming into play as a connecting element. This is important insofar as one starts from the 'one world' approach, in which all individuals have a unique view of things and interpret them in a unique way. In a pragmatic approach, there is no problem at all in reconciling the view that there is one (and not many) worlds with the fact that all individuals have their own unique interpretation of this world. Intersubjectivity is therefore a core element of all social life (KUCKARTZ 2014: 39–40). The inference here is characterised by transferability. In an inference, conclusions are drawn from a sample about the characteristics of the population from which the sample was taken (SCHNAPP u. BOCK 2020: 221).

	Qualitative approach	Quantitative approach	Mixed-Methods approach
Connection between data and theory	Induction	Deduction	Abduction
Relationship to the research process	Subjectivity	Objectivity	Intersubjectivity
Inferential conclusions	Context-specific	Generalisation	Transferability

Table 1: Comparison scheme on Mixed-Methods with traditional approaches (Source: Own design according to KUCKARTZ 2014: 39)

In the past, there have been repeated disputes between qualitative and quantitative methods. The connection between data and theory is established through different approaches, in the

quantitative case through deduction. Here, conclusions are drawn from general circumstances to a specific case. Example: Every plant needs carbon dioxide to live. A tree is a plant → A tree needs carbon dioxide. In the qualitative case, an observed case becomes a rule through generalisation. Example: A tree is a plant. Plants need carbon dioxide for photosynthesis → All plants need carbon dioxide → All plants on Earth need carbon dioxide. Abduction, on the other hand, takes a different approach, drawing conclusions based on existing knowledge, known as everyday knowledge. Example: I get into the car and turn the ignition key, but nothing happens. From the knowledge that the engine does not start, I can conclude that the engine is defective. Of course, the ignition mechanism could also be defective or the starter battery could be flat. In this way, an explanatory hypothesis is constructed without a generally valid rule (deductive), but rather a completely surprising circumstance. The core of the abductive approach is not merely to apply rules, but ideally to find new solutions or options for action through (controversial) assumptions. This is especially important because abduction is the only creative step that occurs in the entire research process. This is achieved through the consistent, step-by-step repetition of abduction, deduction and induction. It is also important that it must be permissible to be 'surprised' by the data obtained, especially if the data does not correspond to what was actually expected. This feat is achieved with the help of abduction, since its core lies precisely in gaining new insights from unforeseen data and thus breaking new ground (KUCKARTZ 2014: 41–42, REICHERTZ 2013: 89–90, KENNEDY u. THORNBERG 2018: 49–64). In fact, this work yielded findings that would certainly not have been possible without the use of the novel mixed-methods approach, especially when the human factor is taken into account. This is particularly important in the context of interviews and surveys, especially on a new, unfamiliar and controversial topic such as Geoparks. In the present case, qualitative methods (inductive) were combined with spatial analyses. This resulted in data sets that could be analysed abductively using the mixed-methods approach.

2.2. Survey using a standardised questionaire

There is probably no method of gathering information in the field of human geography that is as widespread as conducting surveys using standardised questionnaires. The author made extensive use of this classic core element of countless scientific studies in order to obtain valuable data for further processing. At this point, random individuals were surveyed using a

traditional paper questionnaire on which the respondents could write their answers. As the survey was conducted in Kazakhstan, there were few restrictions in terms of data protection, which is highly valued in Germany. Nevertheless, the original questionnaires were destroyed after evaluation to ensure that names and personal data did not fall into the wrong hands.

The survey was conducted in various regions of Kazakhstan, primarily in planned Geopark regions and Astana and Almaty. It was important to the author to conduct the survey with randomly selected individuals in order to cover as broad a spectrum of the population as possible and to include people from every social group. In accordance with the ethical standards established for this study, the participants in the survey remain anonymous. This means that personal data from the survey forms was removed so you find an anonymised version at the end of the thesis. The participants in the interviews have given their consent to publication. The author conducted the survey using a flexible interview structure that allowed her, as a benefit, to deepen the participants' knowledge about Geoparks. It contained questions about Geoparks and related topics, especially people's concerns.

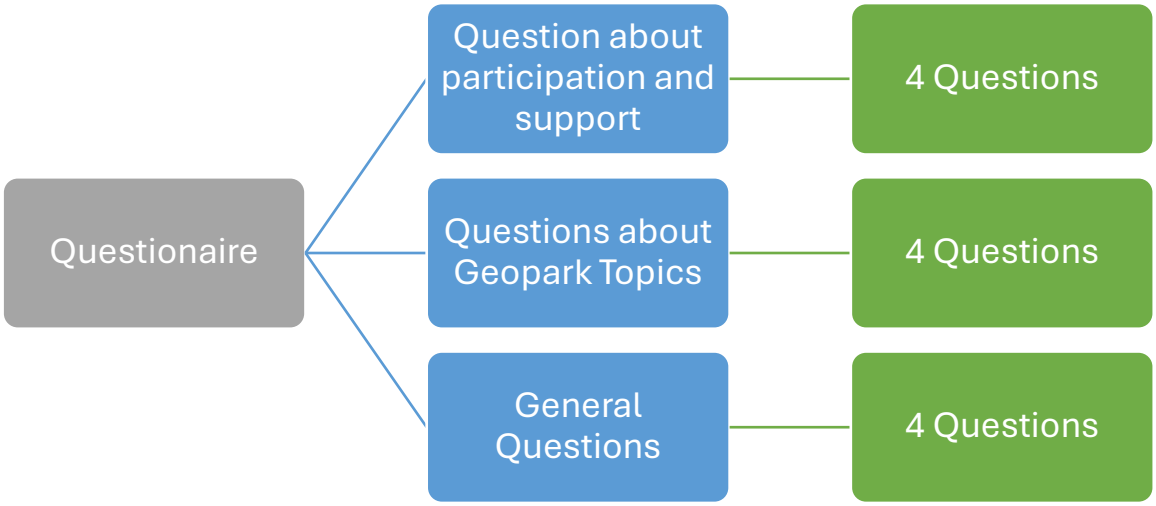

Figure 7: Structure of the first questionnaire (Source: Own design)

The survey was conducted by the author herself using a clipboard and traditional survey methods on the street. The advantage of this approach was that the author is Kazakh herself, so the people she interviewed were less suspicious than they would have been if they had been

approached by a foreigner. The questionnaire itself was written in Russian so as not to exclude parts of the Kazakh population who only speak Russian. It consisted of twelve questions in three categories, see Figure 7.

Overall, the questions can be categorised as follows: 5 questions are hypothetical questions, 4 are socio-statistical questions and 3 are categorical questions. It should be noted that all questions are basic open-ended questions, i.e. without predefined answer options, see also Figure 8 (MATTISSEK ET AL. 2013: 74, MATTISSEK ET AL. 2013: 80, MATTISSEK ET AL. 2013: 77–78, SCHUMANN 2019: 53).

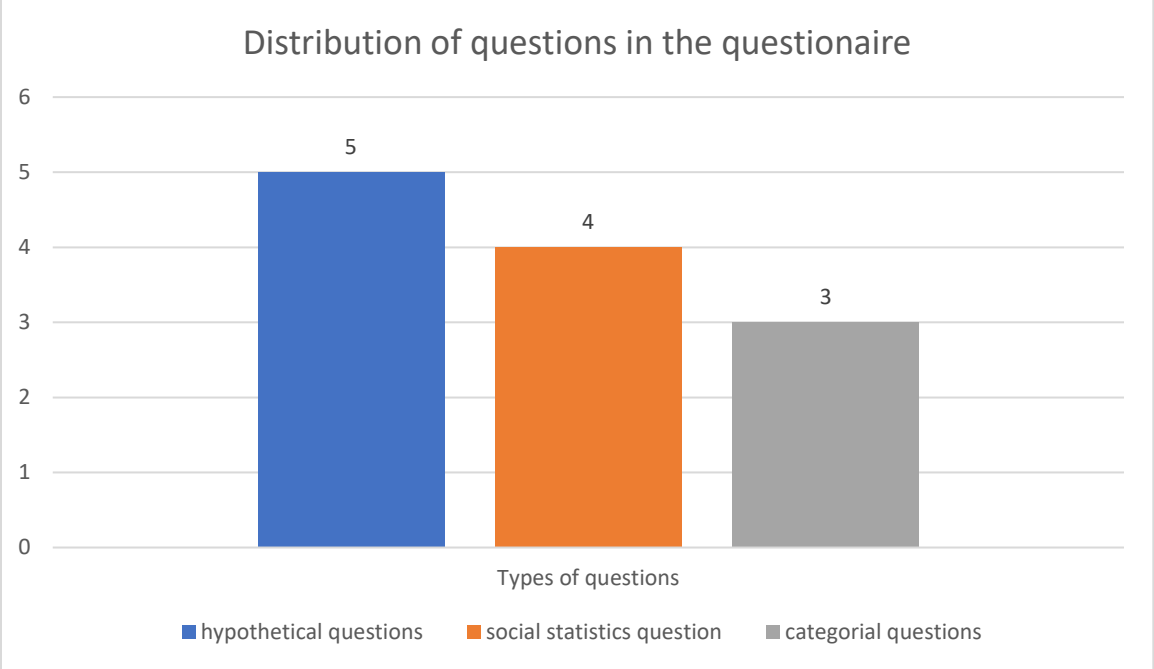

Figure 8: Distribution of questions in the first questionnaire (Source: Own design)

The sample size of the survey was N=70. This value is arrived at assuming that one respondent statistically represents approximately 1,239 inhabitants in the area of the potential Geoparks. This corresponds to the average population of rural settlements in Kazakhstan, which is approximately 1,239 inhabitants per settlement (SATUBALDINA 2023). Taking all five areas for potential Geoparks together (see Page 74), the total population is around 148,680, based on approximately 120 settlements in the Geopark areas. These data are based on our own surveys and calculations in QGIS based on the GHSL provided by the EU (SCHIAVINA ET AL. 2023, PESARESI ET AL. 2024).

The following formula is used to calculate the population n:

$$n \geq \frac{N}{1 + \frac{N - 1 \times \varepsilon^2}{z^2 \times P \times Q}}$$

$$n \geq \frac{119}{1 + \frac{119 \times 0{,}05^2}{1{,}65^2 \times 0{,}5 \times 0{,}5}} = 69{,}71$$

N also stands for the minimum required sample size (MOSSIG 2012: 8). The sample size n was calculated as 70. Accordingly, one respondent from N represents 1,239 inhabitants in the study areas. The margin of error ε is 5%, and the confidence level z is 1.65 (this corresponds to D(z) = 9011, approx. 90% according to (BAHRENBERG ET AL. 2017: 224–225). P corresponds to the actual mean value of the population (estimated) and Q corresponds to 1-P (MOSSIG 2012: 21). Due to time constraints and the relatively small sample size, a pre-test was not conducted. All survey participants were selected at random using a random sampling method (LANGE u. NIPPER 2018: 50, LEEUW ET AL. 2009: 13). The author is aware that the arbitrary selection of subjects is not the most ideal practice, but in this case, it offers the best chance of obtaining any results at all. Especially in rural areas of Kazakhstan, mistrust of surveys of any kind is palpable. This phenomenon also occurs in other former USSR states and certainly has its roots in the political repression of the Soviet era. Even if the fact that the survey is conducted by a person of the same nationality reduces mistrust, it is not certain that a survey will actually take place. Particularly with regard to real data (i.e. data that is reproduced more or less truthfully by the respondents), a little tact is required here in order not to ruin the entire survey. The raw data from the survey can be found anonymised in the appendix to this paper. A Microsoft Excel spreadsheet was used to evaluate the surveys. As the survey consisted of only a small number of open-ended questions, this was the most sensible way to sort and evaluate the responses.

In addition, a simple survey on the ‘Potential for Tourism in Kazakhstan’ was conducted.
The survey consisted of 12 questions. Here the author uses a slightly different base formula which was mentioned earlier to calculate the population n:

$$n \geq z^2 * \frac{P * Q}{\varepsilon^2}$$

$$n \geq 1{,}96^2 * \frac{0{,}5 * 0{,}5}{0{,}075^2} = 170{,}7377$$

The main difference lies in the fact that the population is infinite in this calculation. This is mainly because the survey was conducted online and nationwide. The sample size n was calculated as 150. The margin of error ε has been choosen as 7.5 % due to the expected number of incorrectly completed questionnaires. The confidence level z is 1.96 (this corresponds to D(z) = 9500, approx. 95% according to (BAHRENBERG ET AL. 2017: 224–225). P corresponds to the actual mean value of the population (estimated) and Q corresponds to 1-P (MOSSIG 2012: 21). A pre-test was conducted as a simulation within the online questionnaire system and evaluated by fellow students and colleagues.

The survey was designed entirely as an online survey and was launched shortly before the completion of the work. The target group were Kazakh citizens who wanted to provide information about their tourism behaviour.
The online service Limesurvey.net, which is also provided by Justus Liebig University in Giessen, was selected as the survey medium. The advantage of this service is that the responses are immediately linked to a suitable evaluation matrix, which can be transferred almost directly into the text. In addition, Limesurvey uses IP address logging to ensure that one person cannot give multiple answers and thus potentially distort the results.

The survey yielded 179 usable and fully completed questionnaires. This ensured that the necessary population n was covered.

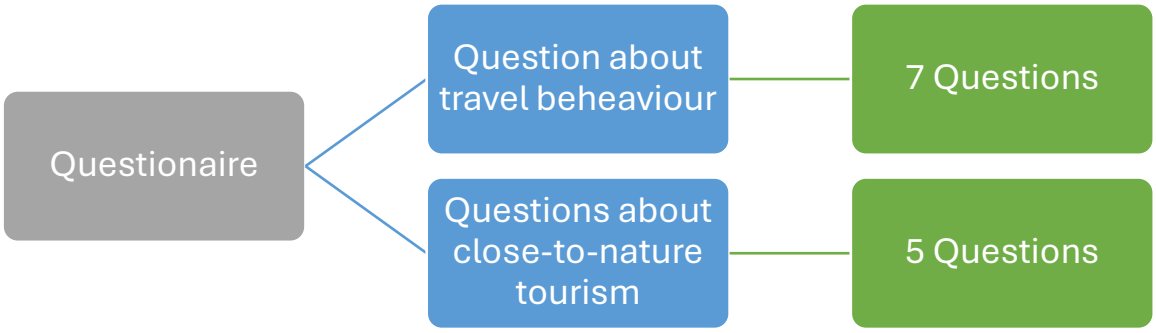

Figure 9: Structure of the second questionnaire (Source: Own design)

The most surprising thing about the survey was that the necessary population was assembled within a few days. Apparently, people in Kazakhstan find it easier to complete online surveys than to do so face to face. A sample of the questionnaire can be found in the appendix. In general, this survey aimed to gain an understanding of how people in Kazakhstan perceive and

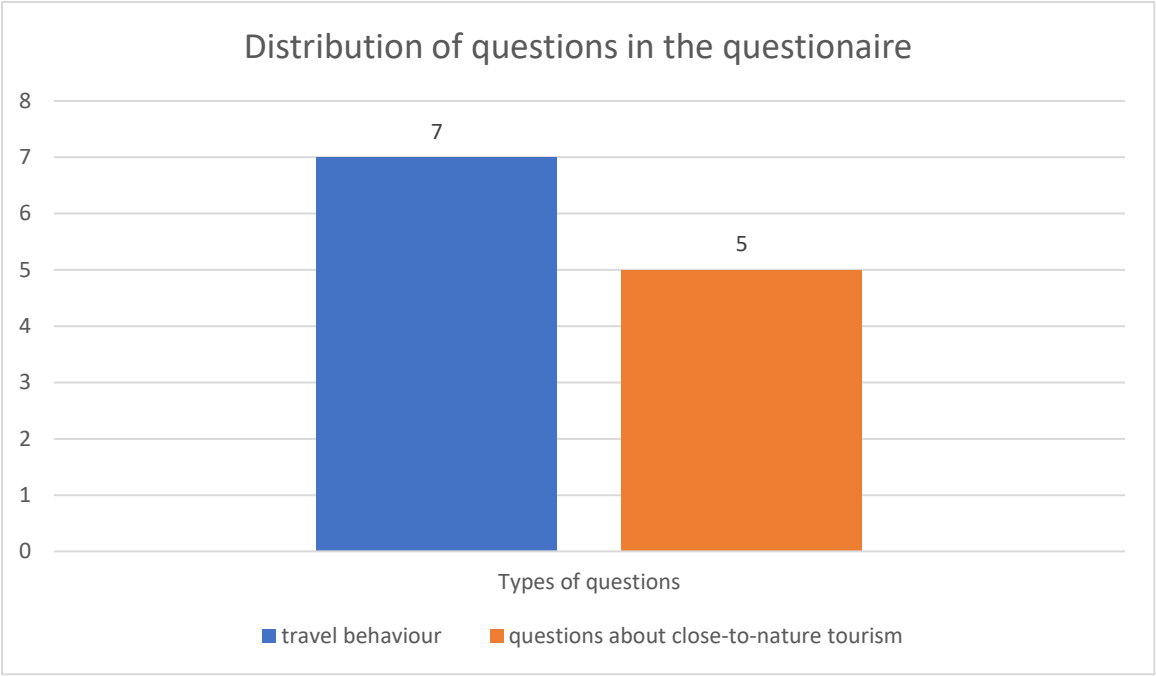

Figure 10: Distribution of questions in the second questionnaire (Source: Own design)

experience tourism. The answers are sufficiently differentiated, and the results can be found in the evaluation chapter. The structure and question distribution can be found in Figures Figure 9 and Figure 10. The term ‘close-to-nature’ tourism used in the figures refers in this context to questions about aspects of ecological, sustainable and environmental tourism. This was necessary in order not to ‘bloat’ the questionnaire for its intended use and has proven to be sufficiently suitable in practice. The most important idea was to design a questionnaire that was as compact as possible, did not overtax the attention span of the users, but at the same time provided enough usable results to be able to work with. Based on the available results, it can be concluded that the author has succeeded in this endeavour.

2.3. Guideline-based expert interview

The guided interview remains one of the most important tools for surveying individuals or small groups of experts. The guide ultimately enables the answers given to be compared and evaluated accordingly. The guide is useful in that it ‘focuses on function-related specialist knowledge, while at the same time allowing scope for the expert's specific point of view and unexpected dimensions of the topic’ (LAMNEK u. KRELL 2016: 689–690).

Even though the guidelines and thus the interviews were kept relatively ‘open,’ it is important to have a conceptual basis in order not to jeopardise the structure of the interview. It can be assumed that, despite a carefully constructed guideline, there will be some leaps in thought and topic during the actual interview, which can be attributed to the natural course of a conversation. In order to ‘bring the interviewee back’ and prevent the conversation from drifting in an uncontrolled direction, ‘guard rails’ are needed (MATTISSEK ET AL. 2013: 174).

Two guided interviews were conducted. The first was with Gulnar Bisultanovna Bizhigitova, Head of the Plant Processing Department at the Ministry of Agriculture of the Republic of Kazakhstan. She was selected because the author had previously worked with her in an academic context. In addition, she is one of the few people within the Kazakh ministry landscape who has knowledge of Geoparks. Through her work, she has ‘exclusive expert knowledge’ of the administrative structure and decision-making processes within the ministry.

The interview was not conducted in person. Instead, Ms Bizhigitova was sent a prepared questionnaire, which she was able to complete at her leisure. This step was necessary due to unforeseen scheduling complications. The original interview was conducted in Russian, and the edited translation can be found in Chapter 4.3. The seven questions essentially covered the topics presented in Figure 11.

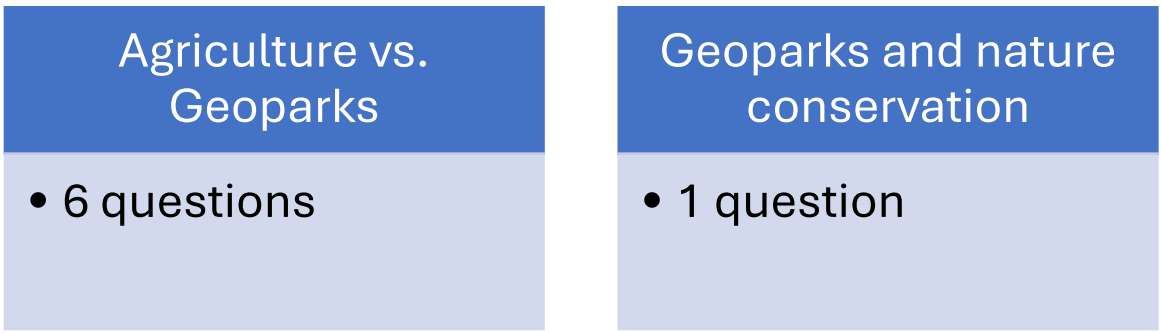

Figure 11: Questions for the expert interview with Ms Bizhigitova (Source: Own design)

The reason why the head of the Department of Geotourism and Geomorphology at the Institute of Geography of Kazakhstan was chosen as an interview partner is obvious. She is one of the few people who has comprehensive knowledge of geotourism in Kazakhstan and has access to the greatest possible information resources. One could also say that she has the 'special knowledge deemed necessary' that identifies her as an expert in a 'division of labour-organised society,' and not just because she is the head of the institution and therefore considered an expert by virtue of her position. As an actor, she acquires 'expert knowledge' through her (many years of) work, as she also has privileged access to information that is denied to other people (MEUSER u. NAGEL 2009: 467, MEUSER u. NAGEL 2009: 468).

The actual interview proved extremely difficult due to the interviewee's very tight schedule. The interview took place on Friday morning, as all other appointments during the week were already fully booked. In addition, there was exorbitant time pressure due to other commitments. However, this is not unusual, as high-ranking representatives of government institutions in particular have very tight schedules. For this reason, the interview was booked in advance, otherwise it would certainly not have been possible.

Even though the conditions were not ideal due to the tight time frame, the interview itself went very well. The interview was conducted in Kazakh language. The advantage of this was that it

created a level playing field, even though there were some dialectal differences between the interviewer and the interviewee, which were not significant overall. In this context, it was important to create an atmosphere in which both the interviewee and the interviewer felt equally comfortable. It should not appear as if the interviewee had been summoned for an interrogation or had to answer questions at their own risk.

Creation of Geoparks in Kazakhstan	Development of Geoparks in Kazakhstan	Challenges of Geoparks in Kazakhstan
• 3 questions	• 3 questions	• 2 questions

Figure 12: Questions for the expert interview with the Department of Geotourism and Geomorphology (Source: Own design)

There were eight questions to choose from. The questions were sorted into three topics: 'Creation of Geoparks in Kazakhstan', 'Development of Geoparks in Kazakhstan' and 'Challenges of Geoparks in Kazakhstan'. See also Figure 12.

The structure of the questions focuses on the classic process of creating Geoparks. The survey was conducted chronologically. The questions related to the creation process and any preliminary work involved in establishing Geoparks in Kazakhstan. The second section dealt with the further development of Geoparks in Kazakhstan, should they be created. Finally, the third part dealt with the challenges that Geoparks hold for Kazakhstan.

Unfortunately, only 30 minutes were available for the survey, which corresponds to a time slot of 3.75 minutes per question. Due to the short time frame, no further questions were asked. The value is not particularly high, but ultimately sufficient to allow enough time for each question to be asked without losing any essential information. In conclusion, it can be said that the information gained from the interview roughly met expectations under the given circumstances. The author would certainly have liked more time to explore some points in greater depth, but overall, the yield of information was satisfactory. The questions asked can be found in Chapter 4.3 to this paper.

2.4. Receptive interview

A special stroke of luck occurred during a visit to Burabay, northwest of the Kazakh capital Astana. The stay was marred by tight flight schedules. Nevertheless, early on a Saturday morning, we managed to formally 'catch' the director of Burabay National Park. This was also thanks to the fact that our accommodation was located in the immediate vicinity of the national park house. It turned out that two department heads were also present on the same day, who were subsequently interviewed in a three-way conversation.

Another short interview was conducted with one of the tour guides who works as a boatman on Lake Burabay.

As this conversation came about very unexpectedly, it was unfortunately not possible to prepare a proper guide for the interview in such a short time. The author therefore decided to use an interview method she was familiar with from the field of social sciences. This was the receptive interview.

Further conversations were conducted, varying in length. One conversation was held with an accommodation provider in Basshi (headquarters of the Altyn-Emel National Park Administration) during a break between two expedition tours with a short stay. This setting is not ideal, but under the circumstances it was the best way to obtain information, especially since the national park administration vehemently refused to answer any questions whatsoever.

According to (KLEINING 1994: 123, KLEINING 1994: 125) a receptive interview is:

> *„The receptive interview is the recording of one-sided, everyday messages according to scientific rules for the exploration of facts. "*

The fundamental advantage of this type of interview lies in the fact that you do not need a list of questions. In addition, these interviews reveal an unmasked reality, so to speak, the unvarnished truth in the words of the interviewee. The information gained is of the highest value,

as nothing is embellished in such conversations and the flow of speech is unhindered by any structure (KLEINING 1994: 125).

Of all the forms of receptive interviews, the author opted for a version that is well suited to the present case, the so-called provoked receptive interview. The advantage of this type is that the interviewer must first actively initiate the conversation so that, ideally, a flow of speech begins (LAMNEK u. KRELL 2016: 357, KLEINING 1994: 127). This activation can be achieved with a simple greeting. It is important not to interrupt the other person's flow of speech in order to gain as much information as possible. To prevent interest from waning or the other person from losing interest, it is advisable to use active listening techniques (LAMNEK u. KRELL 2016: 358). The evaluation is carried out using memory logs or brief notes taken during the conversation. However, this should only be done if the other person does not find it disruptive. A complete transcription is not necessary, as only the essential points are summarised and evaluated during the evaluation (KLEINING 1994: 127).

Finally, however, it must be pointed out that the interview situation throughout Kazakhstan can be described as rather 'difficult.' Even in face-to-face interviews, the information obtained is sometimes so limited that it is often not worth continuing the conversation. This applies equally to formal, scheduled interviews and informal conversations. The problem is the same as that discussed elsewhere in this paper: a deep mistrust of other people. Even factors such as the same nationality or regional origin seem to have only a moderate influence on this. This obvious relic from the days of the USSR is also very common in everyday life, but is much less noticeable there. This realisation is not encouraging, but it cannot be changed retrospectively. In this respect, one has to make do with what one has, even if it falls short of expectations.

2.5. Participatory observation

Another part of the methodology used deals with participant observation. According to (LAMNEK u. KRELL 2016: 516):

> *„The defining feature of participatory observation is its use in the natural environment of the subjects under investigation."*

Participatory observation was mainly used at the lowest social level (in this case, in villages). The aim was to live with the villagers for a period of time in order to gain their trust and thus discover their 'real' views on certain topics. Ideally, the author belongs to the same ethnic group as the people being observed, so that the cultural framework does not pose any difficulties (SPRADLEY 1980: 86). Nevertheless, it must be understood that regional characteristics, such as language (dialect), can also identify an observer as a stranger. It was fundamentally important to gather information from social situations (see also Figure 13). The combination of

Figure 13: The social situation triangle (Source: Own design according to SPRADLEY 1980: 40)

actor/activities played a particularly important role here. The location as a whole was only significant as a geographical location within the study area. The goal of gathering information was achieved within the defined observation phase.

2.6. Literature review

A considerable amount of literature was used for this paper. Therefore, reviewing and evaluating the available literature was an important, albeit time-consuming, step in the process. Given the wealth of literature available, an effort was made to focus on the essential aspects of the paper and to select and use literature that was relevant to the topics and methodologies used. Literature in English, German and Russian was consulted. Russian literature is particularly

prominent in the geographical descriptions of the individual Kazakh regions. The reason for this is that, although the literature is somewhat older, there is hardly a more precise description of geological phenomena and maps of Kazakhstan than those from the Soviet era. The literature also covered the basics of the UNESCO statutes for global Geoparks and natural heritage, as well as national legislation on nature reserves, legal relationships in land ownership, legal procedural instructions and decision-making processes ultimately related to the establishment of Geoparks in Kazakhstan. On the other hand, it must be noted that there is little to no literature available for many areas, particularly when it comes to detailed descriptions of the study areas. As already mentioned, the few written sources that can be found are either very old and no longer relevant or do not cover certain topics at all. The only more or less reliable sources in this case are those found on the internet. This is also due to their topicality. Social media is also a useful source, especially for images, as these posts are usually much more recent and provide good visual representation. This applies to the description of individual features such as entire landscape areas. In particular, there is no really adequate literature in either Russian or English for parts of the eastern Altai region.

2.7. Cartographic and spatial workflow

Using QGIS GIS software, scientific, detailed maps of Kazakhstan and the individual study areas were created, providing the author with a comprehensive understanding of the research areas. The geographical data on these maps included terrain features and land use classifications, as well as existing protected areas, transport routes and culturally significant sites. The maps served in combination with GIS (ALBERTZ 2007: 172) as analytical tools to identify logistical and infrastructural constraints and as visual aids for discussions between stakeholders, enabling local participants to review the maps and identify new important sites. Data sources included the Openstreetmaps Foundation, the USGS, NASA and the GHSL (NASA JPL 2013, SCHIAVINA ET AL. 2023, PESARESI ET AL. 2024, EARTH RESOURCES OBSERVATION AND SCIENCE 2025) . A particular difficulty in remote sensing was the fact that, depending on the map software used (Google Maps, Openstreetmap), certain points or locations were either not shown at all or were shown in completely the wrong place. This applies in particular to map data from Google Maps, which locates certain places, such as national parks, in completely the wrong places. These had to be transferred correctly to the specially created maps with the aid of printed maps.

2.8. Tourist guide creation for potential Geoparks within the study area

A trial tourist guide brochure was produced through the analysis of survey data combined with interviews and academic resources and spatial analysis to prove how interpretive resources could boost visitor engagement and economic development in local areas. The guide brochure results include both geological beauty and essential local information about accessibility, interpretive signage, and available services.

2.9. Use of AI

In view of the technical possibilities and the associated reduction in workload, the author has decided to use AI for this dissertation. This mainly concerns the translation from Russian into English. AI (Deepl.com) offers a significant advantage here, especially when English language skills are not optimal. Furthermore, AI (ChatGPT) was used to generatively summarise and shorten self-written texts.

3. Definitions and explanations

The core of this work revolves around the topic of Geoparks, but it should be noted that other aspects are inextricably linked to the subject matter. These include topics such as geotourism and geoheritage. The following is a brief overview of the most important core topics covered in this work.

3.1. Geopark

There are several definitions of what a Geopark is. The best known comes from UNESCO and refers to the Geoparks in the UNESCO Global Geopark Network. It states (UNESCO 2015: 2–3):

> *'UNESCO Global Geoparks are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development.'*

It is highly probable that if a Geopark is created in Kazakhstan, it will most likely follow the model and regulations of the UNESCO Global Geoparks Guidelines even if a national system of Geoparks is meanwhile under discussion. For the moment, at least in Kazakhstan, there is no legally binding definition that can be referred to. From this point of view, the author does not consider it useful to refer to further Geopark definitions even if there a some, as these would have no effect whatsoever in case of doubt. A comparison of definitions is not considered useful, as the scientific research into Kazakhstan's Geopark potential in this paper focuses explicitly on the establishment of UNESCO Global Geoparks. This is because, in an international comparison, these have the greatest representative value, also to the outside world. The fact that a Geopark opened in Kazakhstan in 2024 does not undermine this assumption, as the existing Geopark is based on different regulations.

3.2. Geotourism

In the field of geotourism, there are also various approaches to defining the concept. One of the first definitions comes from (DOWLING u. NEWSOME 2018: 3)which states:

> *Geotourism is a form of natural area tourism that specifically focuses on geology and landscape. It promotes tourism to geosites and the conservation of geodiversity and an understanding of earth sciences through appreciation and learning. This is achieved through independent visits to geological features, use of geo-trails and view points, guided tours, geo-activities and patronage of geo-site visitor centres.*

In view of the evolution of the term and what it stands for (DOWLING u. NEWSOME 2018: 8) have also devised a more appropriate, dynamic definition:

> *Geotourism is tourism of geology and landscape usually undertaken at geosites. It fosters conservation of geological attributes (geoconservation) as well as understanding of geoheritage and geodiversity (through appropriate interpretation). At a higher level the geological knowledge imparted at a geosite may be used to inform its biotic and cultural features so that a more holistic view of the environment can be gained. This should then lead to a more enhanced understanding and appreciation of the world built from its geological foundations.*

Another well-known definition of geotourism comes from the European Geopark Network and was set out in the Arouca Declaration in 2011. It states:

'Geotourism should be defined as tourism which sustains and enhances the identity of a territory , Taking into consideration its geology, environment, culture, aesthetics, heritage and the well-being of its residents. Geological Tourism is one of the multiple components of geotourism (EUROPEAN GEOPARK NETWORK 2011).'

For the purposes of this paper, reference is made to the 2018 definition of geotourism by DOWLING u. NEWSOME. This is mainly because it covers all the necessary parameters for geotourism in Kazakhstan. It should be noted that geotourism does not yet enjoy a high status in Kazakhstan and is either not mentioned at all by most tourism companies or is incorrectly attributed to so-called 'eco-tourism'.

3.3. Geoheritage

A for Geoheritage, there are also some definitions that are worth taking a look on them. The first one is made by (CROFTS ET AL. 2020: 6) :

'Comprises those elements and features of the Earth's geodiversity, either singly or in combination, that are considered to have significant value for intrinsic, scientific, educational, cultural, spiritual, aesthetic, ecological or ecosystem reasons and therefore deserve conservation. Geoheritage constitutes a legacy from the past to be maintained in the present and passed on for the benefit of future generations. Geoheritage records the cumulative story of the Earth preserved in its rocks and landforms, as in the pages of a book, albeit fragmentary and with pages missing. It is represented in special places and objects (specimens in situ and in museum collections) that are fundamental to our appreciation of the history of the Earth and the evolution of life. The underlying philosophical basis is set out in the Digne Declaration on the Rights of the Memory of the Earth, which outlines a rights-based approach to geoheritage and is a foundation of UNESCO Global Geoparks.'

A much narrower definition of geoheritage can be found with (NEWSOME u. DOWLING 2018: 305), which only includes geological components and, at best, geological processes in the definition:

'For the purposes of this chapter we consider geoheritage as pertaining to the occurrence of landforms [...] rocks [...] , soils [...], minerals [...] and fossils [...] and it may include active geological processes such as glacial [...] and volcanic [...].'

The strictest definition of all is given by (BRILHA 2016: 120) which states:

'As with geoheritage, [...] elements can also be found in situ—geodiversity sites—and ex situ. However, they should not be considered geoheritage because this term should only be used when their scientificvalue is accurately recognised by the national and/or international scientific community.'

In fact, the latter definition is hardly applicable to Kazakhstan, as not only the national but also the international scientific community is unclear about certain geosites, meaning that a recognition process has not yet taken place, thus delaying or even rendering impossible for the foreseeable future any categorisation as geoheritage. The definition of NEWSOME u. DOWLING indeed is the most practical for the means of Kazakhstan but lacks the special part. According to this definition, practically every part of Kazakhstan would be a piece of geoheritage (which is not fundamentally wrong, but simply too much in a quantitative sense). Therefore, in the author's opinion, CROFTS ET AL. definition is the most appropriate for a country such as Kazakhstan, especially since it explicitly emphasises the protection and preservation value of individual geoheritage elements, which are of great value '*have <u>significant value</u> for intrinsic, scientific, educational, cultural, spiritual, aesthetic, ecological or ecosystem reasons and therefore deserve conservation*', and this also applies to most of the geosites in the planned Geopark locations. Finally, we will briefly discuss the connection between geoheritage and cultural heritage. To establish a link in-between geoheritage and Cultural Heritage it's recommended to take a closer look at the Figure 14. Here you can see that cultural heritage is an indispensable part of geoheritage. As Pijet-Migon explains, the diagram includes 'the most evident linkages between them'. This refers to the fields of geoheritage and cultural heritage and the connecting elements. This finding is consistent with (BROCX u. SEMENIUK 2007: 53) definition, which assumes that cultural and geological heritage are inseparable. This however is mostly the case in Kazakhstan, where geological objects are often deeply rooted in national or local culture (e.g. Mt. Kokshetau in the Burabay Lake Region, which is steeped in ancient legends from the Khanate era).

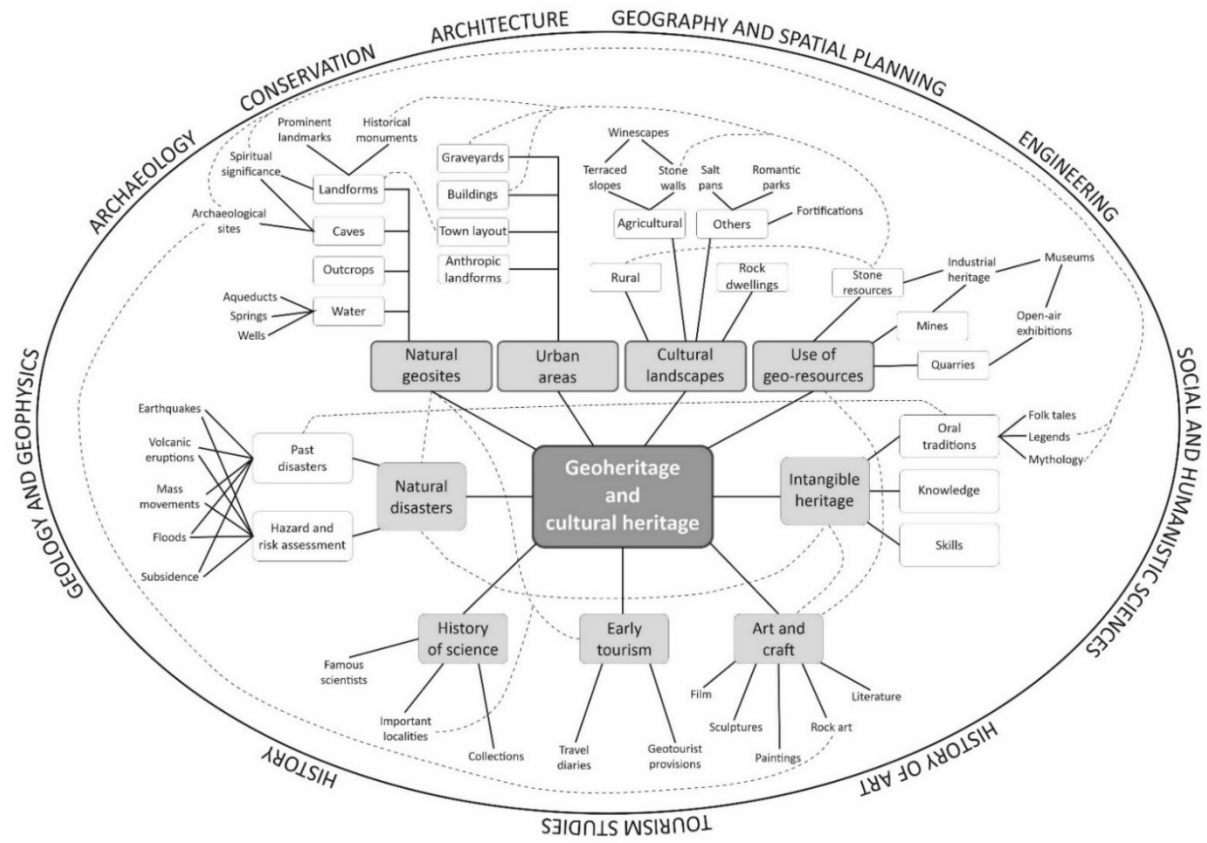

Figure 14: Topics in terms of Geoheritage / Cultural Heritage as a decision tree. (Source: PIJET-MIGOŃ and MIGOŃ 2022: 43)

3.4. Protected Areas

Since Geoparks inevitably involve protected areas, it is considered useful at this stage to mention some definitions of protected areas. We are also in the fortunate position that Kazakhstan has legally defined some of the terms used below. This makes the definition easier, especially since this paper is limited to Kazakhstan and thus falls within the scope of the laws mentioned above. The law to which the following definitions refer is called 'Law on Specially Protected Natural Areas'. The interpretation was based on (INSTITUTE OF LEGISLATION AND LEGAL INFORMATION OF THE REPUBLIC OF KAZAKHSTAN 2006).

According to the Kazakh law a biosphere reserve is:

'a state nature reserve, state national nature park or state nature reserve and their protected areas included in the World Network of Biosphere Reserves'

According to the Kazakh law a protected area is:

'fields of land, water objects and air space above them with natural complexes and objects of the state natural conservation fund for which the special protection regime is established'

According to the Kazakh law protection protection in the sense of legal protection (e.g. from committing criminal offences) is:

'protection of especially protected natural areas (hereinafter – protection) – a set of measures that may be conducted in especially protected natural area for detection and suppression of the breaches of the legislation of the Republic of Kazakhstan in the field of especially protected natural areas, preventions, detections and liquidation of fires'

According to the Kazakh law protection in the sense of biologically active protection (e.g. protection against ecological pollution by park rangers) is:

' protection of specially protected natural areas (hereinafter referred to as protection) - a set of measures that can be taken in a specially protected natural area to prevent and eliminate the harmful effects of water, protect plants from pests and diseases, and regulate the number of animals'

According to the Kazakh law recreation load is:

' simultaneous quantity of vacationers on a unit area in consideration of a total time of the type of rest for accounting period or for a time unit'

According to the Kazakh law natural complexes are:

'a set of objects of biological diversity and inanimate nature subjected to protection'

Since there is no legally defined term for Geopark in Kazakhstan, the term is not legally protected and can therefore be used by anyone in theory. However, the "natural complexes" mentioned in the law are very similar in content to a Geopark. It can therefore be assumed that the establishment of a Geopark or Geopark-like area cannot take place entirely without a legal basis.

Kazakhstan, as many other countries, also relies on the categories of IUCN, there is a definition of protected areas given by the IUCN, that is applied in Kazakhstan as well. The definition according to (DUDLEY 2013: 8) is as follows.

"A protected area is: A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values".

4. The Peoples Voice - Evaluation of interviews and questionnaires

As described in the Methods section, the author conducted several surveys and interviews. The surveys served two primary purposes:

1. To find out what ordinary people on the street, outside of scientific or political institutions, know about Geoparks

2. To gain an insight into the tourism behaviour of the population in order to evaluate the extent to which this will coincide with the establishment of a Geopark as a possible tourist destination.

An unfortunate but unavoidable fact is that, on the whole, the desired amount of information could not be obtained from the interviews, and this cannot be corrected retrospectively.
In the following subchapters, the results obtained are analysed and interpreted.

4.1. Kazakhstan and Geoparks – A knowledge query

The survey on Geopark topics was conducted with a total of 70 participants.

Although the survey was originally designed as a qualitative survey, it became apparent during the initial interviews that the questionnaire needed to be converted into a quantitative format for auxiliary and evaluation purposes. The reason for this was that the respondents provided little to no input when answering purely open-ended questions. With the help of a partly predefined, partly open question structure, the interview situation relaxed noticeably.

The results of the survey come as no surprise to the author. Overall, it can be said that the majority of respondents (around 75%) have no or only very limited knowledge of what a Geopark is. The under-38 age group performed slightly better in terms of knowledge, which is also due to the fact that the majority (around 70%) of those surveyed were under 38 years of age. In terms of educational attainment, it can be said that knowledge of Geoparks is slightly higher among people with at least a bachelor's degree. Whether this is due to the academic context cannot be determined, but it is not significant for the result. Ultimately, however, this was exactly what the survey was intended to achieve: to reach people without any prior knowledge in order to increase the authenticity of the survey.

When conducting the surveys in the developed potential Geopark regions, the author was surprised to find that the people who were willing to answer the questionnaire did not actually come from the region but mostly from larger cities such as Almaty or Astana. This does not make the surveys any less meaningful, but only confirms the assumption that the rural population continues to react with suspicion to ‘strangers’ who ask too many questions, even if only in the form of a survey. As a result, almost half of all respondents come from Almaty (approx. 48%), followed by Astana with 20% and respondents from western Kazakhstan in general with around 13%.

A= Number of given answers, P= Percentage

Question 1 is missing because age date was processed in another way

2 Your gender	A	P
male	40	57,14%
female	30	42,86%

3 Your Education level	A	P
Basic education (elemtary school)	0	0,00%
Middle education (High School)	23	32,86%
Higher education (College)	3	4,29%
Higher education (Bacherlor Univesity)	22	31,43%
Higher education (Master, Diploma University)	22	31,43%
PhD	0	0,00%

4 Your Place of Residence	A	P
Burabay region	0	0,00%
Bozzhyra Region	0	0,00%
Altai Region	0	0,00%
Altyn-Emel Region	0	0,00%
Aral Region	0	0,00%
Almaty	33	47,14%
Astana	14	20,00%
Eastern Kazakhstan	6	8,57%
Western Kazakstan	9	12,86%
Southern Kazakahstan	4	5,71%
Northern Kazakhstan	2	2,86%
Central Kazkakhstan	2	2,86%
Other Residence	0	0,00%

5 On a scale from 0 to 5 please tick how you think the status of your knowledge about Geopark is	A	P
Nothing	13	18,57%
	31	44,29%
	8	11,43%
Something	14	20,00%
	1	1,43%
	3	4,29%
Everthing	0	0,00%

6 On a scale from 0 to 5 please tick how much a cration of a Geopark will affect your region	A	P
Severe negatively	0	0,00%
	0	0,00%
	0	0,00%
Neither postive, nor negative	8	11,43%
	10	14,29%
	50	71,43%
Very Positively	2	2,86%

7 What positive effects, in your opinion, can the creation of a geopark bring?	A	P
Tourism effects	29	41,43%
educational / scientific effects	17	24,29%
preserving effects (nature/environment)	39	55,71%
Gaining Natural Resources	2	2,86%
Development of Infrastructure	7	10,00%
Personal wealth	6	8,57%
Others	9	12,86%

8 What possible negative consequences, in your opinion, could arise from creating a geopark?	A	P
Corruption	2	2,86%
Restrictions in general	2	2,86%
Pollution	3	0,0429
Limited access to some areas	1	0,0143
Rise in Tourism	1	1,43%
Destroying nature	3	4,29%
None	58	82,86%
Others	3	4,29%

9 How could you support the creation of a geopark?	A	P
Support demands of authorities	2	0,0286
Support demand of scientific staff	1	0,0143
Support demand of educators	2	2,86%
Promote / Advocate for Geoparks in public	37	52,86%
Preserving nature	5	7,14%
Participate in research (e.g. surveys)	1	1,43%
Voting for politicians	1	1,43%
As a non monetary volunteer / supporter	10	14,29%
Monetary donations	5	7,14%
Other	1	1,43%
Don't know	12	17,14%
Can't do anything	5	7,14%

10 In your opinion, what needs to be done for the successful creation and functioning of a geopark	A	P
Atrract / educate people about the topic	18	25,71%
Preserve / protect nature	8	0,1143
Lower corruption in the country	1	0,0143
Create more funding for Geoparks	11	15,71%
Create a legal framework for Geoparks	1	1,43%
Creater conditions that make Geoparks thrive	22	31,43%
Find places worth becoming a Geopark	9	12,86%
Develop infrastructure	6	8,57%
Develop economic possibilities to monetize Geoparks	3	4,29%
Develop tourism in general	5	7,14%
Make Geoparks not harmful to nature	1	0,0143
More advertising (from Government)	5	0,0714
Improve planning	6	8,57%
Employ more permanent staff / Create specialists	5	7,14%
Learn from other countries about Geoparks	1	1,43%
I don't know	12	17,14%

11 What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?	A	P
Do not harm the process of Geopark creation	10	14,29%
Support action groups / advocate for Geoparks	5	0,0714
More tourism development is needed	5	0,0714
More geopark development is needed	14	20,00%
Educate population about the topic / Involve the youth	4	5,71%
Preserve remaining Nature	7	10,00%
Create favourable conditions for Geoparks	24	34,29%
Other	0	0,00%
I don't have any	25	35,71%

12 Where, in your opinion, should a geopark be created?	A	P
Burabay region	4	5,71%
Bozzhyra Region	0	0,00%
Altai Region	0	0
Altyn-Emel Region	4	0,0571
Aral Region	1	1,43%
Almaty	23	32,86%
Astana	7	10,00%
Urban regions	1	1,43%
Natural areas (like forests)	12	17,14%
North Kazakhstan	0	0,00%
East Kazakhstan	4	0,0571
South Kazakhstan	4	0,0571
West Kazakhstan	1	1,43%
Central Kazakhstan	1	1,43%
Other Regions	8	11,43%

Figure 15: Evaluation of the interview about Geoparks (Source: Own Design)

Although knowledge about the function and nature of Geoparks was limited, the vast majority (around 89%) of respondents were certain that Geoparks would be a good thing for their home region. This is remarkable in that, without knowing exactly what a Geopark is, people still have a positive association with the term from the outset.

Respondents were also asked what positive effects they hoped a Geopark would have. The results can be described as varied, although there are three main points that are important to respondents. These include, above all, the conservation and protection of nature (55%), the development of tourism (41%) and effects on science and education (25%). Smaller issues included the development of infrastructure in the region. It should be noted that multiple choices were available, as respondents were not limited to one topic.

When asked how people could support the creation of Geoparks, the picture was fairly clear. Around 53% of respondents said they would promote Geoparks in public and try to convince their friends and family. Around 15% even said they would like to work as volunteers or supporters for Geoparks. 7% said they would like to protect the environment more in order to enable Geoparks, and a further 7% were even prepared to donate money for the creation of Geoparks, the majority of whom were over 38 years old.

When asked what needed to be done to ensure the successful creation and functionality of Geoparks, the answers were rather varied. Around 30% said that the foundations needed to be laid to enable Geoparks to thrive. Around 25% believe that more people need to be informed about the topic or that it needs to be addressed in education. 15% would like to see more government funding for Geopark development. 12% want to find a suitable region for a Geopark first, and around 11% say that more nature conservation and environmental protection are the best foundations for a Geopark.

When asked for their suggestions, the respondents showed a certain interest in creating good conditions for the establishment of Geoparks in general (35%), while others went further and said that the development of Geoparks as a topic must be given higher priority (20%) and many see a problem in attempts to undermine the development process of Geoparks (15%).

The last question dealt with possible locations for Geoparks in Kazakhstan. Surprisingly, around 32% favour a Geopark in Almaty or its immediate vicinity. 17% prefer rural, unspoilt areas and 10% are in favour of Astana and its surroundings. Five per cent each voted for the Burabay and Altyn-Emel regions. This result can be attributed, on the one hand, to the fact that many respondents come from Almaty and Astana and, on the other hand, to the fact that people equate a Geopark with a nature park or national park. Something that people know and appreciate. Overall, the survey was very informative. In conclusion, it can be said that knowledge of Geoparks among the population is practically non-existent, except for a few individuals who either actively seek information or happen to come across it by chance. Surprisingly, the attitude towards Geoparks and what they could achieve is fundamentally positive. The fact that people are willing to attach importance to the concept and at least talk about it is not a matter of course from a Kazakh perspective. In summary, it can be said that if there is a public discussion about Geoparks and their creation, many people, not only from the scientific community but also ordinary people on the street, will support it or at least keep the topic in the conversation.

4.2. Kazakhs and Leisure – How do you go on vacation?

Now it's time to take a closer look at Kazakh tourist behaviour, focusing in particular on the opportunities and challenges of ecotourism. 179 participants took part in the online survey. The analysis is based on a survey that records the travel behaviour, motivation, perceived barriers and attitudes towards nature and geotourism among the Kazakh population.

Frequency of travel is asked about in the first question. About a third (31.84%) of those surveyed travel within Kazakhstan every year, and another 25.70% even travel several times a year. It is noteworthy that a significant proportion (23.46%) travel little or not at all. For most people traditional tourism, such as beach and city breaks, clearly dominates with 68.16%. Ecotourism, on the other hand, already accounts for a remarkable 32.96%, while geotourism and active forms of holiday such as hiking each account for around 13%. This is not surprising, since

How often do you travel around Kazakhstan?	A	P
Several times a year	46	25,70%
Once a year	57	31,84%
Every few years	38	21,23%
Virtually no travelling	42	23,46%
What type of tourism is closer to you?		
Classic tourism (beaches, cities, all-inclusive hotels)	122	68,16%
Ecotourism (national parks, nature reserves, wilderness areas)	59	32,96%
Geotourism (volcanoes, caves, canyons, geological parks)	26	14,53%
Cultural and cognitive (museums, historical places)	52	29,05%
Active tourism (hiking, rafting, mountaineering)	23	12,85%
Other	4	2,23%
What's more important to you when travelling?		
Comfort and infrastructure (hotels, restaurants)	105	58,66%
Nature and Ecology	103	57,54%
Unique geological sites	40	22,35%
Culture and History	71	39,66%
Have you ever chosen ecotourism destinations (e.g. eco hotels, nature reserves)?		
Yes, regularly	18	10,06%
Yes, but rarely	56	31,28%
No, but would like to try	87	48,60%
No, not interested	18	10,06%
Have you visited geological sites (volcanoes, caves, canyons, geoparks)?		
Yes, on purpose	54	30,17%
Yes, but incidentally (as part of the route)	42	23,46%
No, but would like to	72	40,22%
No, not interested	11	6,15%
What prevents you from choosing ecotourism or geotourism more often?		
High price	54	30,17%
Lack of information	55	30,73%
Complex logistics	33	18,44%
Lack of comfort	35	19,55%
I prefer another holiday	19	10,61%
Nothing in the way	36	20,11%
How do you feel about holidaying in places with untouched nature but minimal infrastructure?		
Willing to endure inconvenience for the sake of nature	56	31,28%
Balance is important: nature + basic comfort	107	59,78%
I prefer only comfortable places	21	11,73%
I don't like wild places	12	6,70%
If new routes with unique natural objects (for example, ancient rocks, canyons, caves) appeared in Kazakhstan, would you be interested?		
Yes, very	84	46,93%
Perhaps if there is convenient access	83	46,37%
Rather not	8	4,47%
I don't know	4	2,23%
Do you think it is necessary to develop new natural tourist zones in Kazakhstan?		
Yes, it will attract more tourists	90	50,28%
Yes, but it's important to preserve nature	83	46,37%
No, there is enough existing space	0	0,00%
Difficult to answer	6	3,35%
What would motivate you to visit a new nature park?		
Unique Landscapes and Photo Points	70	39,11%
Interesting tours and guides	92	51,40%
Good transport accessibility	64	35,75%
Availability of facilities (campsites, cafes)	52	29,05%
Possibility to combine with active holidays	55	30,73%
Are you willing to participate in environmental initiatives while travelling (litter picking, volunteering)?		
Yes, regularly	51	28,49%
Sometimes, if I get the chance	99	55,31%
No, not my format	29	16,20%
How do you usually choose your travel destinations?		
Recommendations from friends/bloggers	105	58,66%
Travel agencies and travel websites	55	30,73%
Social media and travel media	60	33,52%
Scientific/Environmental Resources	15	8,38%
Other	8	4,47%

A= Number of given answers, P= Percentage

Figure 16: Evaluation of the interview about tourism behaviour (Source: Own Design)

everyone has an own interpretation of eco-tourism which usually doesn't follow the scientific definitions.

When it comes to categorising the most important things during a trip, almost equal numbers of respondents say they prefer a certain level of comfort and infrastructure, especially hotels and restaurants (around 59%). For 58%, experiencing nature and the environment is almost as important. Around 40% prioritise culture and history, while only around 22% have a preference for geological sites.

The experience with ecotourism is part of this question. Regular visits to ecotourism destinations are relatively rare at 10.06%, but there is considerable interest (48.60%) among respondents who have not yet practised this form of tourism.

The same applies to geological attractions: 40.22% are interested in visiting them, but have not yet done so. At least about 53 % visited geological sites at all, with more than the half of visitors who did this on purpose.

The next question deals with barriers to the use of ecotourism. Products shows that the main barriers to greater use of ecotourism are mainly Lack of sufficient information (30.73%) and

High costs (30.17%) as well as complex logistical requirements and lack of comfort (together 37.99%) These obstacles point to structural challenges in the marketing and accessibility of nature-based destinations.

Also, there are existing attitudes towards nature experiences. The majority of respondents (approx. 60%) prefer a balance between nature experience and comfort. A clear minority of 31.28% are willing to accept certain inconveniences in order to enjoy intense nature experiences. Only 6.70% reject wild, nature-oriented locations on principle.

The results about development potential of new nature tourism products are interesting. New nature-based travel destinations are meeting with broad interest. 46.93% of respondents would actively take advantage of such offers, with a further 46.37% doing so if accessibility and

infrastructure were adequate. It is striking that no one considers the existing offer to be sufficient, which points to clear opportunities for development.

Concerning the motivation for visiting nature parks the following aspects are decisive for motivation to visit. At first Interesting guided tours and excursions (51.40%), also unique landscapes and photo opportunities (39.11%) seem to matter a lot. Not surprising is the last point good infrastructure and accessibility (35.75%) since good infrastructure is worth a lot to most tourists as mentioned before.

Environmental awareness and sources of information are reasons for more than half (55.31%) of the participants to participate in environmental initiatives occasionally. 28.49% even do so regularly. Just around 16% deny the participation in such initiatives straight.

Furthermore, decisions on travel destinations are mainly made on the recommendation of friends and acquaintances (58.66%) or through travel agencies (55.30%). It's not surprising, that around one-third (33,52%) of the participants, make travel decisions based on social media. Given the year we are in (2025) this seems to be a regular behaviour these days. Scientific sources however influence only 8.38% of respondents.

The conclusion is, that although traditional tourism predominates in Kazakhstan, there is a marked but as yet only partially exploited interest in ecotourism. However, a lack of information, cost factors and inadequate infrastructure are proving to be decisive barriers. Targeted communication measures, improvements to infrastructure and the sustainable development of tourist offerings could substantially strengthen the potential of ecotourism while also contributing to ecological sustainability. Since a significant amount of people relying on social media planning their holidays, this might be the key to bring people into the direction of geotourism as well.

4.3. Geoparks and experts in Kazakhstan

A total of five interviews were conducted as part of this study. Two of those were guided interviews, which are used to begin this analysis. The other receptive interviews took place in a more informal atmosphere and are discussed later in this chapter.

Interview with the Ministry of Agriculture of the Republic of Kazakhstan

In this case, the interviewee was Gulnar Bisultanovna Bizhigitova, Head of the Department of Plant Products Processing of the Ministry of Agriculture of the Republic of Kazakhstan. The interview consisted of seven questions. The interview was designed so that the interviewee could fill out the interview form independently. This was the simplest method, as a physical interview could not be conducted on site at the scheduled time due to scheduling conflicts.

Translation help

The interview contains some terms that are difficult to translate from Kazakh. You will find a translation in this box.

bal = Honey, **kurt** = salty, dried milk product, **keptirilgen zhemis** = dried fruits, **kymyz** = horse milk, **maral eti** = Deer meat, **samsa** = triangle shaped dumpling with meat filling ,**shөp cay** = grass tea, **shubat** = camel milk ,**tary** = millet, **zhent** = dessert (sweet made from butter, cream, sugar and millet), **Ұlytau** = Ulytau, **Ұлытау өnimderi** = Ulytau products,

What possible risks do you see for agricultural producers, if part of agricultural land or adjacent territories will be included in the Geopark?

Kazakhstan possesses significant territories, geological heritage and has a huge potential for the creation of successful Geoparks. The measure on creation and sustainable functioning of the international network of nature reserves and representative landscape reserves, as well as the development of Geoparks and geotourism was worked out in Kazakhstan within the framework of the sectoral Programme "Zhasyl Damu for 2010-2014", approved by the Government of the Republic of Kazakhstan on 10 September 2010 in bill № 924.

The process of creating a Geopark in the republic involves several stages, including submitting an application to UNESCO, developing a development concept, ensuring protection of geological heritage and organising infrastructure for tourism and education.

An important aspect is the involvement of the local population in the creation and management of the Geopark to ensure sustainable development of the area. However, despite the strategic importance of the initiative in terms of preserving natural and cultural heritage, the inclusion of agricultural land within the Geoparks' boundaries may entail a number of significant risks for agricultural producers, especially in socially and economically vulnerable rural areas.

Firstly, under the Specially Protected Area regime, it is possible that restrictions on economic activities may be imposed by prohibiting or restricting the use of mineral fertilisers, pesticides, agricultural techniques, mechanised cultivation and irrigation measures. This may directly affect yields, cost structure and financial sustainability of farms.

Secondly, in the case of changing the category of land from "agricultural purpose" to land with conservation status, there may be risks of revision of ownership or lease rights, which entails legal uncertainty, reduced investment attractiveness and limited access to state programmes to support the agricultural sector.

Thirdly, there are threats of disruption of traditional land use patterns, especially for livestock farms using seasonal pastures. Restricted access to zhailau and daily livestock migration routes may cause localised conflicts over resources, redistribution of pressure on the remaining pastures and, as a consequence, their degradation.

In addition, the priority development of tourist infrastructure near agricultural lands may lead to a conflict of interests in terms of water and land resources use, the risk of displacement of farmers from the most productive areas for the sake of tourist facilities (guest houses, campsites, car parks, etc.).

In general, without farmers' consent, the inclusion of agricultural land in Geoparks can lead to a reduction in agricultural production, reduced employment, increased social vulnerability of the population and loss of food potential.

Have there been situations in your practice when the creation of specially protected natural areas imposed restrictions on the use of agricultural land? How are these issues usually resolved?

Currently Kazakhstan is at the initial stage of establishment of Geoparks.
In Kazakhstan's practice, there have indeed been cases when the establishment of specially protected natural areas (SPNAs), including Geoparks and national parks, imposed restrictions on the use of agricultural land. These restrictions concern both the legal status of land and the land use regime. For example, the use of chemicals, irrigation, grazing or the construction of temporary economic facilities are prohibited. Such cases have raised concerns among agricultural producers, especially in vulnerable agrarian areas.

Example 1 Zhongar-Alatau National Park, Zhetisu region
During the expansion of the park, part of the traditional zhailau in the Koksu and Aksu districts was placed in a strict protection zone where grazing was prohibited. As a result of map revision and negotiations with local farmers, the boundaries of the zone were adjusted and pastures were transferred to the buffer zone. Agreements were made with farmers for limited seasonal grazing. Also, programmes on agro-tourism and sale of traditional products (shubat, kymyz) were introduced.

Example 2 Ұlytau National Park, Ұlytau Oblast
The project covered pastures and wells in use. The population expressed concerns about the loss of access to water. After public hearings, the boundaries of the Geopark were clarified and farmers were given the right to traditional land use within the buffer zone. A grant programme for organic farming was also introduced.

Example 3 Sherkala tract, Mangystau oblast

The establishment of the Geopark provoked protests from pastoralists who restricted access to the zhailau. In response, memorandums were signed with farms, seasonal access rules were established, and micro-credits were provided for the development of ethno-tourism based on farms.

Example 4 Charyn National Park, Almaty Oblast

The project area included irrigated areas for haying and vegetable production. After farmers' appeals, part of the area was removed from the protected area, and the remaining plots were given a special regime of nature protection with the right of water withdrawal and continuation of traditional land use.

Problem solution:

1. *Formation of the Geopark boundary taking into account the positions of akimats, farmers and non-governmental organisations;*
2. *Conclusion of individual agreements with fixing conditions and responsibilities in order to reduce conflicts;*
3. *Government support measures: providing microcredits, grants and training for conversion to organic farming or development of agro-tourism.*
4. *Integration into the Geopark ecosystem: Farmers become partners - suppliers of local products, organisers of ethno-auls and guides for tourists.*

Conclusion:

Creation of specially protected areas in Kazakhstan is possible without infringement of the interests of agrarians on condition of open dialogue, consideration of local conditions and application of support measures and partnership programs.

In your opinion, can the Geopark become a platform for promoting local agricultural products - for example, through fairs, tastings or participation in tourist routes?

Geoparks can become an effective and sustainable platform for the promotion of local agricultural products. In rural areas of Kazakhstan, the agricultural sector is the mainstay of

employment, and Geoparks offer unique opportunities for the development of the agricultural sector.

Firstly, a Geopark is not only a protected area, it is designed for people to visit: tourists, schoolchildren, researchers. This creates a steady flow of potential buyers and interested consumers. For example, from unofficial sources, the "Charyn" National Park in Almaty region received more than 30 thousand visitors during the first season, which gave a start to the spontaneous sale of shubat, zhent and kurt next to the road.

Secondly, agricultural products are part of the intangible heritage of an area and are seen as an element of cultural identity within the UNESCO Geoparks concept. Kazakhstani products - kymyz, shubat, maral eti, bal, kurt, keptirilgen zhemister - can be not only a commodity, but also a "story" presented to the tourist through tasting, master class, ethno-rite.

Thirdly, there are already successful Kazakhstani examples:

- *In the National Park "Ұlytau" ethno-excursions are realised with the participation of local farms, where tourists are treated to shubat and national snacks;*
- *In Katonkaragai district, local maral breeders offer visitors products of maral breeding and apiaries.*

How to implement:

- *Organise a permanent ethno-fair;*
- *Include farms in tourist routes ("geo-object - farm - tasting - souvenir");*
- *Support farmers through grants and microcredits*

Conclusion:

Geopark is not only a tool for nature conservation, but also a real point of economic growth of the village if local farmers and producers are integrated into its model. Fairs, tastings, participation in excursions and branding of agricultural products within the Geopark allow to ensure sales, strengthen cultural identity and increase the income of villagers.

What formats of co-operation between the Geopark and agriculture do you think are most realistic and useful? Could it be agritourism, educational visits, demonstration farms?

I believe that co-operation between Geopark and agriculture is not only possible, but represents one of the most promising forms of sustainable territorial development. The most realistic and useful formats of such interaction, in my opinion, are:

1. Agrotourism on the basis of peasant and farmer farms

The Geopark provides the tourist flow and the farmer provides a unique authentic experience. A tourist can stay in an ethnodom or yurt, participate in rural work, try shubat, kymyz, zhent, observe animals, which turns an ordinary farm into a point of cultural interest.

For example, in Zhangeldi village (Ұlytau National Park), local farms welcome tourists, hold masterclasses and sell natural products. This increases the income of villagers and revitalises the economy of the region.

2.Demonstration and model farms

Farm plots near geo-objectives can be turned into training sites where sustainable production methods - organic farming, sustainable pasture management, product processing - are demonstrated. Such sites are interesting both for tourists and students of agricultural universities.

For example, in Katonkaragai district of East Kazakhstan region, maralovod and beekeeping farms already receive tourists and are included in excursion routes.

3. Gastronomic routes and farm tastings

Agricultural products are an important part of the intangible heritage of the region. Geopark can include in the route visits to farms with tasting of local products, culinary master-classes, buying farm goods.

For example, in Saty aul, near the "Charyn" National Park, tourists visit farmhouses, taste homemade dishes and buy souvenir products (shөp cay, kurt, samsa).

4. Fairs, brand "Geopark", points of sale

Geopark can become a platform for systemic farmer fairs, where local farms sell products with a single logo and legend of origin. This strengthens consumer recognition and trust, promotes the development of territorial brand.

Proposal:

Creation of a branded product line (bal, kurt, keptirilgen zhemis, tary, shubat) under the brand "Geopark food" or "Ұлытау өнімдері".

5. Educational visits and school tours

Geoparks can become a platform for career guidance and environmental education: schoolchildren and students visit farms, learn about professions in agriculture, learn how to take care of land and water.

Conclusion:

The most realistic formats for co-operation between Geopark and agriculture are agrotourism, participation in excursion and gastronomic routes, demonstration farms, educational visits and product branding. All of them do not require significant investments, build on the existing potential of rural areas and have already started to be successfully applied in regions such as Ұlytau, Katonkaragai, Charyn and Mangystau. Their scaling up can significantly increase employment, income and attractiveness of rural areas without compromising the natural environment.

How do you feel about the idea that a Geopark can serve not only as an environmental objective but also as a tool for sustainable rural development? What do you think needs to be envisaged to make it really work?

The idea that a Geopark can be not only an environmental objective but also a tool for sustainable rural development is already confirmed by Kazakhstani practice (Ұlytau, Charyn, Katonkaragai Geoparks).

For this to really work, it is necessary to:

1. *Involve local farmers from the very beginning - through open hearings, joint planning of routes and activities;*
2. *Provide zoning - maintain access to pasture, irrigation, seasonal grazing in buffer zones;*
3. *Develop agritourism - support ethno villages, tastings, farm tours, and on-site produce sales;*
4. *Create a brand for Geopark farm produce - uniform packaging, logo, points of sale in visitor centres;*
5. *Conduct educational tours - include farms in school and student itineraries on ecology and agriculture.*

This approach will combine conservation with increased employment, tourism and sales of local produce.

How important do you think it is to involve farms and rural people in tourism and educational activities related to the Geopark?

Involvement of farms and rural population in tourism and educational activities of the Geopark is one of the key conditions for its sustainable functioning. This not only strengthens social support for the project at the local level, but also provides direct economic returns through agrotourism, sales of products, participation in fairs, excursions and festivals. In addition, the involved villagers become agents of local knowledge, traditions and ecological culture, which increases the authenticity and attractiveness of the Geopark for visitors. Without the active involvement of the local community, the Geopark risks remaining an isolated project without a sustainable base and long-term benefit to the region.

Are there examples where co-operation between the agricultural sector and tourism or conservation initiatives has benefited both parties?

Yes, there are many examples - both in international and Kazakhstani practice - where co-operation between the agricultural sector and tourism or conservation initiatives has brought mutual benefits.

Kazakhstani examples are:

1. Katonkaragai (VKO, national park and geopotential):

Local maral breeding, beekeeping and herbal farms co-operate with tour operators. Tourists visit the farms, taste maral meat ball, shop cay. The products are sold on the spot and are also included in the brand "Altai ecoproducts".

Result: additional income for farmers and a unique experience for tourists.

2. National Park "Ұlytau":

Local farms participate in ethno-excursions:

- tourists taste shubat, kymyz, zhent;

- participate in culinary masterclasses;

- buy products as souvenirs.

Result: farmers are integrated into tourist routes, their products gain added value.

The core topic of the interview relates to the problem between farmers and people working in agriculture and possible designated Geoparks. One of the fears here is that Geoparks or their designation could have a detrimental effect on the above-mentioned group of people. This is particularly due to the restriction of traditional forms of field cultivation. Other points include the benefits that can be derived from potential Geoparks to improve the economic situation of farmers.

Figure 17: Selection of different shapes of Kurt as sold in packs (Source: Own Photo)

It is explained that there are indeed areas of considerable geological significance in Kazakhstan. For this reason, the topic of Geoparks has also been taken up by the government. The interview also refers to the economic importance of various types of tourism (ethno-tourism, agri-tourism, eco-tourism and, in some cases, gastronomic tourism). One example is the sale of local Kazakh specialities to tourists like Kurt (see Figure 17).

It is pointed out that Geoparks can serve as a marketing tool for these regional specialities. This can be achieved by creating specific brand names that reflect the concept of the respective Geopark or region.

Nevertheless, the most important finding from the interview is that there is also a considerable lack of knowledge about Geoparks on the part of the ministry. It is still assumed that Geoparks are protected areas in the sense of nature conservation law. This is interesting because Kazakhstan uses a protected area classification based on IUCN guidelines. However, it is clearly stipulated here that Geoparks do not constitute protected areas within the meaning of nature conservation law. Therefore, the supposed problem of land use changes (from

‘agricultural land’ to ‘protected land’) mentioned in the interview is obsolete and not applicable. It is striking that a connection between protected areas and Geoparks is frequently made in the interview. The Kazakh government should urgently work to clarify for government employees what Geoparks actually are in an international context.

With regard to the possible involvement of the UNESCO Global Geoparks, this is essential in order to refute and disprove misinterpretations, including those on the part of the rural population mentioned here. This is particularly important because the rural population must be involved as an indispensable partner in the development of Geoparks.

Interview with the Institute of Geography of Kazakhstan

The interview was conducted with the head of the Department of Geotourism and Geomorphology at the Institute of Geography of Kazakhstan. The guide consisted of nine questions. The guide and the interview transcript can be found in the appendix. The questions are reproduced below and the answers are summarised underneath. At the end, there will be a summary statement on the interview.

The first question was: **‘In your opinion, what significance does the opening of a Geopark bring to Kazakhstan?’**

The fundamental relevance of Geoparks in Kazakhstan is derived from the precedent set by Geoparks in Europe. This follows the principle that ‘what works for them can't be bad for us’. Another important factor cited was the fact that the rural population living near or within European Geoparks enjoy better living conditions and earning opportunities. In Kazakhstan, this is not an issue, as all the options planned or envisaged so far are so far away from civilisation that it would be impossible to establish any local added value. Therefore, it is not desirable for Kazakhstan to introduce Geoparks; the national parks are sufficient for Kazakhstan as a system.

The second question was: **‘What potential does Kazakhstan have in opening and developing a Geopark?’**

Kazakhstan would probably have great potential for Geoparks, but there are not enough sites that would equally cover natural and geological features and settlements.
Burabay is an exception, especially because everything there is already developed. In addition, there are criteria that must be met if, for example, you want to become a World Heritage Site, and in Burabay, human intervention in the environment cannot be overlooked.
Ultimately, however, there is a potential for Geoparks that should not be underestimated.

The third question was: **'You said earlier that we have national parks. In your opinion, is the presence of national parks enough for Kazakhstan? The question is related to whether it is important to create a Geopark in protected areas, for example, in the territories of a national park. Because I heard that on the territory of Altyn-Emel they plan to create a Geopark in the future. In your opinion, this is already a protected site. Obviously, anthropogenic load and so on, they play a very big influence. And is there any significance to build on the territory of the national park or, in your opinion, it should be in a separate area? '**

People are convinced that there are already enough national parks in Kazakhstan. Geoparks would only fuel tourism. However, tourism is already developing well. Therefore, there is no reason to grant a second status to the same area. In addition, several areas and objects are already part of the UNESCO World Heritage Site. It would not make sense to grant them the additional status of a Geopark. That would make no sense at all.

The fourth question was: **'You said earlier that we have national parks. In your opinion, is the presence of national parks enough for Kazakhstan? The question is related to whether it is important to create a Geopark in protected areas, for example, in the territories of a national park. Because I heard that on the territory of Altyn-Emel they plan to create a Geopark in the future. In your opinion, this is already a protected site. Obviously, anthropogenic load and so on, they play a very big influence. And is there any significance to build on the territory of the national park or, in your opinion, it should be in a separate area?'**

Fishman's statements were studied and Fishman himself convened a commission, many documents were written about the sites in Mangystau, and in the end it all came to nothing. There has been no progress and the matter has come to a standstill. (Author's note: This refers to Ilya Fishman, the most famous Kazakh Geopark researcher). Interest in the topic should be generated at the government level. If this happened, then perhaps something would change; otherwise, everything would remain as it is. There are interest groups that want to promote the topic, but it won't work that way.

Question five was: **'You mentioned that we have UNESCO sites and a Geopark. In general, there is an international network of UNESCO Geoparks, including our neighbours China, Iran, mostly in Europe and America. Do you think we can enter this UNESCO network as well? Exactly on Geoparks.'**

Geoparks in this context mean that these geosites should be unique. There should be no other place in the world where they occur again. In order to determine the uniqueness of Kazakh geosites, research must be carried out. A large-scale study of geo-objects must be carried out. Simply locating them is not enough; research and determination of their uniqueness is the only thing that can be done. Only then would it be possible to find and characterise unique objects in Kazakhstan. It is true that Kazakhstan has beautiful spots, but on a global scale, these do not stand out.

The sixth question was: **'What obstacles do you see on the way to creating a Geopark in Kazakhstan?'**

None, you just have to get it done. If it develops, there would also be support from the government or a programme could be set up to address the issue.

This would allow the topic to develop, but if the government is not interested, nothing will happen. The mere fact that a group of scientists is working on the topic and fighting for it, but cannot bring it to fruition, shows that the government does not support the topic.

Question seven is: **'Does it make any sense at all to create a Geopark also in border regions, for example, with Russia or with other neighbouring countries, in order to strengthen relations on the one hand, and on the other hand just peace building, what we call in English now very popular term peace building. Does it even make sense to build on the border areas? Or is it better to build inside first?'**

There are already some facilities in the border area around which infrastructure has been developed. But in principle, it would not be a bad idea. If there are jobs there, people will go there. The borders need to be better protected anyway; the problem is that there is not enough population in the regions concerned. This applies above all to the northern regions. If there are enough facilities of this kind here, that is good, but I doubt that this is the case.
In this context, geological facilities are meant.

Question eight is: **'Which department should be involved in the development of Geoparks? Is it exactly the Ministry of Nature Protection or tourism, in your opinion?'**

There is no Ministry of Tourism. They believe that the Geopark issue should be left to the Institute of Geography. This is mainly because it is the institute's responsibility to research the uniqueness of Geoparks. There is a whole range of characteristics.

Before stepping onto the world stage, we must first create something unique in Kazakhstan. Then you can shout out loud that you have something.

The Ministry of Nature Protection must also be involved, as all natural resources are subject to its authority. The Institute of Geography must definitely be involved, as only it can determine the intrinsic value of Geoparks.

Question nine is: **'Yes, I totally agree. Because I was also in the department of GIS, in the department of landscape studies. So I have an idea of what the Institute of Geography does. The Institute of Geography, as far as I understand, is supported by the state. Including funding. If funding is allocated for this subject, then you do research. And so to speak, on your own, as discoverers, so to speak.'**

These people would be very enthusiastic. The thing is, they have many projects.
They have a whole apparatus of doctoral students and students who would work on their own stuff. Nevertheless, they attach importance to new projects at least roughly matching their topics. Usually, they work on their own topics, but they have no connection to Geoparks.

If the topic of Geoparks turns out to be relevant, funding will also be provided for it. Then, of course, research would also be carried out in this project. However, they currently have other instructions and little free time, so they cannot deal with all topics. Unfortunately, that is how it is.

The interview suggests that experts at the institute have correctly assessed the potential for Geoparks in Kazakhstan, but this cannot be said for other topics. After the interview, the author noticed that there is a possibility that Geopark topics are not being correctly addressed (or that there is no desire/funding to address them). This can be seen from the references to existing national parks and things like UNESCO World Heritage Sites, both of which have nothing to do with Geoparks at first glance. The impression is given that the situation is fine as it is and that if there were a need for change, the government would take care of it and set up a project and fund the research since every scientific institution in the country is dealing with funding and staff problems, so that they can hardly come after their everyday duties as an institute.

Interview with the staff at Burabay National Park Headquarters

The interview was conducted by chance on a Saturday in front of the national park administration office in Burabay. As already mentioned in the methodology section, this was a spontaneous stroke of luck, as no one was available at the national park administration office on the previous Friday. At the end, there is a brief evaluation of the interview.

I am doing research and I would like to ask you a couple of questions about the creation of Geoparks in Kazakhstan and potential territory. What do you think about it, is it possible to open a potential Geopark on the territory of Burabay National Park?

Well, in general, this issue was once raised in 2018-2019, that is, they tried to convert our national park into a Geopark. It did not work out because our national park is under the jurisdiction of the Presidential Administration of Affairs and the Republic, and to create a Geopark, it is necessary that the park belongs to the local executive bodies, that is, was a regional park. There was such a delay in the legislation, because of this it did not work out, so we received only the status of a biosphere reserve.

What do you think, is it possible to open a Geopark on the territory of a national park? Will, for example, the opening of a Geopark on the territory of a national park have a positive or negative impact on tourism?

Well, of course, it will have a positive impact. If it will be a Geopark, it will be a world-class park. That is, foreign tourists will learn more and more about our country as a whole and about our national parks, that is, it will attract tourists here.

And how do you think, for example, there is a network of UNESCO world Geoparks, which are part of the global chain of Geoparks, is it possible, with the support of UNESCO, with the support of foreign companies or foreign agencies to open a Geopark at all, or does it also depend only on local permission in view of the opening of a biosphere reserve here?

I think so, if foreigners are also interested, as if with the support of UNESCO, why not, I think our authorities will also support it. As if on the territory of Kazakhstan, because there is not a single Geopark, and in principle it will be possible, I think.

Will the Geopark develop here all year round and attract tourists or only seasonally?

I think all year round. All the same, we are going to this, so that we have a year-round holiday, that is, and winter holidays were and summer holidays were, so that not only seasonal.

And in general, what is the flow of tourists in the territory of Burabay National Park today?

So to date about eight hundred thousand have already visited or more even now I cannot say exactly, but every year the number of visits is increasing.

And how do you consider the development of the trend of tourism, exactly from the side of the Geopark? Will it lead to improvement or in the status of a national park is already well enough to develop the level of tourism?

I think, if there will be a Geopark, then there will be more emphasis on eco-tourism. To this extent, yes it will also have a positive impact, that is, it will be more inculcated, not just tourism for recreation, but ecotourism, that is ecological tourism: come, look, explore, relax and at the same time enjoy nature.

Please tell me how you generally feel about the opening of potential Geoparks in Kazakhstan, as one of the countries that could be the first in Central Asia to open a Geopark.

Positive, of course, positive. It is a rating of our whole country, it will be very good in fact, and I think the Ministry of Ecology and Natural Resources will also support the work in this direction.

From a technical point of view, there are few obstacles to establishing a Geopark in Burabay. There are difficulties with jurisdiction between Burabay and Astana, but these are not insurmountable. The management is openly convinced of Burabay's potential as a Geopark. It is noted that classification as a UNESCO Global Geopark could prove to be a boost for tourism, especially as Burabay is open to tourists all year round. It was noted that awareness of eco-tourism would also change in connection with a Geopark. Locals are confident that the relevant ministry will support the Geopark project in the future.

<u>Short Interview with the guide person at Burabay Lake</u>

The interview was conducted during a stay at Burabay lake at the same day, the National Park was visited. At the end, there is a brief evaluation of the interview. Due to the shortness the interview was fully put into the text without adding it to the appendix.

Are there a lot of tourists?

Tourists come all the time. A lot of people from Kazakhstan, there are also foreign tourists.

And if it's off season, like now?

In the off-season also a lot of people come from neighbouring cities for the weekend. From Astana all the time, from Karaganda sometimes.

Whats about the presence of a large number of tourists in the countryside?

Well, here it can be especially noticeable. There used to be, for example, more lakes, more fish. And now there is a reduction. There are only 17-18 lakes left. For example, in cafes here they sell fish and shrimps. Tourists come here and think it's local, fresh fish. But it's often imported.

Or we give the lake a third name, like iPhone Lake, because they drop a lot. Pay attention to the stones. Everyone should know who was here, they start sketching it all, marking it. And then it can't be scrubbed or cleaned.

And there were other times when fires were provoked. You can see a yellowing strip of forest - this is the consequences of the fire of 1997. The forest burned for about two weeks at that time. Not only firefighters, but also local men, students from the neighbourhood extinguished the fire. And now there are black burnt areas and literally in this valley in the middle of the sand. Everything is changing around here, of course.

Tourists visit the area frequently, including many from within Kazakhstan and some from abroad. Even during the off-season, people come on weekends from nearby cities like Astana and Karaganda. However, the growing number of tourists has had visible environmental impacts. There used to be more lakes and fish, but now both have declined — with only 17–18 lakes remaining. Cafes often serve imported fish, which some tourists mistakenly believe is local. Tourism has also led to littering and damage to natural sites, such as people marking

stones or polluting lakes (e.g., nicknaming one “iPhone Lake” due to dropped phones). A major fire in 1997, worsened by human activity, burned for two weeks and left lasting scars on the forest. The area is visibly changing due to both natural and human factors.

Short interview with the landlord in Basshi

The interview was conducted during a short break in the expedition. At the end, there is a brief evaluation of the interview. Due to the shortness the interview was fully put into the text without adding it to the appendix.

Do many tourists stay in your house?

Yes, mostly everyone who comes to see Altyn-Emel from our side stays here in the houses. There are different tourists. We know tour organisers and they take tourists to us. Some just stop for a meal, some stay overnight. Sometimes, of course, some come and stay on their own. All guests are welcome. Even film-makers from Russia have come to us. All actors, actresses, all those who made films stayed in our village. We are happy to show our hospitality. People from different countries stay in my house.

Today we are staying at your house from Germany, Italy and Ukraine.

Come, come again. We have enough room for everyone. There are not so many people now in the hot season. Now it will be cooler in September, it will be very beautiful here. Then there will be a lot of people here.

Do local tourists come here more often?

Yes, in September-October buses will come here. They more often do not stay overnight. There are a lot of people from Almaty, so they come for one day and go back in the evening. But sometimes foreign guests also come. They are interested in us, they like it.

The landlord hosts many tourists visiting Altyn-Emel, including both foreign and local visitors. Most guests are brought by tour organizers, though some come independently. Visitors often stop for meals or stay overnight, and the host welcomes everyone warmly, even Russian filmmakers have stayed in the village. Guests have come from countries like Germany, Italy, and Ukraine. The area sees fewer tourists during the hot season, but many come in cooler months like September and October, especially on day trips from Almaty. Foreign visitors are particularly interested and appreciative of the local hospitality.

5. Protected areas of Kazakhstan

For the sake of completeness, this very brief chapter will discuss the various protected areas that exist in Kazakhstan. Kazakhstan has a long tradition of establishing and operating protected areas. From the Khanate era, through part of the Russian imperial occupation, to free Kazakhstan and the Soviet Union, only to end up once again in a free and independent Kazakhstan, the protection of natural resources runs like a thread through the country's history. Some of these protected areas have already been discussed in the chapter on definitions. If certain protected areas correlate in any way with the Geoparks planned by the author, the relevant areas will be discussed in situ in the text. A complete explanation of all protected areas in Kazakhstan is not part of this work and would go beyond the scope of this paper. This chapter is intended merely to provide an overview of existing protected areas.

Protected areas in Kazakhstan

In total, there are six different types of protected areas or objects worthy of protection in Kazakhstan. The most internationally renowned and nationally important category is that of national parks, of which there are thirteen in Kazakhstan. In addition, there are ten special reserves, also known as ‘zapovedniks’ in Russian. Furthermore, there are six nature reserves and five strictly protected landscapes. The protection categories also include the numerous Kazakh botanical gardens, of which there are seven in total (the names of the protected areas can be found in Figure 18 or on the map in Figure 19, MINISTRY OF ECOLOGY AND NATURAL RESOURCES OF THE REPUBLIC OF KAZAKHSTAN 2024: 66).

UNESCO protected areas in Kazakhstan

Kazakhstan has a total of twelve UNESCO-recognised biosphere reserves. It also has six UNESCO World Heritage Sites. There are currently thirteen entries on Kazakhstan's tentative list. A significant proportion of these are sites featuring petroglyphs (UNESCO 2025b; KAZAKHSTAN NATIONAL COMMITTEE FOR THE UNESCO PROGRAMME “MAN AND THE BIOSPHERE” 2025b).

Geoparks unlike protected areas

During the research, there was one aspect that came up repeatedly in relation to Geoparks. This was mentioned by both interviewees and other people. This is the status of what Geoparks are. Even in scientific circles in Kazakhstan, it is often said that one of the main reasons for opening a Geopark is that it allows the geological heritage to be protected and preserved, which is not wrong but Geoparks are also often mentioned in the same breath as national parks or other protected areas. This leads to the effect that in some circles, there is a persistent claim that Geoparks belong to the spectrum of protected areas, and this opinion is occasionally expressed in public discussions, especially with non-experts. This misinformation sometimes leads to Geoparks and their function being perceived completely differently by the population. This is especially true when the idea of a Geopark is proposed for a particular area, with many people immediately dismissing it. The reason for this is often the fear of economic restrictions, as a whole range of economic activities (e.g. agriculture, resource utilisation) are prohibited in most protected areas in Kazakhstan and violations are severely punished. Once this misinformation has been internalised, it can be difficult to win over uninformed people to the idea of establishing Geoparks. Fortunately, it is also becoming apparent that at least the scientists who are actively involved in Geoparks and campaigning for them are raising their voices to make it clear that Geoparks are not specially protected areas to (NIGMATOVA ET AL. 2024: 3) and that the general population need not fear for their economic livelihoods or other restrictions when the topic of Geoparks comes up in their region. On the contrary, the local population can benefit greatly from the concept if it is applied correctly.

National Parks	Strict nature reserves (Zapovedniks)	Nature reserves	Protected landscapes
Altyn-Emel National Park	Aksu-Dzhabaglinsky	Irgis-Turgay	Water area of North Caspian Sea
Bayanaul National Park	Almaty	Akzhuyik	Zhusandaly
Buiratau National Park	Markavolsky	Semey Ormany	Kenderly-Kayasan
Burabay National Park	West Altai	Ertis Ormany	Arys and Karatau
Charyn National Park	Naurzum	Alty-Daza	Southern Kazakhstan
Ile-Alatau State National Nature Park	Korgalzhyn	Ile-Balkash	
Karkaraly National Park	Alakol		
Katon-Karagay National Park	Ustyurt		
Kokshetau National Park	Barsan-Kelmes		
Kolsay Lake National Park	Karatau		
Sayram-Ugam National Park			
Tarbagatai National Park			
Zhongar-Alatau National Park			
Botanical gardens	**UNESCO Biosphere reserves**	**UNESCO Worldheritage Sites**	**UNESCO Worldheritage Tentative List**
Almaty Main Botanical Garden	Korgalzhyn	Cold winter deserts of Turan	Abylaikit Monastery
Astana	Alakol	Mausoleum of Khoja Ahmed Yasawi	Cultural landscape of Ulytau
Altai	Katon-Karagay	Saryarka - Steppe and Lakes of Northern Kazakhstan	Northern Tian-Shan (Ile-Alatau State National Park)
Zhezkazgan	Akzhayik	Silk Roads: Chang'an-Tianshan Corridor	Petroglyphs within the Archaeological Landscape of Arpauzen
Mangyshlak	Aksu-Zhabagly	Tanbaly Tas petroglyphs	Petroglyphs within the Archaeological Landscape of Eshkiolmes
Ili Botanical Garden	Barsakelmes	Western Tien-Shan	Petroglyphs within the Archaeological Landscape of Kulzhabasy
Issyk dendrological Park	Karatau		Petroglyphs within the Archaeological Landscape of Sauyskandyk
	Altyn Emel		Rocky Mosques of Mangyshlak Peninsula
	Charyn		Silk Roads: Early Period (Prehistory)
	Zhongar		Silk Roads: Fergana-Syrdarya Corridor
	Almaty		Silk Roads: Volga-Caspian Corridor
	West Altai		Turkic sanctuary of Merke
			Ustyurt: Natural Landscape and Aran Hunting Traps

Figure 18: List of protected areas in Kazakhstan (Source: Own Design)

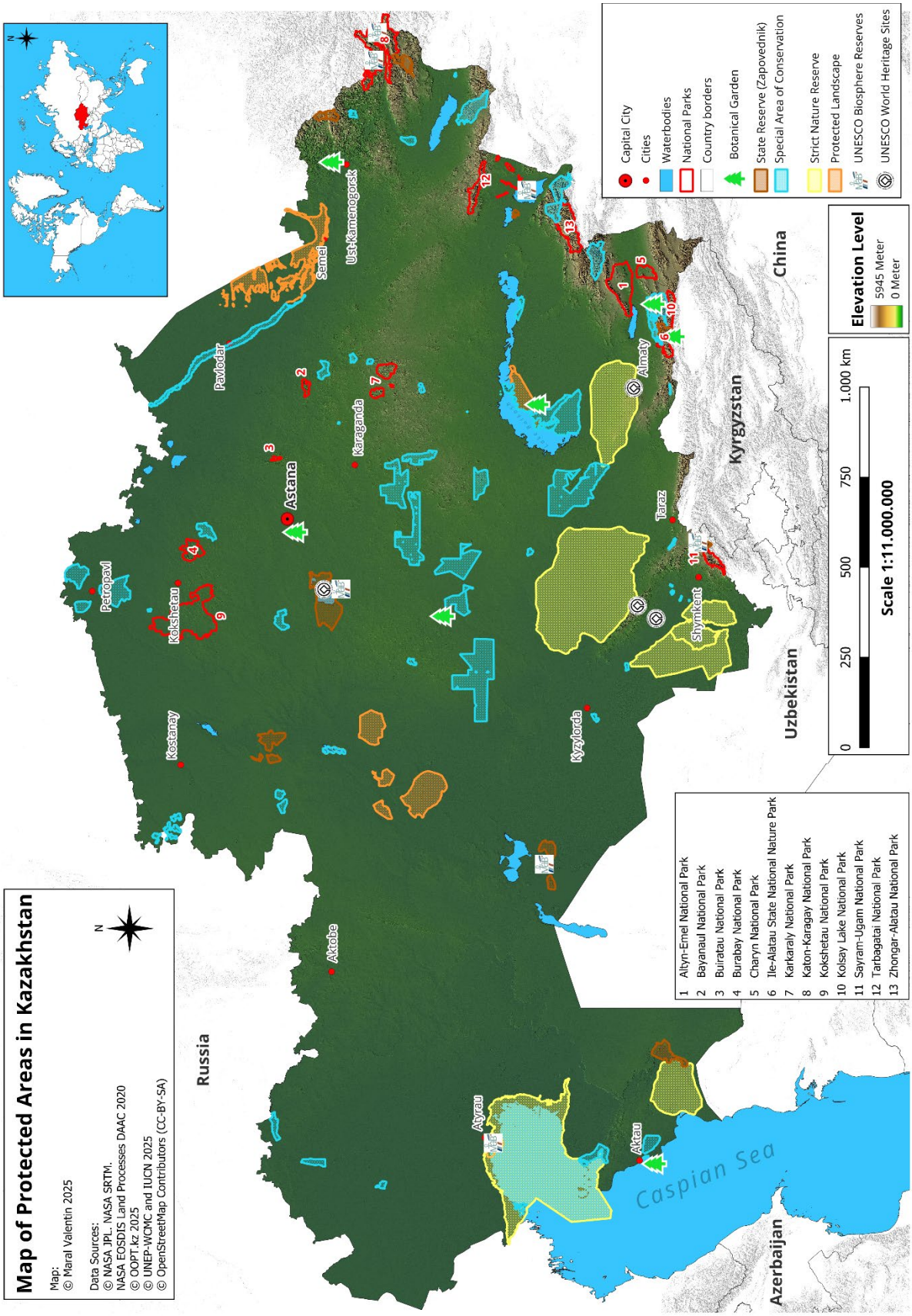

Figure 19: Map of protected areas within Kazakhstan (Source: Own Design).

6. Challenges in Geoparks creation

Since 1992, Khazakhstani scientist Ilya Fishman has been paying close attention to the creation and development of Geoparks in Kazakhstan. In this regard, he saw the significant role that Geoparks could play for the territories of Kazakhstan.

Although research was presented, for example, at the 'First Conference on the Creation of Geoparks in Kazakhstan' in August 2018 in the city of Aktau, this did not lead to more 'decisive action' and did not encourage the development of this topic outside the scientific community.

This experience shows that the creation of a Geopark in Kazakhstan faces certain obstacles in the form of a lack of research on the topic, which has prevented the full significance of Geoparks from being realised, a lack of qualified specialists, unclear legislation on the management of Geoparks, a lack of dedicated funding, and an unprepared infrastructure.

This chapter will examine in more detail the obstacles and problems facing the creation of Geoparks.

6.1. Administrative jurisdiction – Problems and uncertainties

First of all, there is an open question as to which agency should be responsible for the creation and management of the Geopark. At this stage, there is no clarity regarding the regulation of the status of the Geopark at the legislative level.

Currently, the protection and management of protected areas is under the authority of the Ministry of Ecology and Natural Resources, within the Department of Forestry and Wildlife. The activities of this committee include the management of state control, protection and conservation of forests; management of the reproduction and use of forests and flora; management of fauna and hunting; and management of specially protected natural areas

(MINISTRY OF ECOLOGY AND NATURAL RESOURCES OF THE REPUBLIC OF KAZAKHSTAN 2025).

However, “real wildlife protection is carried out in areas that have legal entity status: in 10 nature reserves, 7 national parks and two nature reserves. Most of the country's protected areas are managed by the Forestry and Hunting Committee of the Ministry of Agriculture of the Republic of Kazakhstan, botanical gardens are managed by the Ministry of Education and Science of the Republic of Kazakhstan, and zoos are managed by the Ministry of Culture, Information and Public Agreement of the Republic of Kazakhstan. Protected areas (with the exception of the North Caspian) are under the operational management of the Production Department of Okhotzooprom, which is a self-financing subdivision of the Forestry and Hunting Committee of the Ministry of Agriculture of the Republic of Kazakhstan. The Burabay National Park in the Akmola Region is subordinate to the Office of the President of the Republic of Kazakhstan (SADVAKASOVA 2012: 111).

This leads to misinterpretation about which agency is responsible for managing the territory with the status of a Kazakhstani Geopark. If viewed from the perspective of a protected area, then management falls to the Ministry of Ecology and Natural Resources.

If cultural significance based on geological heritage is taken into account, then this could be handled by the Ministry of Culture and Information of the Republic of Kazakhstan.

However, according to Professor Nigmatova, in Kazakhstan, the idea of a Geopark should be promoted from “the bottom to top” concept, on the initiative of the people living in the area (MULENKOVA 2024). Is this a reason to transfer the creation of the Geopark to the Ministry of Education of the Republic of Kazakhstan, since in order to implement the concept from “the bottom to top”, it is necessary to raise awareness and promote the idea of a Geopark at the university level or organise training for local residents of the potential Geopark territory?

Or, taking into account that land registration is legally under the jurisdiction of the Ministry of Agriculture, the issue of designating the territory as a Geopark also belongs to that ministry.

Finally, considering one of the objectives of creating a Geopark, which is to attract tourists, should the Ministry of Tourism and Sports of the Republic of Kazakhstan be responsible for the creation of a Geopark.

Ms Nigmatova made an equally important and clarifying statement on how Geoparks are handled in Kazakhstan and how the image of Geoparks has changed over time (MULENKOVA 2024):

> *'At first, we didn't quite understand how it worked. We thought it was something like a biosphere reserve or a national park, i.e. a specially protected natural area (SPNA) with limited access. As we gathered more information, we realised that a Geopark is not a SPNA, but a modern form of sustainable regional development and sustainable tourism.'*

6.2. Financial issues

Due to the uncertainty of its status, it is unclear which source should finance the idea of creating a Geopark.

One of the problematic factors in the creation of a Geopark in Kazakhstan is the lack of study and in-depth research on this topic. This, in turn, affects the allocation of necessary funding. In order for government agencies or potential stakeholders to begin allocating funds for research on this topic, it is necessary to demonstrate the value and benefits of creating Geoparks. This represents a "vicious circle": there is no funding because the topic has not been studied, and the topic has not been studied because there is no funding for research.

So how can this vicious circle be broken? The specialist of Institute of Geography of Kazakhstan in interview for current research had confirmed the importance of initial funding for studying the project topic as a Geopark. Without a government contract to study this topic, the Institute of Geography will not conduct this research.

The second obstacle from a financial perspective is the phenomenon of the "resource curse" and "Dutch disease".

Kazakhstan's economic model demonstrates that more than 60% of the country's exports come from mineral resources.

Figure 20: Mineral export from Kazakhstan in 2024 (Source: Own design according to QAZSTAT 2024)

This distribution of resources determines the priority of investments, including infrastructure investments, primarily in mineral extraction facilities.A similar effect can also be observed in the labour market. High wages in the oil industry give it a competitive advantage over other industries, such as tourism. As it is demonstrated on the histogram with higher average monthly

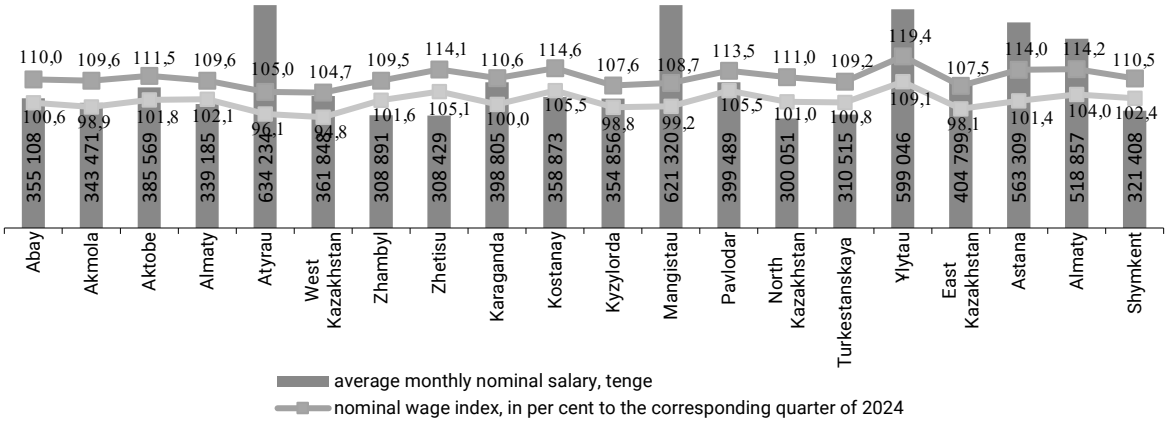

Figure 21: Avarage mothly salary per Oblast in Kazakhstan in 2024 (Source: QAZSTAT 2025c)

Average monthly salary by types of economic activity in the first quarter of 2025*			
	Average monthly nominal salary		
	tenge	as a percentage of	
		previous quarter	corresponding quarter of 2024
For all types of economic activities	423 133	97,3	110,7
Agriculture, forestry and fishery	248 937	83,8	117,3
Industry	**624 428**	101,0	114,2
Mining and quarry development	**981 362**	108,4	113,6
Manufacturing industry	**519 020**	98,2	115,2
Supply of electricity, gas, steam, hot water and conditioned air	416 438	86,4	115,9
Water supply; wastewater disposal; waste collection, treatment and disposal, pollution elimination activities	285 989	93,6	110,3
Construction	485 852	89,8	101,5
Wholesale and retail trade; repair of cars and motorbikes	396 444	99,1	115,9
Transport and storage	579 770	101,2	113,5
Provision of accommodation and catering services	348 894	96,5	104,3
Information and communication	859 822	107,7	131,3
Financial and insurance activities	855 468	90,6	109,6
Transactions with immovable property	330 637	101,5	114,7
Professional, scientific and technical activities	597 411	85,6	112,3
Administrative and support services activities	349 519	93,9	100,3
Public administration and defence; compulsory social security	362 015	94,2	110,1
Education	**302 428**	97,2	106,1
Public health and social services	312 758	93,4	106,2
Arts, entertainment and recreation	284 938	94,7	116,1
Provision of other services	330 768	99,8	112,6
** Excluding small enterprises engaged in entrepreneurial activities.*			

Table 2: Average monthly salary by types of economic activity in the first quarter of 2025 (Source: QAZSTAT 2025c)

salaries in Atyrau and Mangistau (oil, gas), Ulytau and East Kazakhstan (minerals). This gives a competitive advantage over other industries, such as tourism. In general, it is to be seen that investments are increasingly directed towards “quickly profitable businesses”. In oil-producing areas and areas with mineral deposits, infrastructure is rapidly built and organised. This was the case, for example, with cities that were built on the basis of mineral resources especially during Soviet time, and unfortunately these cities are losing its relevance nowadays when minerals have been extracted. Also, with the correct presentation of the significance and potential of a Geopark, it is possible to organise infrastructure nearby.

In this regard, it seems logical to adhering to the methods already described for overcoming the resource curse. An example of this described in Mitrofanov's work declares that ‘significant component of breaking the resource curse is issues related to the development of the non-resource sector. It is possible to produce a lot of oil and gas and still become a diversified country with a developed economy. For this to happen, non-resource industries must develop at a rapid pace (MITROFANOVA u. MITROFANOV 2023: 32).‘ The solutions to it could be partially investment from the profit of oil and gas sector to creation of Geopark.

6.3. Infrastructural obstacles

The development of Geoparks in Kazakhstan faces a number of infrastructure challenges. Even though in recent years, large-scale road infrastructure modernisation programmes have been implemented (e.g. the Nurly Zhol project), which are gradually improving access to remote regions, however, the problem persists at the local level, as access roads to promising geological sites often pose an obstacle due to their lack of quality or absence altogether.

The issue of housing infrastructure is also ambiguous. Given the country's vast territory, long distances between destinations, and low density it is not possible to stay for longer periods, which is one of the principles of a Geopark, where tourists are expected to stay for possibilist extended period.

Figure 22: Experience of the breakdown of the vehicle travelling to Altyn Emel due to problems on the road under construction (Source: Own photo/ Google Maps)

Figure 23: Experience of accomodation in Basshi village near Altyn Emel National Park (Source: Own photos)

Even though, it needs to be admitted that there are already possibilities for accommodation, where are involved local citizens. Although it is theoretically possible to accommodate tourists in rural settlements, most of these settlements do not have the potential to handle large seasonal tourist flows.

6.4. Social issues

Taking to consider the concept of “bottom-to-top” is main process for creation of Geopark, it should be also highlighted the absence of study and broadening this topic to the mass. The lack of research on the topic of Geoparks in Kazakhstan means that the population does not see opportunities for its own initiative in the development of Geoparks, because it does not fully understand its role. To make this happen, research needs to be undertaken to vividly demonstrate the mechanisms for organising Geoparks and the role of local residents in this process.

As well as financial obstacle the absence of human resources provides social issues in the process of creation of Geopark. The formation and sustainable functioning of Geoparks in Kazakhstan is determined by the resolution of personnel issues, which manifest themselves in an acute shortage of specialists with interdisciplinary expertise at the intersection of geological and geographical sciences, ecology, tourism management and environmental education. The systemic nature of the problem is due to structural imbalances in the national economy, where the dominance of the raw materials sector (oil and gas, mining) creates a dissonance between market incentives for skilled personnel and the needs of the developing geotourism sector.

In summary, it can be stated that legislative, economic, infrastructural, social, and other considerations may collectively hinder the establishment of a Geopark in Kazakhstan. However, the cooperation and collaboration between the state, stakeholders, the scientific community, businesses and the local population could be a key factor in the implementation of the Geopark concept.

7. Potential Geoparks in Kazakhstan – A case study

Determining potential Geoparks involves the evaluation of various criteria to identify areas with significant geological heritage, educational value, and sustainable tourism potential. The selection process typically considers a combination of geological, ecological, cultural, and community factors. Continuous and comprehensive assessments are crucial to ensure that

designated Geoparks fulfill the criteria and contribute positively to both conservation and local development.

UNESCO Global Geopark Network (UGGN) Criteria: The criteria cover geological significance, protection and conservation, education and public awareness, sustainable development, and management (McKeever u. Patzak 2016: 23–30).

Geological Significance: The primary criterion for potential Geoparks is their geological importance. This includes the presence of unique rock formations, geological processes, and landforms that tell a compelling story about the Earth's history. Geoparks should feature a diverse range of geological features, such as mountains, canyons, caves, or fossil sites, providing visitors with a comprehensive understanding of the Earth's dynamic processes (Tapiador 2008: 61).

Educational Value: Geoparks are chosen based on their educational potential. The area should offer opportunities for scientific research and interpretation, allowing visitors to learn about geological phenomena, biodiversity, and the interconnectedness of natural systems. The educational value extends to cultural aspects, where Geoparks may highlight the relationship between geological features and human history (Tourtellot 2023: 42).

Conservation and Biodiversity: A crucial criterion is the commitment to conservation and the protection of biodiversity. Potential Geoparks should demonstrate a dedication to preserving natural ecosystems, habitats, and rare or endangered species. Conservation efforts may include sustainable land management practices, wildlife protection measures, and the restoration of degraded areas (Girault 2020: 37, Brocx u. Semeniuk 2015: 49).

Cultural and Historical Significance: Geoparks often encompass cultural and historical elements, linking human heritage to geological features. Sites with archaeological significance, ancient rock art, or cultural landscapes are considered valuable. The integration of cultural and historical narratives enhances the overall visitor experience and fosters a sense of connection between people and their geological surroundings (Bailey 2009: 19, Fernandes 2025: 66–67).

Community Involvement and Support: Successful Geoparks engage local communities in their development and management. The commitment and involvement of local residents are essential criteria. This includes community participation in decision-making, sustainable tourism initiatives that benefit local economies, and the preservation of indigenous knowledge and traditions related to the geological features (GEOPARK MANAGEMENT TOOLKIT 2025, STOFFELEN 2020: 101).

Tourism Infrastructure and Accessibility: Potential Geoparks should have adequate tourism infrastructure to accommodate visitors safely and responsibly. This includes well-designed trails, visitor centers, and interpretive facilities. Accessibility is another criterion, as Geoparks should be reachable by various means of transportation while minimizing the environmental impact (CHEN ET AL. 2015: 258).

Sustainability: Sustainable development is a key criterion, emphasizing the responsible use of natural resources, energy efficiency, waste management, and eco-friendly tourism practices. Geoparks should contribute positively to the economic, social, and environmental sustainability of the surrounding communities (PÁSKOVÁ 2022: 66).

The determination of potential Geoparks involves a multidimensional assessment, considering geological, educational, conservation, cultural, community, and sustainability factors. The integration of these criteria ensures that designated Geoparks are not only geologically significant but also contribute positively to local communities and the broader goals of environmental stewardship (RUBAN 2016: 207).

The Republic of Kazakhstan harbors a wealth of geological wonders, offering significant potential for the establishment of Geoparks. These areas, characterized by unique geological features, have the capacity to serve as focal points for tourism, education, and the preservation of the country's rich geological heritage.

Charyn Canyon, often referred to as the "Grand Canyon of Kazakhstan," stands out as a prime candidate for a Geopark. Its dramatic red sandstone formations and distinctive rock structures

showcase millions of years of geological processes, making it an ideal site for geological exploration and educational initiatives (NIGMATOVA ET AL. 2021: 103).

The Altai Mountains, shared with neighbouring countries, present a diverse geological tapestry with high mountain ranges, glaciers, and exceptional rock formations. Establishing a Geopark in this region could provide a platform to delve into the geological evolution of these mountains and highlight their significance in the broader context of Earth's history (ÖZTÜRK ET AL. 2015: 3–5).

Ile-Alatau National Park, nestled near Almaty, encapsulates a section of the northern Tien Shan Mountain range. With alpine meadows, glaciers, and a variety of geological formations, this area holds potential for a Geopark focused on mountain geology, educating visitors about the forces that shaped these landscapes (ALIYEVA ET AL. 2020: 463–466, USSENOVA u. AKTYMBAEVA 2022: 67–68, ÖZTÜRK ET AL. 2015: 7–8).
The Kazakh Uplands, or Saryarka, with its vast steppe expanses and unique geological features, offers another promising Geopark prospect. Here, the geological narrative intertwines with the cultural heritage of the region, providing an opportunity to showcase the interconnectedness of geology and human history (SAPAROV ET AL. 2018: 36–39).

The Kolsai Lakes, situated in the Northern Tien Shan, boast picturesque landscapes surrounded by mountains. This setting offers an opportunity for a Geopark to explore the geological processes that shaped the region, with an emphasis on the interaction between geological features and the formation of the glacial lakes (SAKYPBEK ET AL. 2019: 156, ERDAVLETOV 2015: 454).

Balkhash Lake, encompassing diverse landscapes from deserts to steppes, presents a unique geological context. A potential Geopark in this area could delve into the geological history of the lake and its surroundings, shedding light on the natural processes that have sculpted this diverse landscape (SALA ET AL. 2020: 144–147, MISCHKE ET AL. 2020: 268).

Tamgaly Tas, a UNESCO World Heritage Site featuring ancient petroglyphs and distinct rock formations, stands as a potential Geopark where geological exploration meets cultural history.

Such a Geopark could unravel the geological processes behind the rock formations while providing insights into the region's rich cultural heritage (DEOM 2015: 157, ROGOZHINSKY u. HYGEN 2011: 17–20).

Bayanaul National Park, known for its granite rock formations and diverse landscapes, holds Geopark potential. By focusing on the geological history of the granite formations and the broader natural history of the region, a Geopark here could offer educational and recreational opportunities for visitors (YESSIMOVA ET AL. 2025: 5–7).

Establishing Geoparks in these areas demands a holistic approach, integrating scientific research, community engagement, and sustainable tourism development. By doing so, Kazakhstan has the potential to showcase and conserve its geological heritage while providing enriching experiences for those exploring these geological wonders.
The creation of new Geoparks holds paramount importance in the realms of conservation, education, sustainable tourism, and community development. These designated areas, showcasing significant geological features, contribute to a range of societal, environmental, and economic benefits.

First and foremost, Geoparks play a crucial role in the preservation of Earth's geological heritage. identifying and protecting unique geological formations, landscapes, and processes, Geoparks act as living museums that conserve the planet's natural history. The establishment of new Geoparks becomes a proactive measure in safeguarding valuable geological features from potential threats such as urbanization, industrialization, and irresponsible land use (FAUZI u. MISNI 2016: 677–678).

Furthermore, Geoparks serve as dedicated spaces that protect, showcase, and interpret significant geological features. These areas are carefully selected to represent the Earth's diverse and unique geological history, providing a platform for conservation efforts and public engagement. At the core of their mission, Geoparks act as custodians of geological sites, safeguarding them from potential threats such as urbanization, industrial development, or irresponsible human activities. By designating specific areas as Geoparks, authorities can implement protective measures to ensure the long-term conservation of geological formations,

landscapes, and processes. They contribute significantly to raising awareness about the importance of Earth's geological heritage (PORSHNOV ET AL. 2019: 154–155).

Through interpretive centers, educational programs, and guided tours, Geoparks facilitate the dissemination of knowledge about geological processes, the evolution of the Earth, and the significance of specific geological features. This educational aspect not only promotes scientific literacy but also fosters a sense of appreciation and responsibility for the planet's natural history. The interpretive efforts within Geoparks extend beyond educational purposes to include the celebration of geological diversity. Geoparks showcase a range of geological features, from mountains and canyons to caves and fossils, allowing visitors to witness the Earth's dynamic processes and the evidence of its geological evolution. This visual and experiential aspect enhances the public's understanding of the intricacies of geological heritage. Scientific research is a critical dimension of Geoparks' role in preservation. These areas serve as living laboratories where scientists can conduct studies on geological phenomena, contributing valuable data to the broader scientific community. The research conducted within Geoparks enhances our understanding of Earth's geological processes, environmental changes, and the interactions between geology and other natural systems. Geoparks also play a crucial role in fostering sustainable tourism. By attracting visitors interested in geological wonders, Geoparks contribute to the economic viability of local communities. Sustainable tourism practices within Geoparks prioritize minimal environmental impact, ensuring that the influx of visitors does not compromise the very geological features they come to admire. The global network of Geoparks, often supported by organizations such as the Global Geoparks Network (GGN) under UNESCO, emphasizes international collaboration in the preservation of geological heritage. Shared knowledge, best practices, and collaborative initiatives contribute to a collective effort to conserve the Earth's geological diversity and promote responsible stewardship of natural resources. In essence, Geoparks function as guardians of Earth's geological heritage, marrying conservation with education, research, and sustainable tourism. By preserving and showcasing the planet's geological wonders, Geoparks play a pivotal role in ensuring that future generations can continue to marvel at, learn from, and appreciate the incredible geological diversity that defines our world. Education stands out as a fundamental pillar of Geoparks. These areas offer dynamic outdoor classrooms where visitors, ranging from school students to lifelong learners, can engage with the Earth's geological evolution. The interpretive centres, guided tours, and

educational programs within Geoparks foster a deeper understanding of geological processes, environmental sustainability, and the interconnectedness of natural systems. This educational aspect not only enhances scientific literacy but also instils a sense of environmental responsibility in the broader population. Sustainable tourism is another key dimension of the importance of creating new Geoparks. As designated destinations for responsible tourism, Geoparks promote environmentally friendly travel practices and contribute to the principles of ecotourism. By attracting visitors interested in geological wonders, Geoparks become catalysts for sustainable economic growth, creating job opportunities, supporting local businesses, and diversifying regional economies (ARIMA 2016: 775–776, FARSANI ET AL. 2014b: 186, KHOSHRAFTAR 2013: 4–5, TOURTELLOT 2023: 42, AZMAN ET AL. 2010: 504–505).

Community development is intrinsically tied to the creation of Geoparks. Engaging local communities in the planning, development, and management of these areas ensures that the benefits of tourism are distributed equitably. Geoparks become sources of pride for local residents, fostering a connection between communities and their geological and cultural heritage. This involvement also encourages the transmission of indigenous knowledge and traditions related to the geological features within the Geopark. Furthermore, establishing new Geoparks contributes to scientific research and knowledge dissemination. These areas become living laboratories where scientists can conduct studies on geological processes, ecosystems, and the impacts of human activities. The research conducted within Geoparks not only advances our understanding of Earth's geology but also contributes valuable data to global scientific knowledge (STOFFELEN 2020: 101, DOUSIN ET AL. 2024: 393).

On a global scale, the creation of new Geoparks aligns with the efforts to address climate change and promote environmental conservation. Geoparks serve as beacons of sustainable land use and management, emphasizing the need to balance human activities with the preservation of natural landscapes. This commitment resonates with international initiatives focused on biodiversity conservation, sustainable development, and responsible tourism practices.

In summary, the importance of creating new Geoparks extends across multiple dimensions, encompassing conservation, education, sustainable tourism, community development, and scientific research. As humanity faces increasing environmental challenges, Geoparks emerge

as integral tools in fostering a harmonious relationship between people and the planet, celebrating and preserving the Earth's geological wonders for present and future generations (VALENTIN 2024: 126).

7.1. Geoparks as a new tool for tourism development in Kazakhstan

The promotion of Geoparks as a strategic approach to further developing the tourism sector in the Republic of Kazakhstan offers considerable potential for economic, ecological and cultural value creation. Geoparks, defined by their outstanding geological heritage and the combination of natural and cultural landscapes, enable the development of new target groups in the field of nature- and education-oriented tourism (UNESCO 2025d). Kazakhstan has an extraordinary geological diversity – including extensive mountain ranges, impressive canyons and striking rock formations – which provides a solid foundation for the establishment of Geoparks. This scenic and geoscientific diversity qualifies the country as an attractive destination for nature-loving travellers with a keen interest in geosciences, landscape ecology and sustainable nature experiences (CHLACHULA 2020: 1–7).

The promotion of Geoparks thus makes a significant contribution to diversifying Kazakhstan's tourism sector and strengthening its structural resilience in the context of global change processes (DOWLING 2013: 76). Beyond their added value for tourism, Geoparks fulfil an important educational function. Information centres, themed tours and interactive learning opportunities provide a clear understanding of complex geological processes and their influence on human civilisation (BRILHA 2018b: 323–335). As ‘open classrooms’, Geoparks offer low-threshold access to scientific education and promote a deeper understanding of the dynamics of Earth's history. At the same time, they offer researchers the opportunity to conduct geoscientific and ecological studies under real conditions(BRILHA 2018b: 323–335).

A central feature of the Geopark concept is its focus on sustainability and responsible tourism. ‘Geoparks play an important role in promoting geotourism, conservation, and education, while fostering sustainable local development’. The implementation of environmentally friendly infrastructure and participatory development models contributes to the long-term preservation of natural resources. Furthermore, the involvement of local communities in planning,

management and communication is a key prerequisite for the cultural authenticity and social acceptance of these initiatives. ‘Successful Geoparks are those that actively involve local communities in planning and decision-making processes, thereby fostering a sense of ownership and responsibility’ (ZOUROS 2004: 168). The resulting strengthening of regional identity goes hand in hand with positive socio-economic effects, such as job creation and the promotion of local value chains.

The connection of Kazakh Geoparks to international networks, in particular the UNESCO-supported Global Geoparks Network, opens up additional perspectives in terms of international visibility, scientific exchange and transnational cooperation in the field of geoscience tourism. In summary, it can be said that Geoparks are an integrative development tool that combines tourism diversification, environmental education, cultural preservation and regional development. Against the backdrop of Kazakhstan's unique geological conditions, their systematic promotion offers a forward-looking opportunity to sustainably profile the country as a geotourism destination with international appeal (KHOSHRAFTAR 2013: 4–5, AZMAN ET AL. 2010: 504–505, ARIMA 2016: 775–776, FARSANI ET AL. 2014b: 186, TOURTELLOT 2023: 42).

Sustainable Geoparks

Sustainable tourism is a fundamental pillar in the ongoing development of Kazakhstan’s tourism sector, particularly within the context of Geoparks. By prioritizing environmental responsibility, cultural preservation, and inclusive development, sustainable tourism ensures that current activities do not compromise the well-being of future generations. A key component of this approach is the conservation of natural ecosystems. In Geoparks, which showcase Kazakhstan’s diverse geological heritage, responsible infrastructure planning—such as the construction of low-impact trails and facilities—helps protect sensitive habitats while enabling access for visitors. Equally important is the meaningful involvement of local communities. When residents contribute to the planning and operation of Geoparks, their traditional knowledge and cultural perspectives are integrated into the visitor experience. Community participation fosters economic inclusion by generating employment, supporting local businesses, and reinforcing cultural identity. Geoparks also play a vital role in the preservation of intangible and tangible cultural heritage. Through respectful engagement with indigenous

practices and historical sites, tourism can strengthen cultural continuity while offering visitors authentic, place-based experiences. Integrating cultural elements into interpretation and programming enhances the depth and relevance of the tourism offering. Reducing tourism's environmental footprint also involves addressing transportation. Promoting the use of public transit, eco-friendly travel options, and low-emission infrastructure supports climate goals and models responsible travel behaviour. Lastly, education and awareness are essential for fostering a culture of sustainability. Geoparks can serve as platforms for environmental and cultural education, helping visitors understand the significance of the landscapes and communities they encounter. Informed tourists are more likely to engage in behaviours that support conservation efforts. In summary, sustainable tourism in Kazakhstan's Geoparks encompasses a holistic set of strategies—environmental stewardship, community empowerment, cultural preservation, and education—that collectively enhance the resilience and long-term value of tourism initiatives across the country (FARSANI 2012: 61–76, PÁSKOVÁ u. ZELENKA 2018: 52, ZHENG ET AL. 2021: 1–2).

Community involvement and Education in Geoparks

Cultural and community engagement constitutes a vital component of sustainable tourism development, particularly within the framework of Geopark initiatives in the Republic of Kazakhstan. Geoparks, which integrate geological significance with local cultural heritage, offer a unique platform for meaningful interaction between visitors and host communities. The active participation of local residents in the planning, management, and presentation of Geoparks ensures that traditional knowledge and cultural practices are authentically represented. This involvement enables communities to shape the narrative surrounding their heritage, transforming Geoparks into spaces of shared storytelling and place-based identity. Incorporating indigenous traditions into the tourism experience—through community-led tours, storytelling, or cultural performances—enhances visitors' understanding of the local way of life and promotes cultural appreciation. At the same time, such engagement fosters economic empowerment by creating employment opportunities for community members in guiding, interpretation, and visitor services. Geoparks also provide a platform for community-driven initiatives, such as the production and sale of traditional crafts. These activities contribute to local livelihoods while enriching the tourism offer with authentic cultural expressions.

Educational programs within Geoparks further support cultural and environmental awareness. By informing both residents and visitors about the region's geological and cultural significance, such initiatives cultivate a shared sense of responsibility for preserving local heritage. Ultimately, community and cultural engagement within Geopark tourism fosters reciprocal benefits. It enhances the visitor experience through meaningful cultural encounters and strengthens the social and economic fabric of local communities. This integrative approach contributes to long-term sustainability by aligning tourism development with the values and interests of the people who live within Geopark territories.
(IBRAKHIMOVNA u. BAKHTIYOROVNA 2020: 6, VAFADARI u. COOPER 2020: 357–373, MAMMADOVA ET AL. 2022: 1–2, DOUSIN ET AL. 2024: 393, STOFFELEN 2020: 101, KIKUCHI ET AL. 2011: 726, FERRARO ET AL. 2020: 501–502).

Infrastructure development in Geoparks

The development of sustainable tourism infrastructure is a key factor in the expansion of Geopark tourism in the Republic of Kazakhstan. Carefully planned construction measures that combine ecological, educational and economic objectives are necessary to adequately present the country's geoscientific heritage and protect it in the long term. An essential element of this is the creation of environmentally friendly hiking trails that enable safe and controlled access to geological attractions while contributing to the preservation of sensitive ecosystems. The integration of interpretive information along these routes – for example, through signage or digital communication formats – enhances the tourist experience with educational components and promotes a deeper understanding of geological processes. Visitor centres serve as central points of contact for exploring Geoparks. In addition to providing maps and background information, they are increasingly taking on educational functions, for example through interactive exhibitions, guided tours or workshops. In this way, they make a decisive contribution to environmental education and raising awareness of the interplay between geological, ecological and cultural development. The provision of sustainable accommodation is also of central importance. Environmentally friendly accommodation based on resource-efficient construction and operation methods not only meets international standards for responsible tourism, but also strengthens the long-term viability of the tourist use of Geoparks.

Suitable measures are also needed to improve accessibility. These include, in particular, traffic-calmed access roads, structured parking areas and connections to public or alternative transport systems. These contribute to reducing environmental impacts and promote holistic, sustainable access to the Geopark areas. Additional infrastructure, such as rest areas, picnic areas and waste disposal facilities, increase visitor comfort and round off the functional infrastructure offering. Infrastructure development also generates substantial socio-economic effects for the neighbouring communities. The active involvement of local stakeholders in planning and implementation processes ensures that measures are tailored to local needs, employment opportunities are created and a long-term sense of responsibility develops among the population. In summary, it can be said that strategically designed, environmentally friendly and socially embedded infrastructure development is an indispensable basis for establishing Geopark tourism in Kazakhstan. It combines the goals of environmental education, visitor management, regional development and resource conservation into an integrated overall approach that can contribute to the country's international positioning as a sustainable tourism destination. (PÉREZ-CALDERÓN ET AL. 2022: 10, ZOUROS u. VALIAKOS 2017: 970, MALATYINSZKI ET AL. 2025: 574).

International collaboration in Terms of Geoparks

International collaboration plays a pivotal role in advancing the tourism agenda of the Republic of Kazakhstan, particularly in the development of Geoparks. Through partnerships that transcend national borders, Kazakhstan can amplify the visibility and appeal of its unique geological and cultural assets. Engagement in global frameworks—such as the UNESCO-supported Global Geoparks Network—provides a platform for the exchange of scientific expertise, practical knowledge, and sustainable tourism models. This involvement strengthens Kazakhstan’s profile within the international geotourism community while supporting the harmonization of local practices with global standards. Collaborative research initiatives foster deeper understanding of geological phenomena and contribute to the broader knowledge base in earth sciences. Such academic exchange not only enhances scientific capacity but also informs the development of responsible tourism strategies across participating countries. A further benefit of transnational cooperation lies in joint promotional activities. Coordinated marketing campaigns enable participating nations to promote geotourism collectively, thereby reaching a wider and more diverse audience. These efforts enhance the global competitiveness

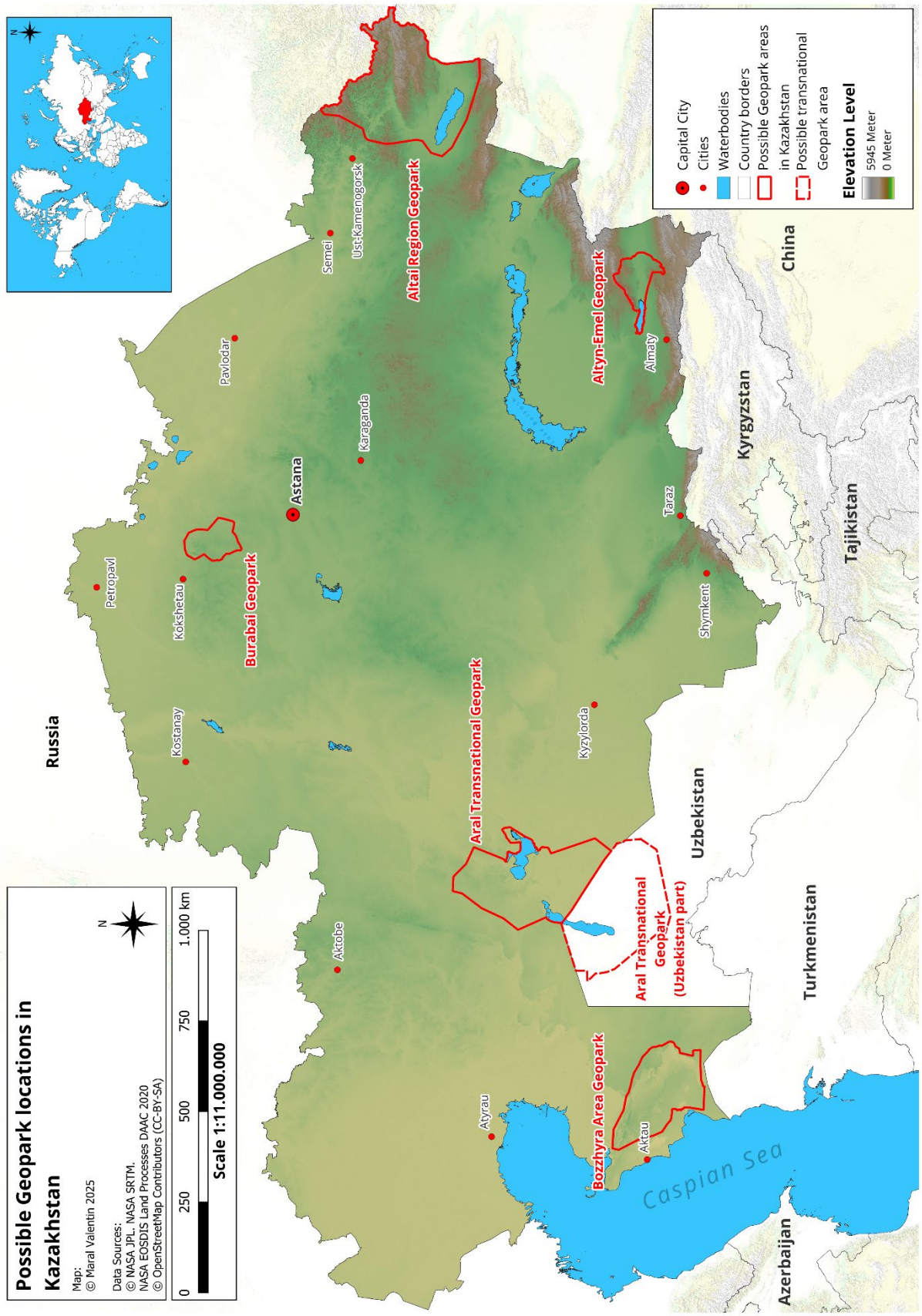

Figure 24: Map of possible Geoparks in Kazakhstan (Source: Own Design)

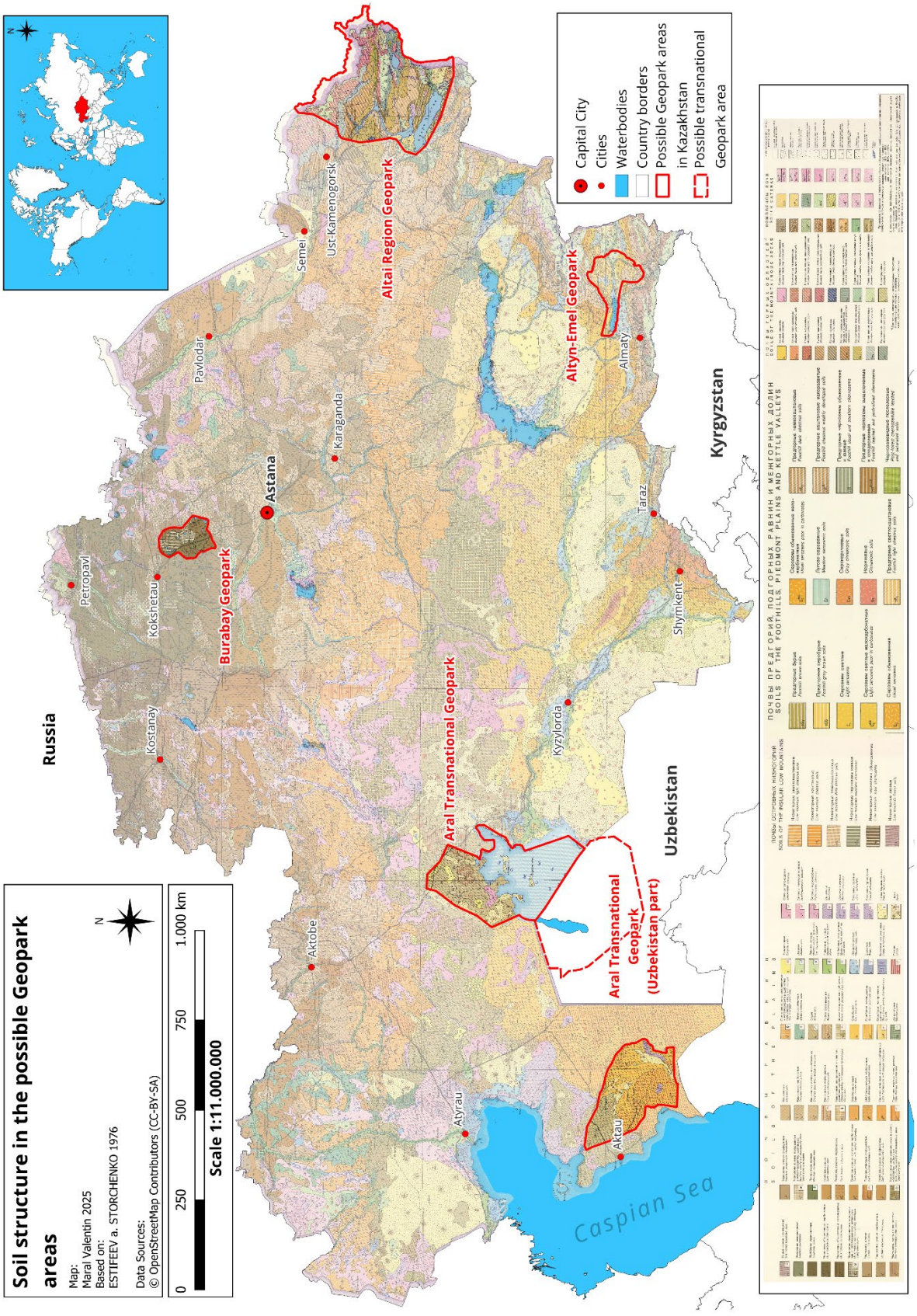

Figure 25: Soil structure in the possible Geopark ares of Kazakhstan (Source: Own design according to ESTIFEEV u. STORCHENKO 1976)

	Aral Transnational Geopark	Altai Region Geopark
Area:	Kazakhstan part: 52.589 km^2 Uzbekistan part: 59.569 km^2 Combined: 112.158 km^2	63.861 km^2
Location:	South-central Kazakhstan Border Region to Uzbekistan Former Aral Sea Area	North-East Kazakstan Border Region to Russia, China
Outstanding attractions of geotouristic interest:	Akespe Radon Spring Barsa-Kelmes Nature Reserve Kischi Barsuki Sands Remains of Aral Sea Renaissance Island Ülken Barsuki Sands	Austrian Road Belukha Mountain Berel burial mounds Berel glacier Berel Museum Black Uzel formation Bukhtarma Reservoir Irtysh River Area Kok-Kol Waterfall Kyndyk tas (Prayer stone) Lake Zaisan Linear Pillars tract Marqakol Lake Ravnovesiya Lake The Kiin-Kerish tract
Geological structure:	Underground: Sandy loamy Sand Soils: Brown soils Brown solonetzic soils Brown weakly developed stony soils Gray brown soils Hydromorphic solonetzs Sands Takyrlike soils	Underground: Hard cristalline rocks Loamy Sandy-pebble deposits Sands Soils: Foothill brown soils Foothill light chestnut soils Meadow soils of large shallow depressions Mountain chestnut soils Mountain cinnamonic soils Mountain forest acid-non podolized soils Mountain forest chernozemlike soils Mountain forest light grey soils Mountain leaches and podolized chernozems Mountain meadow-steppe alpine and sub-alpine soils Mountain soddy (forest-meadow) soils Mountain steppe xeromorphic soils Mountain tundra soils Post-forest chernozemlike leached and saturated soils Solonchaks
Rare minerals:	Copper Tin Tungsten	Antimony Copper Lithium Niobium Tin Tungsten

Table 3: Overview of features of the examined potential Geopark Areas in Kazakhstan (Part 1) (Source: Own design)

	Altyn-Emel Geopark	Bozzhyra Area Geopark
Area:	13.100 km^2	37.425 km^2
Location:	South-East Kazakhstan Close to Almaty Kapshagay Reservoir Area	South-West Kazakhstan Close to Aktau Caspian Sea Shoe Area
Outstanding attractions of geotouristic interest:	Aktau Mountains Charyn Canyon Degeres Rocks Katutau Mountains Moon Canyon Mynbulak Oasis Oshaktas Steles Saki Mounds Besshatyr (Ancient Burial ground) Tanbaly Tas petroglyphs (western and eastern) Temirlik Canyon The singing Dune	Akespe Tract Beket-Ata underground mosque Bozzhyra Tract Karaman-Ata Necropole Kyzyl Kup (Tiramisu tract) Mount Bokty Petroglyphs on the Airakty Mountain Saikyrkum Tamshaly Sai Canyon Torysh (Valley of Balls) Tuyesu Kum (Camel Sands) Ybykty Canyon
Geological structure:	Underground: Cristalline rocks Loamy sandy and sandy Soils: Automorphic Solonetzs Foothill gray brown soils Gray brown soils Meadow serozemic soils Meadow soils Meadow soils of the flood plains Mountain chestnut soils Mountain leached and podzolized soils Mountain meadow and subalpine soils Mountain steppe xeromorphic soils Usual Serozems poor in carbonates	Underground: Limestones and chalks Loamy Sands Soils: Brown soils Brown solonetzic soils Gray brown soils Gray brown solonetzic soils Shor-solonchaks
Rare minerals:		

Table 4: Overview of features of the examined potential Geopark Areas in Kazakhstan (Part 2) (Source: Own design)

Burabay Geopark	
Area:	7.118 km^2
Location:	North-Central Kazakhstan Close to Astana Burabi Lake Area
Outstanding attractions of geotouristic interest:	Bura Mountain Dancing Birches (Naturally deformed trees) Glade of Ablay Khan Kenesary Cave Kokshetau Mountain Lake Burabay Mount Bolektau Okzhetpes rock Three sisters rock formation Throne of Ablai Khan Zhumbaktas Rock
Geological structure:	Underground: Hard cristalline rocks Soils: Low mountain usual chernozems Southern calcareous chernozems Southern chernozems Usual chernozems Usual soletzic chernozems Usual weakly and incompletely developed stony chernozems
Rare minerals:	Antimony Cobalt Copper

Table 5: Overview of features of the examined potential Geopark Areas in Kazakhstan (Part 3) (Source: Own design)

of Geopark destinations and support the creation of integrated visitor experiences. In addition to institutional partnerships, private-sector collaboration expands opportunities for cross-border tourism. Cooperation among businesses, tour operators, and hospitality providers facilitates the development of seamless travel itineraries that span multiple Geoparks, enriching the overall tourist experience. International engagement also promotes cultural diplomacy. Partnerships with Geoparks abroad support cultural exchange initiatives such as joint events, exhibitions, and educational programs, fostering mutual understanding and cross-cultural appreciation. Finally, international cooperation is instrumental in promoting sustainable tourism. The alignment of environmental and cultural preservation efforts with international best practices reinforces the long-term viability of Geopark development, while contributing to a collective global commitment to responsible travel. In sum, Kazakhstan's active participation in international collaborations enhances the quality, visibility, and sustainability of its Geopark tourism initiatives. By integrating research, marketing, culture, and conservation within a transnational framework, the country is well positioned to advance its tourism objectives on a global stage (ZOUROS u. VALIAKOS 2017: 970, HENRIQUES u. BRILHA 2017: 351–353, DU and GIRAULT 2018: 11–14, FARSANI ET AL. 2014a: 1–2).

7.2. Aral Transnational Geopark: Ecological recovery via transnational cooperation

The idea of establishing a Geopark in the area of the former Aral Sea is not new. In fact, the opening of such a park was recently announced (GEOPARK ARAL 2025a). Unfortunately, apart from the homepage, there is hardly any information available about the new Geopark. However, as things stand at present, it can be assumed that the Geopark named 'Geopark Aral' will not be listed as a UNESCO Global Geopark. This is partly because verification via the UNESCO directory is not possible, and partly because there is no confirmation on the park's website. There is only a reference to the park having been created with the help of UNESCO, but this most likely refers to the UNESCO Biosphere Reserve Barsankelmes, which has existed in the park since 2016 (UNESCO 2025a). However, no data on UNESCO Global Geopark accreditation can be found.

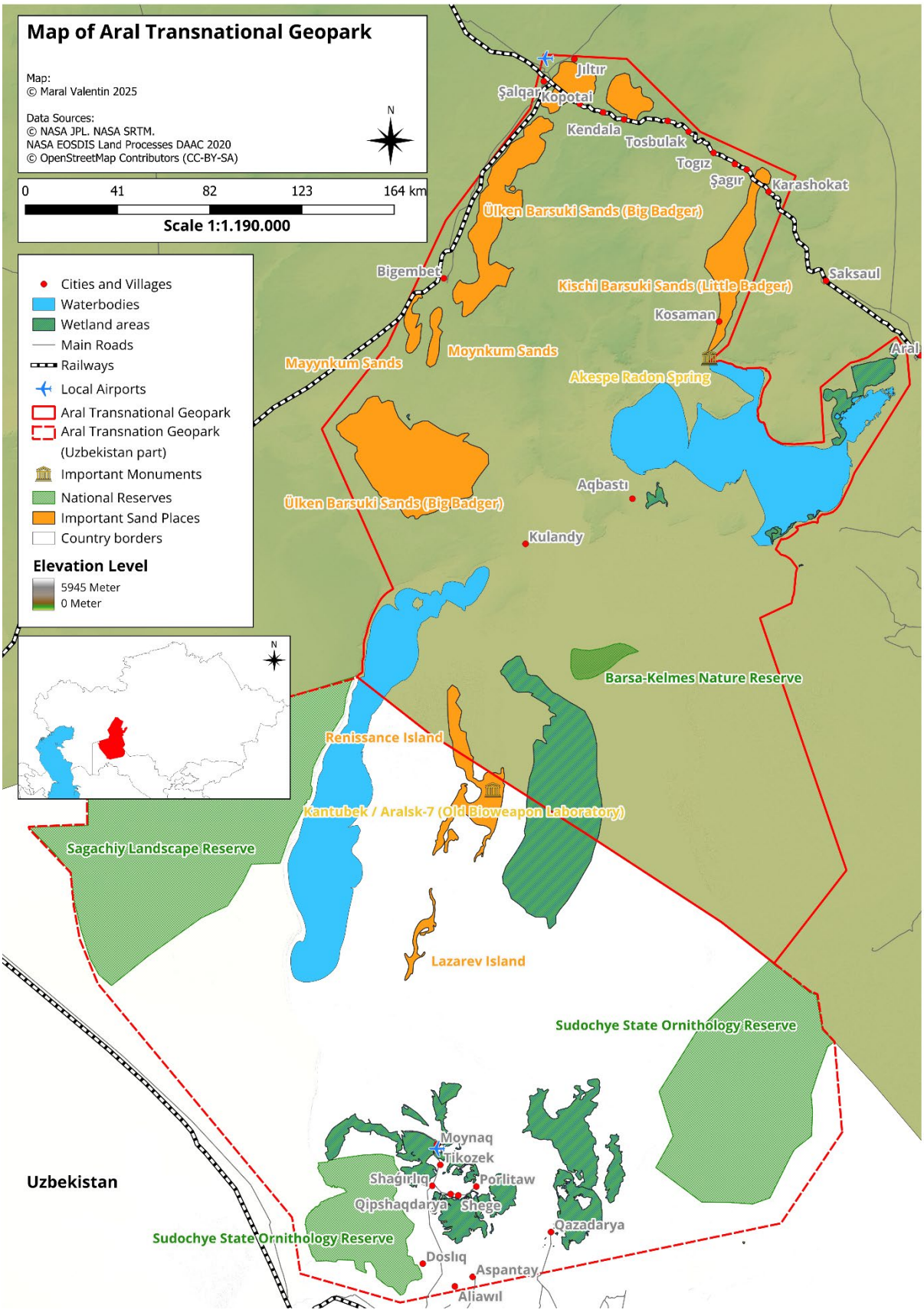

Figure 26: Map of the potential Aral Transnational Geopark (Source: Own Design)

The concept for a Geopark in the Aral Sea region devised by the author is multi-part. On the one hand, the idea was to create the Geopark as a transnational institution. The similarity of the area's boundaries to those of the existing Geopark is purely coincidental and is essentially based on the former shore areas of the Aral Sea. The author only learned about the new Geopark shortly before completion. In addition, the second part of the Geopark extends into the territory of Uzbekistan.

The Geopark covers a total area of 112,158 km^2, of which around 52,589 km^2 is on the Kazakh side and 59,569 km^2 on the Uzbek side. The area is located in south-central Kazakhstan on the site of the former Aral Sea on the border with Uzbekistan. Geologically, the region consists mainly of sandy and loamy-sandy soils (Figure 25). Most of the area is occupied by the former bed of the Aral Sea. The soil structure ranges from brown soils to brown solonetzic soils. In addition, there are grey-brown soils and hydromorphic solonetzes. Takir soils with their typical cracked surface can also be found. A significant part of the area is covered with sand, especially in the area of the former lake bed. This is commonly referred to as Aralkum (which means Aral Desert), mainly because the former lake bed resembles a desert in its characteristics (ISSANOVA ET AL. 2023: 25).

It should be mentioned that there are various valuable metal deposits in the Geopark area, including copper, tin and tungsten (SELTMANN 2023: 21).

The park comprises four nature reserves, including a UNESCO biosphere reserve (Barsa-Kelmes Nature Reserve) on the Kazakh side. The Barsan-Kelmes Nature Reserves is also part of the UNESCO World Heritage Site ‘Cold Winter Deserts of Turan’ (UNESCO 2025c). On the Uzbek side, there is the Sagachiy Landscape Reserve and the two-part Sudochye State Ornithology Reserve

As transport infrastructure also plays a significant role in tourism, we will now briefly discuss transport links. There are commercial airports in Salqar (Kazakhstan) on the northern edge of the park and Moynaq (Uzbekistan) on the southern edge. The northern Kazakh part can be reached via the Aktobe and Shymkent railway line. From Salqar, there is also a railway connection via Bigembet to Qońirat in Uzbekistan. Both the Kazakh and Uzbek parts can be

reached from the north and south via main roads through the larger towns on the edge. The situation inside the park is difficult due to the lack of roads and can only be navigated by four-wheel drive vehicles. This is particularly problematic in the area of the former lake bed (Figure 26).

Apart from the impressive and at the same time tragic backdrop of the almost completely disappeared Aral Sea, which is geologically very fascinating in itself, there are a number of geotouristic attractions that, in the author's opinion, justify the establishment of a Geopark. The description follows alphabetically after Table 2

Akespe hot radon spring

The first is the Akespe Radon Spring in the central-northern part of the park near the village of Kosaman. The spring was discovered in 1986 in a Jurassic deposit that was located in the former fishing village of Akespe at the time. Due to the steady retreat of the Aral Sea, Askepe is now a more or less abandoned desert village. The spring has been enclosed and has a depth of 1307 m and a flow rate of 25 l/s. The water temperature is 63° Celsius. The water smells of sulphur

Figure 27: Askepe Hot Radon spring (Source: GEOPARK ARAL 2025b)

and contains radon. The spring is a popular destination for tourists and pilgrims alike. The spring is said to have healing powers, which is why it is also considered a sacred site and is revered by many locals (GEOPARK ARAL 2025c).

Barsa-Kelmes Nature Reserve

The Barsa-Kelmes Nature Reserve is one of the oldest protected areas in Kazakhstan. The area was placed under protection as early as 1939. The name 'Barsakelmes' means 'If you go there, you will not return'. The reserve used to be located on an island in the Aral Sea, but since the increasing silting up of the lake, the area has become part of the Aralkum. The island consists mainly of deposits from the Oligocene. Gray-brown soils are the predominant soil types, but the island is covered with sand throughout. The average annual air temperature is 8.7 °Celsius, and the average annual precipitation is 25 to 208 mm. In winter, temperatures can drop to -31°C and in summer rise to 39.4°C (QAZAQ GEOGRAPHY 2025). The vegetation is similar to that of dry steppes. The fauna consists of goitered gazelles, saiga antelopes and halves. The animals have been resident here since the establishment of the reserve; before that, the former island was largely uninhabited. Other important mammal species in the reserve include the steppe fox, the red fox and the wolf. Smaller mammals include long-eared hedgehogs and Tolai hares. The protected area is home to a total of 27 mammal species and 175 bird species, as well as smaller populations of amphibians and reptiles (DIMEYEVA ET AL. 2012: 316–318). Barsa-Kelmes is also the setting for many folkloric legends, the most famous of which revolves around the appearance of the Islamic prophet Kydyr and the destruction of a village by snakes due to carelessness and ignorance (NAURZBAEVA 2014).

Kishi Barsuki Sands / Ülken Barsuki Sands

These two small sand deserts are located in the western and north-western parts of the planned Geopark near the town of Salqar. The name means 'big badger' (Ülken Balkar) and 'little badger' (Kishi Balkar). They extend over a length of 100 km (small badger) to 200 km (big badger) and continue the Turgai hollow in the south through depressions. The subsoil consists almost exclusively of Palaeogene sands. The highest elevation is approximately 100 m (SCHMIDT 1926: 785–786). The climate in the region is continental with cold winters and relatively warm

summers. Precipitation is between 150 and 200 mm. Reed plants can be found in the area, which hold the sand in place. There are few trees, which grow in scattered groves. In summer, the area is used as pasture for cattle, as the water table is relatively high here.

Remains of the Aral Sea

Probably the largest and most tragic part of the planned Geopark is occupied by what was once known as the Aral Sea. In the wake of one of the greatest ecological disasters of the 20th century and the subsequent silting up of what was once the third largest lake in the world (approx. 67,000 km^2) (OREN ET AL. 2010: 229). From a geotourism perspective, this unprecedented disaster offers a unique opportunity to explore the drying up of the Aral Sea and its consequences (JELEN ET AL. 2020: 85–87, ISSANOVA ET AL. 2020: 96–99). The idea is to establish an information centre about the Aral Sea, ideally in a central, easily accessible location such as Salqar. Two centres, one on the Kazakh side and one on the Uzbek side, would also be conceivable. The centres could then provide information about the Aral Sea and its history and also serve as a base or starting point for tours through the Geopark. This would be particularly useful for tours focusing on the topic of the Aral Sea's desiccation. Here, reference could also

Figure 28: Remains of Aral Sea (Source: HINDUSTAN TIMES 2017)

be made to efforts to at least partially preserve or partially refill the northern (small) Aral Sea. Kazakhstan has already achieved small success in the northern part, with fish stocks even recovering slightly and thinking about the re-establishment of the fishing industry. In the near future, the replenishment may be able to meet the requirements of a potential Geopark and the resulting geotourism demands, insofar as the tourism potential increases, e.g. through bathing or adventure tourism. In this case, an educational review of the marine ecosystem in the 'new' Aral Sea would be appropriate (VAROTSOS ET AL. 2020: 3, MICKLIN ET AL. 2020: 131–135).

Renaissance Island / Aralsk-7

This island in the Aral Sea, which covered an area of around 200 km^2 before it became landlocked, bears its name as a euphemism. The area is considered one of the most contaminated in Uzbekistan and the entire Soviet Union. Biological weapons, including anthrax pathogens, were tested here from 1948 to 1992. The former island capital, Kantubek, is deserted. Only a few ruins remain as a reminder of the approximately 1,500 inhabitants who lived here until 1992. In 2002, a large part of the island was decontaminated of anthrax pathogens with funds from the United States and assistance from Uzbekistan (LEITENBERG ET AL. 2012: 127–136). Of course, this is not a geotourism site in the true sense of the word, as the author is well aware. Nevertheless, the lessons to be learned from this special place can be very instructive and should therefore be incorporated into the educational heritage of a possible Geopark. For example, an information centre for Aralsk-7 could be set up to provide information about the history, the associated dangers and also the silting up of the Aral Sea in connection with the island. Access to the island is strictly prohibited, even though there are several (illegal) tour operators who visit the island as part of 'dark tourism' (MARTINI u. BUDA 2020: 680–681)and expose themselves to danger in the process.

7.3. Altai Region Geopark - Origin of the Turkic peoples

When writing about Geoparks in Kazakhstan, it makes sense to include the 'Kazakh' Altai in the shortlist of possible Geopark locations. There are many good reasons for this. The author deliberately chose the area around the Altai in the far north-west of Kazakhstan to show how

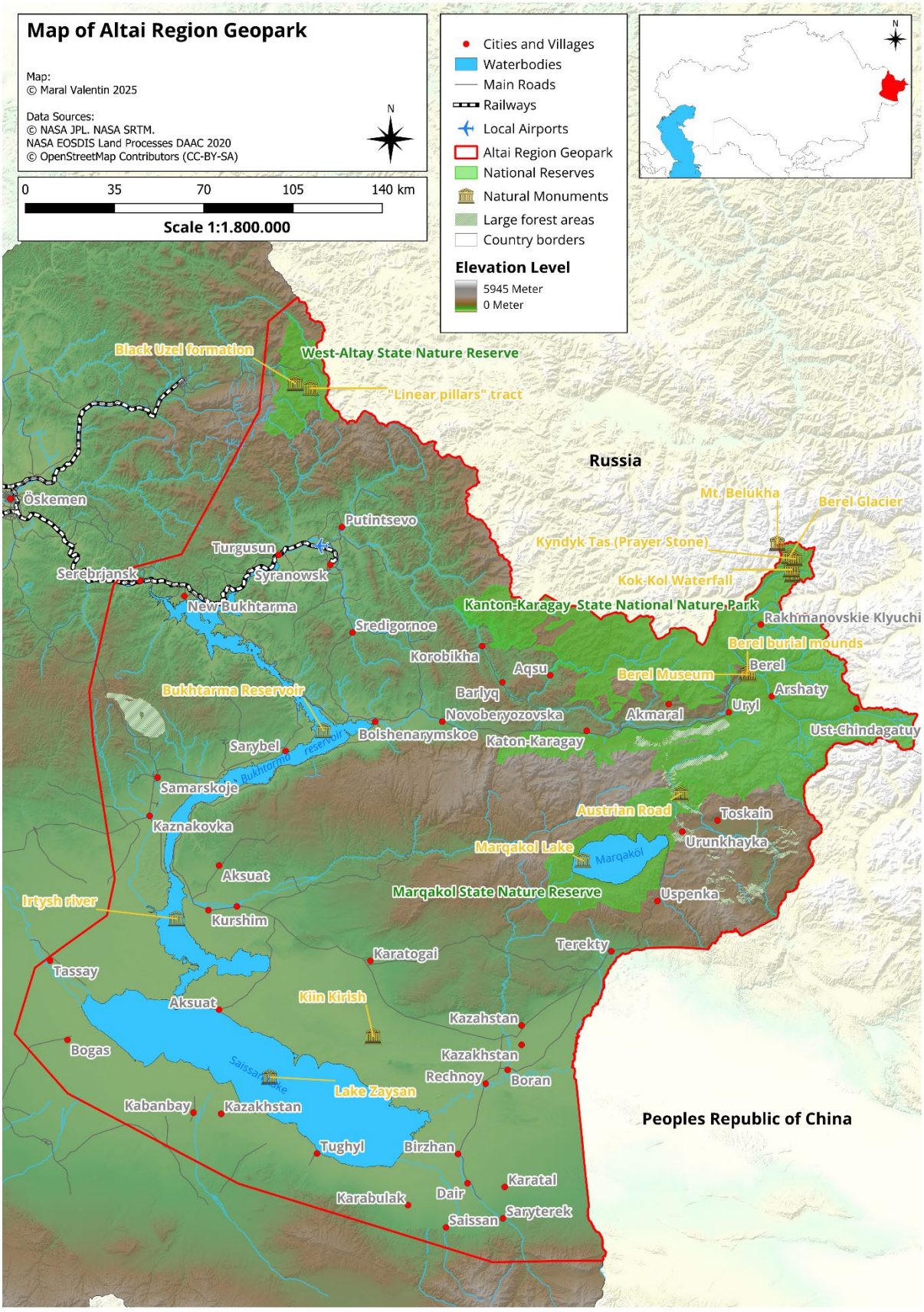

Figure 29: Map of the potential Altai Region Geopark (Source: Own Design)

much geotourism potential the region has to offer. In addition, there is the question of whether it would be possible to establish a transnational Geopark with Russia, as cross-border cooperation already exists in the Altai at other levels (UNESCO 2025a).

The establishment of a Geopark in the Altai region has many advantages. The planned Geopark area already includes the Katon-Karagai National Nature Park, which also contains the UNESCO Katon-Karagay Biosphere Reserve. Furthermore there is the West Altai State Nature Reserve, which also functions as a UNESCO Biosphere Reserve and last but not least, the Marqakol State Nature Reserve, which is also listed as a UNESCO Biosphere Reserve (UNESCO 2025f, 2025a).

In addition, the region is a popular destination for excursions within Kazakhstan. In the author's opinion, the region may also be suitable for international or cross-border formats in the future. There are already plans for international cooperation in the region in the form of a transboundary biosphere reserve called ‘Great Altai’ together with Russia (IBISCH ET AL. 2015: 20–21), which would also be favourable in view of existing tourism problems in the region.

The planned Geopark in the Altai region covers an area of 63,861 km^2. The area is located in north-eastern Kazakhstan in the border region with Russia and China. Geologically, the region consists of different subsoils, with crystalline rocks predominating in the eastern mountainous regions. In the western and southern parts, sandy loam soils are found. The soils in the mountainous regions consist mainly of mountain forest acid-non podsolised soils and mountain forest chernozem-like soils. Mountain chestnut soils and mountain cinnamomic soils also occur on a small scale. In the south, around Lake Zaysan, there are sandy soils and large areas of foothill brown soils. On the south-eastern edge of the area is a desert landscape dominated by the Kiin-Kerish tract (see Figure 29).

There are significant deposits of raw materials within the Geopark, in particular antimony, copper, lithium, niobium, tin and tungsten. These deposits are currently being exploited on a pro rata basis (SELTMANN 2023: 21).

Due to the high altitude, the transport infrastructure in the Altai Geopark area is different from that in the other study areas. There is a small local commercial airport near Syranovsk. The western part of the Geopark can be reached by train to Syranovsk on the Öskemen–Syranovsk railway line. There are no further train connections to the valley east of Syranovsk. The north-eastern and southern parts are accessible via main roads. In general, the local roads are in varying conditions depending on the season. The main road through the Bukhtarma Valley ends shortly after Berel. The route to the Russian border consists of a simple country road.

The geotourist features of the Geopark are described below. This is shown in Table 2.

Austrian Road

The so-called 'Austrian Road' is a 129 km long, partly unpaved road that runs from Terekty to Shyngystai. It got its name from the approximately 300 Austro-Hungarian prisoners of war who built this road after the First World War. The history of the road was filmed in 2016 by Rulana Berndl, an Austrian historian, under the name 'Austrian Road' (BEKMAGANBETOV 2016). This road passes Marqakol, offering an opportunity to combine geotourism with historical knowledge. This is entirely in keeping with the preservation of local historical heritage, which is inherent in Geoparks.

Belukha Mountain / Berel Glacier / Kyndyk Tas (Prayer Stone) / Ravnovesiya Lake / Kok-Kol Waterfall

Belukha Mountain is the highest mountain in the Altai Mountains (4,506 m). It is located in the north-easternmost part of Kazakhstan on the border with Russia. Its glaciers and massive appearance make it one of the most prominent peaks in the world. The glaciers are located south of the summit on Kazakh territory. The large Berel Glacier has an area of approximately 12 km^2 and a length of approximately 9.5 km. The small Berel Glacier has an area of about 8.5 km^2 and a length of about 7 km. There are currently efforts between Russia and Kazakhstan to make climbing the mountain easier. To climb the mountain from the Russian side, it is necessary to cross the border into Kazakhstan and vice versa. Both sides are currently working on a solution (NATIONAL CHAMBER OF ENTREPRENEURS OF THE REPUBLIC OF KAZAKHSTAN "ATAMEKEN" 2025b, DUNETS ET AL. 2020: 3257, WANG u. LIU 2020: 841, DEWAYNE CECIL ET AL. 2010: 339–340). The mountain fits well into the concept of a possible Geopark, as its size, glaciers and geology represent the Altai like no other mountain in the region. In addition, if the

Figure 30: Mount Belukha (Source: WELCOME.KZ 2023)

issue of permits to climb the mountain is resolved, it could make an important contribution to the development of tourism in East Kazakhstan. At the foot of Belukha Mountain is a prayer stone called Kyndyk Tas. It is part of local folklore and also serves as a cultural and spiritual pilgrimage site. Its cultural characteristics outweigh its geological ones, and in terms of tourist tours, it is inextricably linked to the region around Belukha Mountain (VISIT EAST QAZAQSTAN 2025c). Ravnovesiya Lake (Lake of Balance) lies at the foot of the three peaks of Faith, Hope and Love, nestled in the surrounding mountain landscape. It has a diameter of approximately 100 metres and is fed by melting glaciers from the surrounding mountains. Here, you can occasionally observe glacier ice sliding directly from the glaciers into the lake. It is located in the immediate vicinity of Mount Belukha (MUKHATZHANOVA 2023g). The ensemble is complemented by the highest waterfall in the Altai Mountains, the Ko-Kol Waterfall. This is located north of Ravnovesiya Lake and on the outskirts of Belukha Mountain. It is approx. 80 m high and has a gradient of between 60° and 70°. What is special here is that the water does not simply fall down, but flows in narrow rivulets towards the bottom of the waterfall. This is a popular spectacle for tourists (VISIT EAST QAZAQSTAN 2025b).

Berel burial mounds /Berel Museum

The Berel burial mounds are located in eastern Kazakhstan in the Altai Mountains, near the village of Berel in the so-called 'Valley of the Kings'. This is also where the 'Golden Man' was found, one of the symbols of the Kazakh Republic, which has been immortalised as a monumental statue in Astana.

This excavation site contains burial grounds (called kurgans) from the Saka period between the 5th and 3rd centuries BC (ONGGARULY 2018: 18). It is generally believed that this region is the historical origin of the modern Turkic peoples (ONGGARULY 2018: 39). The museum in Berel specialises in exhibiting the finds. Against the backdrop of historical and cultural preservation, these are excellent components that would complement a potential Geopark well in terms of content (BEREL MUSEUM 2025).

Irtysh River Area / Bukhtarma Reservoir

The Irtysh River flows through the Geopark area from east to west. It is one of the longest rivers in the world and is also the longest tributary in the world, draining into the Ob. It rises in China in the western part of the Mongolian Altai Mountains. After crossing the border into Kazakhstan, the river is also called the 'Black Irtysh'. It flows through Lake Zaysan and is dammed further west to form the Bukhtarma Reservoir, Kazakhstan's largest reservoir, with an area of around 5,500 km^2. The reservoir is 500 km long, around 50 km wide and has a volume of around 50 km^3. The Bukhtarma hydroelectric power station operates here. Filling of the reservoir began with the completion of construction work on the power station dam in 1969. Over the years, a rich flora and fauna has developed around the reservoir. Due to their enormous economic and environmental importance, the river and reservoir are a significant part of the new Geopark (CHALABOVA 2022b, 2022a, RADELYUK ET AL. 2022: 2, KRUPA ET AL. 2024: 2, ZHENSIKBAYEVA ET AL. 2024: 2).

Katon-Karagay National Park

Katon-Karagay National Park is the heart of the planned Altai Geopark. It is Kazakhstan's largest national park, covering an area of almost 6,500 km^2, and was established in 2001. It is located in north-eastern Kazakhstan and encompasses practically the entire "Kazakh Altai". The national park is home to numerous geotouristic attractions, which are described down below. This alone makes the national park a valuable part of the planned Geopark, as it already has (geo)tourist infrastructure and an established administrative structure. In addition, a transboundary partnership is already in place, which should benefit a future Geopark. There are several routes in the national park that have been created in cooperation with the UNDP. One of these routes was opened in 2023. (SAKENOVA 2023, IBISCH ET AL. 2015: 20–21; NATIONAL KAZAKH TOURISM COMPANY 2019; KATON-KARAGAY STATE NATIONAL NATURAL PARK 2022b, 2022a; VISIT EAST QAZAQSTAN 2025a, 2025b).

Lake Zaysan

Zaysan Lake is the largest lake in the planned Geopark area. It is located in the southern part, surrounded by the Altai Mountains, the Kalbinsky Mountains and the Tarbagatai Mountains. It covers an area of approximately 1,830 km^2. It extends for approximately 100 km in an east-west direction and is approximately 50 km wide. The lake is considered to be very rich in fish. The Irtysh River flows into the lake from China and also drains through it. In the northwest is the geologically and economically important Kalbinsky gold ore belt, with numerous gold ore deposits. The lake can be considered a geotourism destination. To the north of the lake is the Kiin-Kerish tract (DORFMAN 2011: 1376–1378, TRIKHUNKOV ET AL. 2023: 614–617).

Marqakol Lake State Nature Reserve

The Marqakol Lake State Nature Reserve was established in 1976 and includes the UNESCO Marqakol Biosphere Reserve. It covers an area of around 1,000 km^2. Marqakol Lake lies in the so-called "Marqakol Depression" at an altitude of approximately 1,447 metres. The lake covers an area of approximately 500 km^2. Twenty-seven streams and rivers flow into the lake, with the Topolyovka being the largest tributary. The lake drains exclusively via the Kalzhyr River into the

Irtysh River. In the reserve, there are 59 species of mammals, 245 species of birds, 4 species of reptiles, 2 species of amphibians and 6 species of fish. Traces of microplastics have been found in the lake. The lake and the reserve are popular recreational areas (MARKAKOL STATE NATURE RESERVE RGU 2022, MADIBEKOV ET AL. 2024: 6–8, CHLACHULA 2019: 36–37).

The Kiin-Kerish tract

The Kiin-Kerish Tract is located about 15 km north of Lake Zaysan in eastern Kazakhstan. It is a well-known hill formation consisting of colour-changing clays embedded in a desert landscape. Interestingly, despite the deep crevices in the clay rock, several species of magnolias and araucarias grow and thrive here. During the Mesozoic era, the region had a tropical climate. Traces of many species of vertebrate ancestors, such as rhinoceroses, can be found in the sediment. There is a great diversity of bird species. The Asian buzzard has chosen this region as its breeding ground (MUKHATZHANOVA 2023b, CHLACHULA 2019: 33, ISKAKOVA ET AL. 2021a: 177).

Figure 31: The Kiin-Kerish tract (Source: VISITEAST.KZ 2025)

West Altai State Nature Reserve / “Linear Pillars” tract / “Black Uzel”

Established in 1992, the nature reserve is located in the north-western corner of the planned Geopark. It is surrounded by the Ivanovsky, Lineysky Belok ridges and the Kholzun and Koksu

Ridge. The average annual temperature is 1.5 °Celsius. In summer, the air temperature ranges between 18 and 24 °Celsius, and in winter between 0 and -18.5 °Celsius. The highest temperature recorded in a year is 41.5° Celsius and the lowest temperature is -46.7° Celsius. The area covers approximately 1,000 km^2 and is also a UNESCO Biosphere Reserve (UNESCO 2025f). According to the IUCN protection categories, this is a Category Ia protected area, i.e. a strict nature reserve (DUDLEY 2013: 13). In the reserve itself, there are two species of fish, two species of amphibians, two species of reptiles, approximately 130 species of birds and around 52 known species of mammals. In addition to the intact nature, the special rock formations found in the reserve are a particular feature. These include, above all, the well-known geo-architecturally interesting complex of 'Linear Pillars'. There is also the mountain formation called 'Black Uzel', located on the upper reaches of the Turgusun River. It is characterised by steep mountain walls and massive glacial deposits on the summit. Of biogeographical interest is the Alpine swamp complex called 'Gulbische', located on the watershed of the Black Uba and Barsuk rivers (COMMITTEE OF FORESTRY AND WILDLIFE OTHE MINISTRY OF ECOLOGY AND NATURAL RESOURCES 2021; BOLGIBAYEVA ET AL. 2024: 946–948, SELEZNEVA u. ROTANOVA 2021: 2).

7.4. Altyn-Emel Geopark

Another indispensable part of Kazakhstan's Geopark landscape is an area that is already well known and has become an integral part of various tourist programmes. The third study area is located around the Altyn-Emel National Park, which, in addition to spectacular geological features, also has special historical artefacts in the form of petroglyphs. In addition, the entire region offers a wealth of geotourism diversity that should cover every area of interest.

The proposed Geopark has a total area of around 13,100 km^2. It is located in south-eastern Kazakhstan, about 170 km as the crow flies from the former capital Almaty and about 130 km from the Chinese border in the east. The region is also dominated by the Kapshagay Reservoir, which lies prominently in the centre of the potential Geopark. Geologically, the subsoil of the region consists of crystalline rock and simple, partly sandy clays. The soils consist mainly of usual serozems poor in carbonates and foothill grey brown soils. Mountain steppe xeromorphic

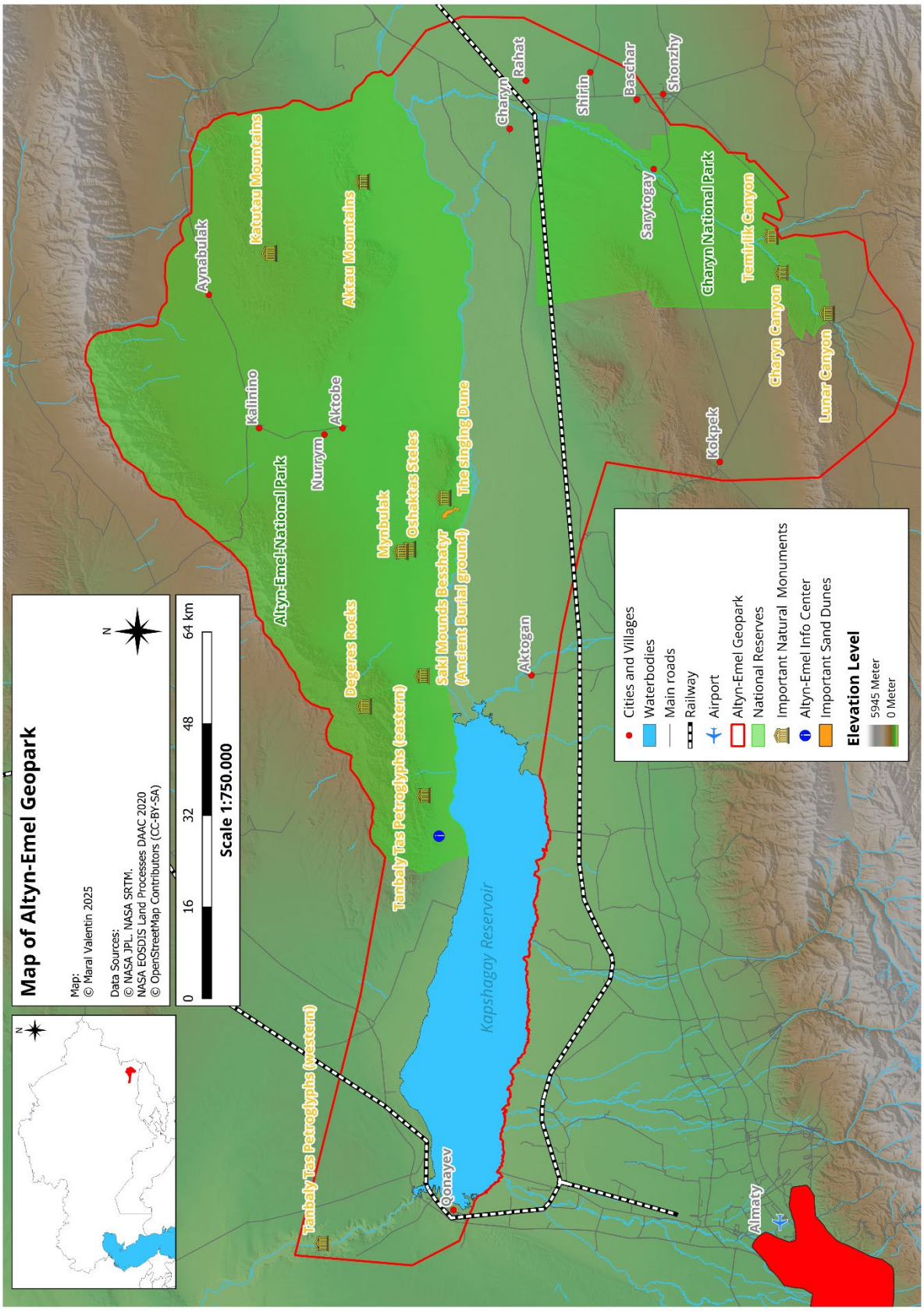

Figure 32: Map of the potential Altyn-Emel Geopark (Source: Own Design)

soils occur in some areas. Desert-like sandy soils are also found in the central part (see Figure 25).

Unlike other study areas, there are no rare minerals here that would generate mining interest. The Geopark would unite two national parks, the Altyn-Emel National Park in the north and the Charyn National Park in the south. The region also has two UNESCO biosphere reserves, the Altyn-Emel Biosphere Reserve in the centre and the Charyn Biosphere Reserve in the south. Altyn-Emel is also a UNESCO World Heritage Site as part of the 'Cold Winter Deserts of Turan' ensemble. The western, central and eastern parts of Altyn-Emel are protected (UNESCO 2025c).

The transport infrastructure in Altyn-Emel consists mainly of the main roads leading around the main areas. By car, you can reach the village of Aktobe in the middle of the Altyn-Emel National Park. The Charyn National Park is also crossed by a main road. Kokpek is the nearest town with amenities before the entrance to the national park. There are no train connections. Visitors are advised to take a taxi or a mashrutka from Almaty. This is also where the only airport in the region is located (KASYMOVA ET AL. 2025: 117–118).

Altyn-Emel National Park / Aktau Mountains / Katutau Mountains / Degeres Rocks / Mynbulak Oasis / Oshaktas Stele

The Altyn Emel National Park is one of the largest of its kind in Kazakhstan. 'Altyn Emel' means 'Golden Saddle'. It covers an area of around 3,000 km^2 and is located northeast of Almaty on the banks of the Kapshagay Reservoir and in the middle of a unique desert landscape. The climate is strongly continental. The average temperature in summer is 29-32 ºC. In winter, it is between -3 and -8 º Celsius. Within the national park is the 5.5 km^2 Altyn-Emel Biosphere Reserve (STATE NATIONAL NATURAL PARK ALTYN-EMEL; AKIYANOVA ET AL. 2020: 11–12; KAZAKHSTAN NATIONAL COMMITTEE FOR THE UNESCO PROGRAMME "MAN AND THE BIOSPHERE" 2025a)

Figure 33: Aktau Mountains (Source: Own Photo)

The Aktau Mountains (White Mountains) are a small sedimentary mountain range about 30 km long and covering an area of around 50 km^2. They are located in the eastern part of the Altyn-Emel National Park, north of the Ili River and east of the Katutau Mountains. They date back to the Palaeogene period and in earlier times formed the seabed of a primeval sea. They are known for their colourful diversity, which makes them a popular destination for excursions (DEGTYAREV ET AL. 2008: 879, ISKAKOVA ET AL. 2021c: 85, ARBA TRAVEL 2025a).

The Katutau Mountains (Red Mountains) are another feature of the Altyn-Emel National Park. The mountain range, which dates back to the Permian period, is of volcanic origin and consists mainly of a mixture of lava, tuffs, rhyolites, andesites, dacites, diabases and basalts. There are paleovolcanoes at the eastern and western ends of the range. They get their colour from the clay contained in the rock. The highest peak is about 1700 m (STATE NATIONAL NATURAL PARK ALTYN-EMEL).

Figure 34: The Katutu Mountain (Source: Own Photo)

The Mynbulak Oasis (Thousand Springs Oasis) is located north of the “Singing Dune” in the small Kalkan Mountains. The oasis is ideal for wildlife watching, as animals pass through here on their way to the Kapshagay Reservoir. There used to be a caravanserai here, but today there is a ranger station and simple accommodation (ARBA TRAVEL 2025b).

The Degeres Rocks, also known as the Degeres Mountains, are located not far from the coast of the Kapshagay Reservoir, north of the Besshatyr burial ground. One of the few named features is the Zhuzasu, at an altitude of about 1470 m. The mountains are predominantly volcanic in origin. They consist of effusive and granitoid deposits of Carboniferous rock, which are approximately 300 million years old. Permian and Silurian deposits are also found here, which

are the oldest deposits. The mountains consist mainly of Paleozoic rocks, which are 200 to 400 million years old (GORYACHEV ET AL. 2023: 75, MOLENDA 2018: 30–31; PETROV 2025c).

The Oshkatas steles are located in the middle of the Altyn-Emel National Park, in the small Kalkan Mountains between the Mnybulak Oasis and the "Singing Dune". They are a group of steles made of volcanic rock, approximately 2 metres high. The stones are considered a sacred place. It is believed that the stones were erected by nomads of the Saka culture as a site for religious rituals (MUKHATZHANOVA 2023f; PETROV 2025e; ARBA TRAVEL 2025c, KOSHIM ET AL. 2023: 3).

Charyn National Park / Charyn Canyon / Temirlik Canyon / Moon Canyon

Charyn National Park is the second centrepiece of the planned Geopark. The national park covers an area of 1,200 km^2 and is located in the south-eastern corner of the planned Geopark area, around 175 km north-east of Almaty. Within the national park is the Charyn Biosphere Reserve, the core of which covers around 100 km^2. Here you will find around 1,000 species of higher vascular plants, which accounts for 18% of all plants found in Kazakhstan. There are also 236 species of birds, which corresponds to approximately 48% of the total Kazakh avifauna (KAZAKHSTAN NATIONAL COMMITTEE FOR THE UNESCO PROGRAMME "MAN AND THE BIOSPHERE" 2025d). The Charyn Canyon is traversed by the Charyn River, which flows further north into the Ili River. It carves its way through the striking sandstone over a total length of 154 km. Part of the canyon, often referred to as the 'Little Brother of the Grand Canyon', is the 'Valley of Castles', which offers a spectacular view over 2 km. The name derives from the eroded sandstone cliffs that look like castles. An eastern arm of Charon Canyon is called Temirlik Canyon (Temir means iron in Kazakh), where you can find the famous steep reddish cliffs in all kinds of geological patterns. The valley floor is covered with rare ash grove trees, Moon Canyon, also known as 'Yellow Canyon', is a valley located in the southern part of Charyn Canyon, which stands out for its unusual colouring. The name Moon Canyon comes from its appearance, which resembles a lunar landscape, with sparse to no vegetation and rock formations that one would rather expect to find on Earth's satellite (MUKHATZHANOVA 2023c, UNESCO 2018; MUKHATZHANOVA 2023a; CHARYN STATE NATIONAL PARK 2025, KERIMBAY ET AL. 2021: 1, KUMAR u. SHERYAZDANOVA 2021: 9–10, AKIYANOVA ET AL. 2020: 7–9, MUKHATZHANOVA 2024d)..

Figure 35: Charyn Canyon (Source: Own Photo)

The singing dune

The ‘singing dune’, also known as ‘Aigaikum’ in Kazakh, is a sand dune complex covering an area of about 2.5 km, consisting of two separate dunes. The larger southern dune has a height of approx. 150 m and the smaller northern dune has a height of approx. 100 m. The total height of the complex reaches up to 650 m. (Singing Dune) It is framed by the large and small Kalkan Mountains, which surround it like a protective shield. The name therefore translates as ‘shield mountains. The location between the two mountain ranges prevents the dune from being eroded by the wind. The large Kalkan covers an area of around 180 km^2 and reaches heights of around 800 m. It is an extinct paleovolcano. The small Kalkan covers an area of approx. 60 km^2

Figure 36: The 'singing dune' (Source: Own Photo)

and reaches heights of around 400 m (Kalkan mountains). Due to its location in the Kalkan mountains, this dune landscape was formed over time by aeolian processes. According to local tourist guides, the ‘singing effect’ is caused by compression of the upper layers of sand. You can experience this for yourself by climbing up the dunes and sliding down. This process is accompanied by a dull, continuous sound (ARBA TRAVEL 2025d; STATE NATIONAL NATURAL PARK ALTYN-EMEL 2025).

Tanbaly Tas petroglyphs

One of the most important palaeontological discoveries in Kazakhstan are the petroglyphs (Tanbaly Tas in Kazakh language), which can be seen in many places throughout the country,

including the planned Geopark. There are three sites in total where petroglyphs can be found on a large scale. Two of these are located in the area of the planned Geopark. The larger of the two is located at the westernmost end of the Geopark on the banks of the Ili River, about 30 km north of Qonayev. The area covers about 120,000 m^2 and is famous for its depictions of various forms of Buddha and inscriptions in Tibetan. The petroglyphs cover an area of around 600 m^2 (ROGOZHINSKY 2010: 482). The second, smaller site is located in a small valley about 7 km east of the Altyn-Emel Visitor Centre on the north-eastern shores of the Kapshagay Reservoir. The petroglyphs found here mainly depict animals (YAKUSHKIN 2013: 57). The main site, to which the museum is attached, is located about 150 km further west of the site on the Ili River (TANBALY MUSEUM RESERVE 2025). Parts of the Tanbaly Tas ensemble are protected by UNESCO as a World Heritage Site, however this only applies to the main site of petroglyphes (UNESCO 2004).

Saka Mounds at Besshatyr (Ancient Burial Ground)

Besshatyr (five tents) is a burial complex of the Saka culture. It is located in the south-west of the Altyn-Emel National Park between the western Tan Balytas petroglyphs and the Mynbulak oasis. It is one of the most important and best-researched mounds in the region. The site dates back to the 6th–4th century BC and covers an area of approximately 2 km^2. There are a total of 31 burial mounds here. The largest burial mound is about 100 metres in diameter and around 18 metres high. The site is considered sacred and has deep cultural and spiritual significance for the surrounding population (AYAGAN 2004: 411, AYAGAN 2005a: 314, NOYANULY ET AL. 2016: 45, ISKAKOVA ET AL. 2021b: 145–146).

7.5. Bozzyra Area Geopark

Since the designation of potential Geopark sites in Kazakhstan should take into account the entire spectrum of the country's geological heritage as far as possible, the next proposal for an intra-Kazakh Geopark is located in western Kazakhstan on the coast of the Caspian Sea in the Mangystau region. This region is best known for the large port city of Aqtau and its rugged landscape in the east.

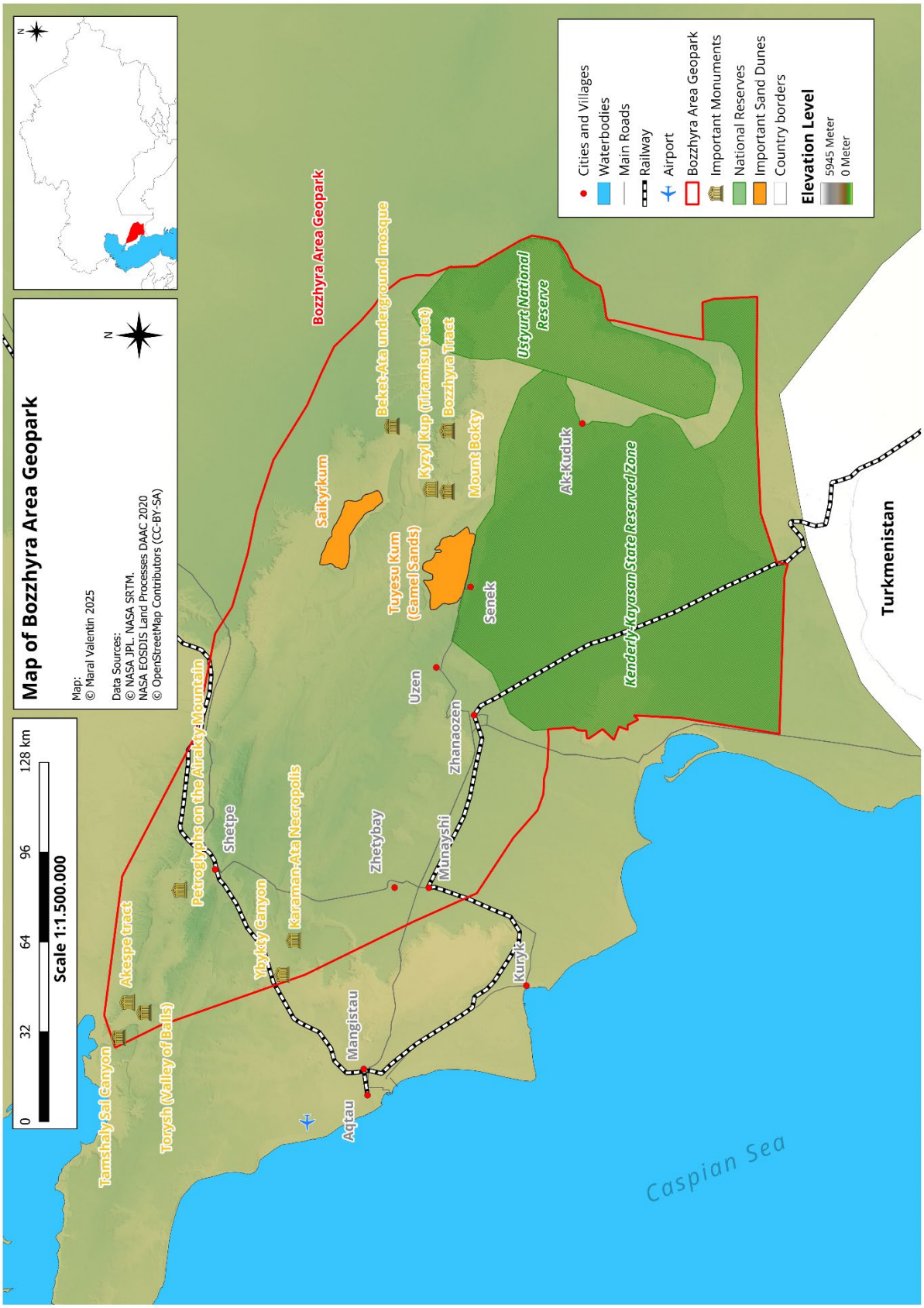

Figure 37: Map of the potential Bozzhyra Area Geopark (Source: Own Design)

When considering how to designate the area of the Geopark, the author came to the conclusion that it would make sense to combine as many geological and cultural-historical monuments and sites as possible, as well as protected areas, in this Geopark. This resulted in the shape you now see before you (Figure 37). The proposed Geopark has a total area of 37,425 km^2 and is located in the south and south-west of the Mangystau region. It is not far from the border with Turkmenistan. Geologically, the subsoil consists mainly of loam and significant accumulations of sand. Limestone and chalk also occur in places. The soils are divided into grey-brown and grey-brown solenetzic soils, with simpler brown soils found in the west.

Within the boundaries of the Geopark are two nature reserves, the Kenderly-Kayasan State Reserved Zone and the Ustyurt National Reserve. Since 2021, the Ustyurt area has been partially included on Kazakhstan's tentative list for inclusion in the UNESCO World Heritage Site, mainly due to its landscapes and traditional hunting methods (Aran Traps) (UNESCO 2021).

The region is well connected in terms of transport. All-important towns in the region can be reached from the north. The south-eastern part of the Geopark is only accessible via sandy tracks. As is the case almost everywhere in Kazakhstan, a four-wheel drive vehicle is generally recommended for travelling within the Geopark. Aktau has a large international airport. It is also possible to travel by train from Atyrau to Aktau and from there on to Zhanaozen.

Akespe Tract

The Akespe tract is located in the far north-west of the Geopark, near the village of the same name. It is not far from the Valley of Balls and the Tanbaly Sai Canyon. It is part of the Akespe canyon, and consists of various formations of white limestone that rise like cliffs into the desert. From a distance they resemble the chalk cliffs of Dover. When the sun shines, the reflection makes it appear much brighter inside the cliffs than outside. At dusk, the cliffs often turn a deep red colour (PETROV 2025a; WILD TICKET 2025).

Beket-Ata underground mosque

Beket-Ata is the name of a prophet who founded this mosque. The mosque is unique in that, like several others in the Magystau region, it was carved out of the rock by hand. The architecture dates back to the 18th century. The mosque itself is considered a holy place and has been welcoming pilgrims for over two centuries, since the death of Beket-Ata in 1813. The entrance hall of the mosque has a circular floor plan with a diameter of around 4.5 metres. It is modelled after a Kazakh yurt. The four adjoining rooms are between 2.7 and 3.5 metres high. This is where Bekel-Ata's personal belongings are kept. In 2024, a tourist route to Beket-Ata was inaugurated (TEMIRGALIYEVA 2024; CULTURE MAP 2025, SÖYLEMEZ ET AL. 2024: 296, KOSHIM ET AL. 2020b: 36–37, KHASHIMOV 2001: 131–132).

Figure 38: Beket-Ata underground mosque (Source: SHAHINA TRAVEL 2024)

Ustyurt National Reserve

The Ustyurt National Reserve is located in the easternmost part of the Geopark. It covers an area of 2,200 km^2. The highest point is in the Kugusem well at an altitude of 340 m, while the lowest point is in the northern part of the Kenderli-sor at around 52 m below sea level. Temperatures rise to 42 °C in summer and fall to -41 °C in winter. The average annual precipitation is just 120 mm. The visitor centre and main administration are located in Zhanaozen. The reserve currently has 403 species of plants, 32 species of mammals, 166

species of birds, 15 species of reptiles and 1 species of amphibians (REPUBLICAN STATE INSTITUTION "USTYURT STATE NATURE RESERVE 2025).

Ustyurt Plateau / Bozzhyra tract

The Ustyurt Plateau is a large plateau stretching over 200,000 km^2 between Kazakhstan and Uzbekistan. Parts of the plateau make up the eastern part of the planned Geopark. Ustyurt is a

Figure 39: Bozzhyra valley (Source: ADAMZHAN 2023)

word of Kyrgyz origin, with 'ust' meaning 'high' and "urt" meaning 'flat or plain'. The plateau is characterised by steep limestone cliffs known as 'chinks' at its edges. These are often multi-coloured in the Ustyurt Plateau area, creating an interesting layered visual effect. The plateau plays a special role in renewable energy in Kazakhstan, where research is being conducted into whether and how the strong wind flow can be harnessed using wind turbines (AYAGAN 2006: 307, KRYLOV u. GRIZIK 2015: 291–292, ANARBAEV ET AL. 2009: 55–57, AMIROV ET AL. 2015: 200–201).The Bozzhyra tract (meaning grey-blue land in Kazakh) is located in the middle of the Ustyurt plateau, about 100 km east of Zhanaosen. The Bozzhyra tract is a barren, erosion-

formed cold stone landscape in the middle of a limestone desert on the edge of the Ustyurt plateau. Here you will find limestone pillars up to 250 m high. One of the most impressive formations is called ‘Fangs’ and is visible from afar as you enter the area. The formation is around 200 m high (ADIBAYEVA ET AL. 2023: 22, ISKAKOVA ET AL. 2021a: 178, NATIONAL GEOGRAPHIC KAZAKHSTAN 2023b).

Karaman-Ata Necropolis

An important necropolis in the western part of Mangystau. The site contains Turkmen steles from the Middle Ages, gravestones, many saganatams (graves in the form of a fence with an open top and a small elevation at the head) and mausoleums (late 19th to early 20th century) built by masters of the Adai clan (e.g. Omir Karauly and Nazar Omiruly). The underground mosque of the same name, which is considered a holy place, is located here. According to tradition, this mosque is the successor to the nearby Shopan-Ata Mosque. Both sites are said to have been connected by an underground tunnel, but several collapses have left nothing of this construction. Similar to Beket-Ata, this mosque was also dug into the rock by hand. The construction dates back to the 13th century (KOSHIM ET AL. 2020b: 38, AYAGAN 2008: 370, SÖYLEMEZ ET AL. 2024: 295–296, AYAGAN 2005b: 148). The name of the ensemble, ‘Karaman,’ comes from Turkmen Mangystau traditions and the stories of the Sufi and poet Ahmad Yasawi. Here it is said that two young men named Akman and Karaman tried to slander Ahmad Yasawi, whereupon he turned them into dogs, and that the two dogs chased the people of the Abdal clan from Turkestan to Mangystau (KONDYBAI 2000: 30, KHASHIMOV 2001: 131, KOSHIMAVA 2010: 85).

Kenderly-Kayasan State Reserved Zone

The Kenderly-Kayasan State Reserved Zone is a nature reserve with state reserve status. It covers an area of 12,310 km^2. It occupies the entire south-western part of the planned Geopark. It is one of Kazakhstan's youngest protected areas and was only established in 2001. Its main task is to protect the desert in the region and, in particular, the houbara bustard and saker falcon bird species. The reserve is home to around 700 higher plant species, sixty mammal species, twelve species of lizards and ten species of snakes. Around 200 bird species visit the reserve

during the changing seasons, but only around 52 species nest here permanently (ZHANNAT 2020a; TERRA EXPLORATION 2025b; GIS TERRA 2025).

Kyzyl Kup (Tiramisu tract) / Mount Bokty

The area around Kyzyl Kup (Kyzyl means 'red' and kup means 'much, in the sense of abundant,' alluding to the abundant presence of red colour in the area) is one of the most famous sights in the Mangystau region. The rock formations made of colourful sandstone are also known locally as 'Tiramisu' due to their striking colouring and layering. The ensemble was formed from the ancient Tethys Ocean, which existed from about 250 to 60 million years ago. One of the most striking formations is Mount Bokty (Bokty means 'cake' in Kazakh), which resembles the hull of

Figure 40: Backside of a 1000 Tenge note, showing Mount Bokty (Source: Own Scan).

an upturned ship. It consists of layers of different coloured limestone, which are formed by, among other things, iron oxide deposits. Its maximum height is about 165 m. The aforementioned 'chinks' are particularly pronounced here. The mountain is depicted on the back of the Kazakh 1000 tenge banknote. The region is one of the driest in Kazakhstan, with very little rainfall throughout the year (NATIONAL GEOGRAPHIC KAZAKHSTAN 2023a, RASPAGLIESI 2020; ZHANNAT 2020b; MUKHATZHANOVA 2022; ADVANTOUR 2025, RASPAGLIESI 2020: 5).

Petroglyphs on the Airakty Mountain

On Mount Airakty in the north-west of the Geopark, there are petroglyphs depicting realistic representations of animals accompanied by extremely schematic symbols and Arabic inscriptions in Turkish languages. The so-called 'world view' is the name given to the petroglyph found in the south-east of Airakty, measuring 84.5 × 107 m. It is the work of the Aday nomads from the 18th to 19th centuries. These petroglyphs are specific to the Mangystau region (SERGEYEVA ET AL. 2021: 316; INTERACTIVE MAP OF HISTORICAL-CULTURAL PLACES OF MAGYSTAU REGION OF THE REPUBLIC OF KAZAKSTAN 2025; NURIEVA 2025).

Saikyrkum

This is a large, elongated sand dune west of the Ustyurt Plateau. The dune stretches from north-west to south-east for around 32 kilometres and is approximately 11 kilometres wide. The highest point is around 100 metres. In Kazakh, sai means 'sandy', kyr means "hilly" and kum means 'sand or desert', so the name means 'sandy, hilly desert' (PETROV 2025f, KOSHIMAVA 2010: 124).

Tamshaly Sai Canyon

The Tamshaly Canyon (Tamshaly means 'droplets' in Kazakh) is located on the north-westernmost border of the designated Geopark area. It stretches for around 12 km and connects the Caspian Sea with an oasis-like green landscape in the middle of the steppe. A special microclimate prevails here, which causes the water to irrigate the surrounding plants through evaporation (hence the name 'droplets'). The Tamshaly Waterfall of the same name is located here (FEDOROV 2021; SPITALER 2021, AYAGAN 2008: 546, KOSHIM ET AL. 2020a: 388).

Torysh (Valley of Balls)

Torysh, also known as the 'Valley of Balls', is located in the extreme north-western corner of the planned Geopark. The area, which covers approximately 120 km^2, is littered with spherical rocks of various sizes. Some of them are broken, while others reach a diameter of around six metres. The spheres consist of sedimentary rock and, according to current findings, are the

product of a million-year-long erosion process. Depending on the sediment, the colour spectrum of the spheres ranges from brown to beige to grey. The period of formation is now dated to the late Cretaceous and early Paleogene periods, between 70 and 50 million years ago. The area is a tourist attraction known beyond the region (KOSHIM ET AL. 2020a: 387–388; MUKSULOVA 2024; GEOLOGYSCIENCE 2024).

Figure 41: Valley of Balls near Torysh (Source: SHAHINA TRAVEL 2025b)

Tuyesu Kum

Tuyesu Kum (Camel Sands) is a large sand dune near the village of Senek. It is approximately 37 km long and 21 km wide. The entire dune covers an area of around 430 km^2. The highest point is 281 m. A special feature is that there are freshwater deposits at a depth of 3–41 m, which are used as a water supply. In summer and spring, the area is used as pasture (AYAGAN 2006: 249).

Ybykty Canyon

Ybykty Canyon (Ybykty means ‘narrow’ in Kazakh language) is located in the central part of the Mangystau Peninsula and in the western part of the proposed Geopark. It consists of sandstone

and is characterised by its 'holey' structure, reminiscent of honeycombs and coral reefs, which is why it is also called the Fishing Net Canyon. It is believed to be a remnant of the Neo-Thetys primordial ocean and was formed around 40 to 60 million years ago. Due to increasing aeolian erosion, the canyon is constantly changing and new 'holes' are being exposed. The individual sandstone features have an average height of between 3 and 6 metres (MUKHATZHANOVA 2023h; MONSE 2025, YAKUPOVA ET AL. 2024: 1223).

7.6. Burabay Geopark

The thing about geotourism in Kazakhstan is that you could basically turn the entire country into one big Geopark. There are few corners that are not geotouristically interesting and worth exploring. Nevertheless, the author has had to select a few significant regions for the purposes of this paper. One of the most significant regions in Kazakhstan for geotourism and tourism in general is the Burabay National Park. Known and loved throughout the country and beyond, it is a popular recreational area for the capital Astana as well as travellers from the furthest corners of the former Soviet Union. Its popularity is no accident and is certainly not (only) due to the excellent health resorts and mineral waters in Burabay.

The planned Burabay Geopark covers a total area of 7,118 km^2. Compared to the other case study sites, it is a relatively small park, which is also due to the fact that many attractions and Geopark elements are concentrated in a relatively small area. It's located in the north-central Kazakhs uplands (called Saryarqa which means 'Yellow ridge' in Kazakh language) approx. 225 km northwest of the capital Astana and 50 km south-eat of Kokshetau city. The subsoil consists mainly of hard crystalline rock, which is evident from the mountainous landscape on the surface. The soils are mainly composed of usual weakly and incompletely developed stony chernozems, low mountain usual chernozems and usual chernozems. In the southern area, usual calcareous chernozems are frequently found (See Figure 25).

The Geopark contains a national park and a zoological reserve, which has been incorporated into the park. It is also home to the UNESCO Biosphere Reserve Burabay and it is part of the UNESCO World heritage Saryarka – Steppe and Lakes of Northern Kazakhstan (UNESCO 2008).

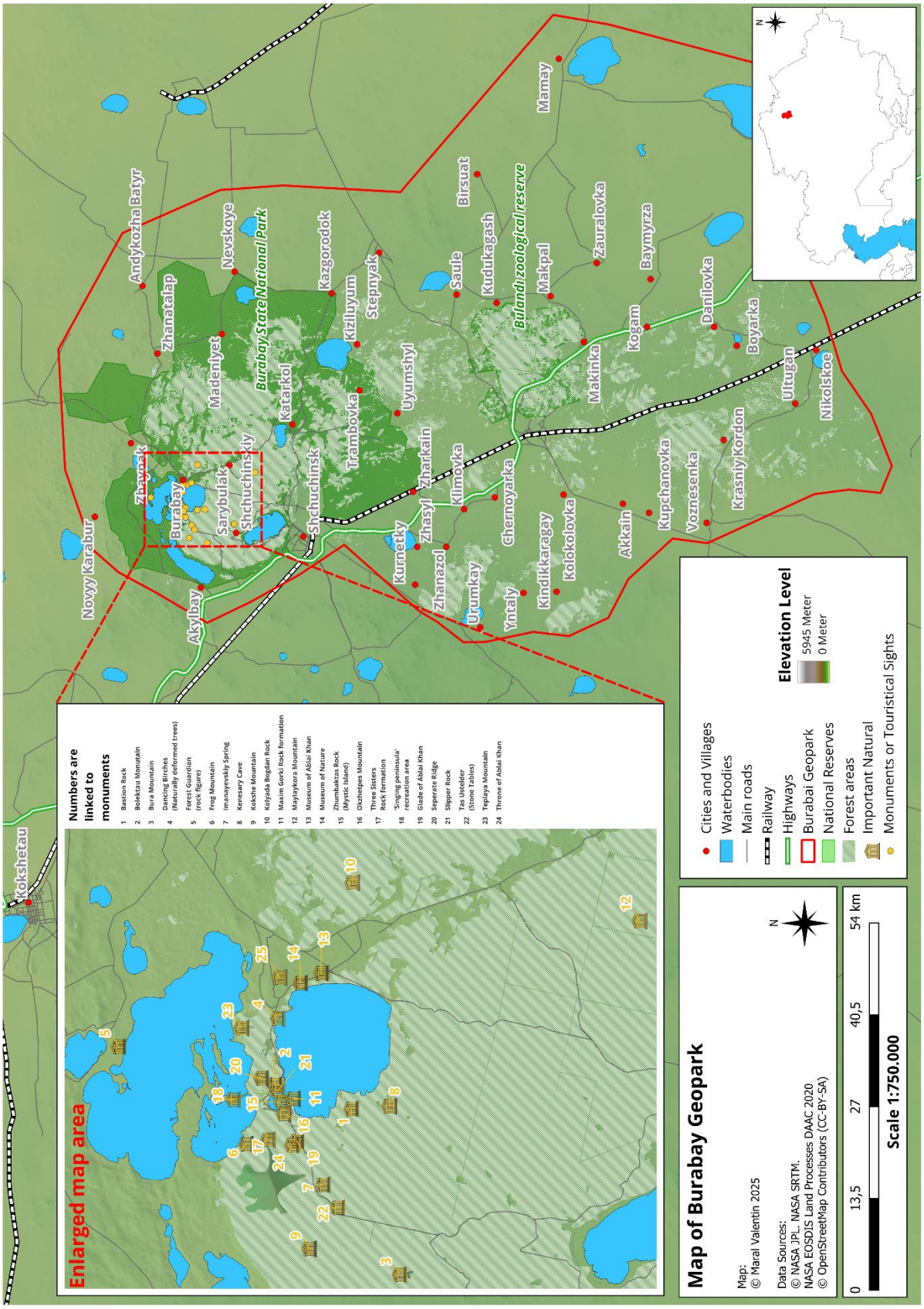

Figure 42: Map of the potential Burabay Geopark (Source: Own Design)

The transport infrastructure is adequate. The nearest regional airport is in Kokshetau. The Geopark is connected to the Kokshetau-Astana railway line via Shuchuchinsk and is heavily used. The road connections are interregional, and there is a well-developed motorway connection between Kokshetau and Astana.

State National Nature Park Burabay / Mount Burabay / UNESCO Biosphere Reserve Burabay

Burabay National Park is located in the north-western corner of the planned Geopark. It covers a total area of around 850 km^2 and includes the area of the town and lake of the same name. The name Borovoe, which is also used, is of Russian origin and means 'coniferous forest'. It was given by Russian settlers at the beginning of the 19th century. The history of the national park began in 1898 when it was established as a State Forestry Department. In 1935, the Borovoe State Nature Reserve was founded. In 2000, the area was elevated to the status of Burabay National Park State National Nature Park, and in 2010, the Bulandı Zoological Reserve was incorporated into the national park. The national park is one of Kazakhstan's most popular recreational areas and is known for its health resorts and mineral water, which is extracted in the region. In addition, the park offers countless attractions that are very popular with (geo)tourists (ATASOY ET AL. 2022: 1132–1134). The National Park includes also the Burabay UNESCO Biosphere Reserve which at its core covers an area of 140 km^2. It protects 840 species of higher plants, 277 species of vertebrates including fifteen species of fish, one species of amphibians, five species of reptiles, 209 species of birds and 47 species of mammals. This makes an amount of 36% of the total vertebrate fauna of Kazakhstan (KAZAKHSTAN NATIONAL COMMITTEE FOR THE UNESCO PROGRAMME "MAN AND THE BIOSPHERE" 2025c). One of the most important mountains in the national park is Mount Burabay (690 m), which gave the park, lake and town their names. Bura means 'formidable male camel with a white head and a body covered with black wool' in Kazakh (STATE NATIONAL NATURE PARK "BURABAY" 2025b; OREXCA 2025; BOROVOE.KZ 2025b, NURMUKHAMEDOVA 2012: 1, ATASOY ET AL. 2022: 1131–1132, OLZHBAEKOVA 2024). There is an important legend about how the name came about: 'In ancient, troubled times, there lived Bura, a mighty camel. He was huge and beautiful. Lonely

Figure 43: Buraby National Park Administration (Source: Own photo)

and silent, he loved to wander freely through the dense forests. Many times, the prophetic Bura saved people from disasters, the nomads idolized and revered him and called him the master of the land. But one day a fierce and fierce tribe appeared in those lands, who exterminated animals, ravaged villages. Bura, sensing the impending danger, warned the people. Having lulled Bura's vigilance, the robbers set a trap. They plunged poisoned arrows one after another into the sacred animal. Gathering his last strength and shedding bloody foam, Bura rushed at the enemies, crushing and trampling them. And when he sensed his death, he lay down near his favorite lake and froze, turning into a huge stone block. And the people still call this mountain and lake Burabai (NATIONAL CHAMBER OF ENTREPRENEURS OF THE REPUBLIC OF KAZAKHSTAN "ATAMEKEN" 2025c).'

Bulandı Zoological Reserve

The Bulandı Zoological Reserve is a zoological reserve located in the eastern part of the planned Geopark. Unlike most reserves, the focus here is on animal welfare. Most of its territory is in the

steppe zone, mostly plains with small hilly massifs. With an area of around 470 km^2, it is the largest of its kind in Kazakhstan. Most of the fauna consists of ungulates such as maral, elk and roe deer. It is managed by the Committee for Forestry and Wildlife of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan (TERRA EXPLORATION 2025a).

Dancing Birches (naturally deformed trees)

This is a birch grove on the north-eastern shore of Lake Buraby. The special thing about the birch trees here is that they are twisted at the bottom of their trunks, making them look as if they are dancing. There are several scientific theories as to why the birch trees have this curious deformation. One theory suggests that they are able to grow unimpeded and without interference from other trees in this open grove. This causes the trunks to bend in strong winds. In winter, the bending is exacerbated by the weight of snow. Another explanation attributes the bent trunks to soil displacement during the trees' growth. This phenomenon can occur in areas with tectonic faults, causing the trees to grow crooked instead of straight (OSPAN 2017; MUKHATZHANOVA 2024c). There is also a legend about the “dancing birch trees”: “One of them tells that once upon a time, at the foot of Mount Burabay, there lived a people who often celebrated great festivals with various competitions accompanied by singing and dancing. The Khan wanted to see this cheerful people. But he could not appear in his own form, for he knew that as soon as they saw him, they would be ashamed and would no longer behave so freely. So he went to the festival with only one guard, dressed in ordinary clothes. When the festival was in full swing, girls ran into the clearing, each one more beautiful than the next. The Khan was so enraptured by this breathtaking sight that he forgot himself and ran out, shouting, ‘Long live your beauty!’ The girls recognised the ruler and were so ashamed and frightened that they froze on the spot and turned into white birch trees. And so the Khan's wish came true. To this day, the beauty of the girls in the form of graceful birch trees attracts both locals and tourists.” (NATIONAL CHAMBER OF ENTREPRENEURS OF THE REPUBLIC OF KAZAKHSTAN "ATAMEKEN" 2025a).

Glade of Ablai Khan / Throne of Ablai Khan

The ‘Glade of Ablai Khan’ is a 125,000 m^2 clearing on the north-western shore of Lake Burabay. In 1991, a 35-metre-high white obelisk was erected here to mark the 280th anniversary of Ablai Khan. To the north is the ‘Throne of Ablai Khan’, a 5-6-metre-high natural rock formation, which is said to be the real throne of Ablai Khan. (ONLINE MAGAZINE ABOUT THE SPIRITUAL AND MORAL HERITAGE OF THE GREAT STEPPE 2017; STATE NATIONAL NATURE PARK "BURABAY" 2025a; DEPARTMENT OF CULTURE OF AKMOLA REGION 2025; SHAHINA TRAVEL 2025a, TLEUBAYEVA ET AL. 2023: 408, ORAZBEKOVNA 2024: 38–39).

Figure 44: Kenesary cave (Source: Own photo)

Kenesary cave

The cave is named after Kenesary Khan (1802–1847), the supposed last khan of the Kazakh Khanate and grandson of Ablai Khan. It is located on a small plateau not far from the south-western shore of Lake Burabay. Its shape is reminiscent of a nomadic yurt. It is up to 6 metres in diameter and 3 metres high. The cave can only be reached on foot. Inside the cave, there is a hole in the outer wall (KGU "CENTER FOR THE PROTECTION AND USE OF HISTORICAL AND CULTURAL HERITAGE" OF THE DEPARTMENT OF CULTURE OF THE AKMOLA REGION 2020; MUKHATZHANOVA 2024b; STATE NATIONAL NATURE PARK "BURABAY" 2025c, ORAZBEKOVNA 2024: 38, AKIYANOVA ET AL. 2019: 1238, AYAGAN 2005b: 206). Crawling through it is said to bring a long life. The Kazakh president's holiday residence is located near the cave, which is why the area is closely monitored by special military forces.

Kokshetau Mountain Ridge / Kokshe mountain

The Kokshetau ridge (Kokshe means ‘blue’ but in this context ‘green, in the sense of covered in green vegetation’ and tau ‘mountain’ in Kazakh language, also called in Russian Sinyukha “blueish mountain”) is a mountain ridge on the north of Saryarka steppe landscape. It’s a widely forested and lake-covered area. It stretches in the form of an arc from south to north for 20 km, and is 5 km wide. Kokshetau consist of granite-intrusive rocks. Comb layers were formed as a result of tectonic and erosive-denudation transformations, as a result of which mountain figures and caves appeared. Spruce, birch, mixed-leaved forest grows on the slopes, and grasses grow at the foot. The most prominent peak is Kokshe mountain. It is surrounded by the small Shabakty lake in the west and the large Shabakty lake in the northeast. Lake Burabay lies at its eastern flank. The highest point is recorded with 970 m while the ridge area stretches at 600 -700 m. The mountain is divided into a northern part, including the peaks of Kokshe, Bura, and Zhekebatyr. The south part includes the peaks of Aiyrtobe and Shortan. It consists of granites from the Devonian and Silurian periods. The slopes are heavily indented as a result of the formation of tectonic cracks, and denudation. The Kylshykty River originates from the mountain. Pine, birch, poplar and various shrubs grow on the podzolic soils of the mountain slopes and couch grass and other grasses grow in the valleys at the foot of the mountain on meadow soils (AYAGAN 2005b: 262; STATE NATIONAL NATURE PARK "BURABAY" 2025d).

Lake Burabay / Zhumbaktas Rock

Lake Burabay (old name Auliekol meaning ‘sacred Lake’ in Kazakh language) is an endorheic lake on the Kokshetau Elevation, in the Akmola Region, at the eastern foot of Mount Kokshe, at an altitude of 320.6 m above sea level. The overall Length is 4.5 km, the overall width 3.9 km, the average depth 4.5 m with a maximum depth of 7 m. The whole area is about 164 km^2. Situated in a rounded tectonic depression, the bottom is smooth, sloping to the north. The north,

Figure 45: Burabay lake and shores (Source: Own photo)

west and south banks are granite, the east is sandy. The water is soft, transparent, the bottom is visible at the greatest depth. It is separated from nearby lakes by small ridges. The unique landscape is created by the cliffs and capes of the northern, western and southern coasts, combined with pine and birch forests on the mountain slopes. In the vicinity the lake is home to a vast amount of holiday facilities (AYAGAN 2004: 465). In the north-west lies a small rocky island called Zhumbaktas, which means ‘stone-riddle’ in Kazakh language, another Name is ‘Sphinx’ or ‘Young-Old-Lady’, depending on which viewing angle the Rock looks either like a young

woman or an old Lady. Its height erects about 20 m above the water surface (SHURIYEVA ET AL. 2025: 205, IMANGULOVA ET AL. 2020: 79; QAZAQSTAN TARIHY 2025, ISKAKOVA ET AL. 2021c: 60).

Figure 46: Zhumbaktas Rock (Source: Own photo)

Mount Bolektau

Mount Bolektau (meaning 'lonely mountain' in Kazakh language) is an isolated single rock at shores of Burabay Lake. Its height is about 147 m. It is famous for its panoramic view of the surrounding area. In ancient legends, the mountain is compared to the tooth of a dragon that was killed there and immortalised as a stone (MUKHATZHANOVA 2023d).

Okzhetpes Rock

The Okzhetpes Rock (meaning 'the arrow will not reach' in Kazakh language) is a widely visible rock at the Burabay National Park. The height is approx. 300 m. From the top of the rock a well-known panorama unfolds, that shows the whole region of the Burabay national park. There are more than 16 legends surrounding the rock. One of them recounts the tale of a young Kalmyk woman during the 18th century, amid Abylai Khan's rule. As Kalmyk tribes were raiding Kazakh

villages, Abylai Khan led his army to fight them off. The battle was victorious for Abylai and he returned with trophies among which was a Kalmyk woman. Presented with the opportunity to choose her husband, she devised a unique challenge. Having climbed Okzhetpes, she affixed a white scarf to a stone, decreeing that whoever could hit it with an arrow would earn her hand. However, every man has failed this challenge. The disappointed girl chose to end her life and jumped off the rock into Lake Borovoe (AKIYANOVA ET AL. 2019: 1238, MUKHATZHANOVA 2023e; ORAZBEKOVNA 2024: 39; STATE NATIONAL NATURE PARK "BURABAY" 2025e; BOROVOE.KZ 2025a, ISKAKOVA ET AL. 2021c: 60).

Three sisters Rock formation

The 'Three Sisters' are a rock formation on the north-western edge of Lake Burabay. The formation is between 450 and 575 metres high. The largest rock (575 m), the 'oldest sister', is relatively close to Mount Kokshetau. The "middle" (475 m) and 'little sister' (450 m) are located to the south. The ensemble is also popularly known as the 'hedgehog' because, depending on the angle from which it is viewed, its appearance resembles the spines of a hedgehog (OLZHBAEKOVA 2024; MUKHATZHANOVA 2024a).

7.7. Conclusions on the possible Geopark Areas

Now that the various candidates for a potential Geopark in Kazakhstan have been adequately described, it must of course be evaluated which candidate would be most suitable as the first Geopark in accordance with UNESCO Global Geopark guidelines. The assumption that a Geopark already exists in the described area of the Aral Sea (see subchapter 7.8) does not affect the validity of the survey. In fact, the author was not previously aware of the existence of the aforementioned Geopark in the Aral region, which is why the considerations regarding a possible Geopark in the Aral area were based on different criteria. The most important difference, however, is that the Geopark planned by the author was designed from the ground up as a transnational Geopark, and Uzbekistan has certainly expressed an interest in international cooperation. It is essential that the Geopark is transferred to a UNESCO Global Geopark, if only to underline the international significance of the project.

Which is the best? Measurement methods for evaluating the Geopark potential for Kazakhstan

The author began by asking how the various potentials of the selected Geopark areas could be evaluated in a meaningful way. Since it was clear that a complete, detailed evaluation of every aspect relating to geoheritage and other topics was not feasible in this study, it was necessary to agree on a different evaluation method. This method was at least intended to enable a comparison of clearly existing potential. In developing a suitable system, the main focus was on the evaluation matrix for geopotential by (REYNARD ET AL. 2016: 46) and the guiding questions posed by (BRILHA 2018a: 69):

1. What makes an element of geodiversity exceptional?
2. How should the high value of geodiversity elements be identified and characterised?
3. How and why should geoheritage be assessed?

In view of the complexity of both the questions and the evaluation matrix (Figure 47), the author has adapted his system based on the above-mentioned components.

Geoheritage	Outstanding touristic value	Visiting conditions
Cultural Heritage	Protected areas	Touristic infrastructure
		International value

Table 6: Categories of the evaluation matrix (Source: Own design)

First, consideration was given to how the various components of the evaluation could be brought onto a common basis. To this end, seven categories were developed that form the basic framework of requirements for each of the Geoparks covered in the case studies. The various categories can be taken from Table 5. The categories will be discussed in detail later.

First, I will explain how the evaluation matrix works. The system essentially consists of two screens, an input screen and an evaluation screen, which function largely automatically.

Name of Geopark:

Geopark Altyn-Emel					
		Room for annotations		from 0 - 10	Weighting
Geoheritage	1.	Aktau Mountains	Final value:	8	2
	2.	Katutau Mountains			
	3.	Degeres Rocks			
	4.	Charyn Canyon			
	5.	Temerlik Canyon			
	6.	Moon Canyon			
	7.	Singing dune			
	8.				
	9.				
	10.				
Cultural Heritage	1.	Mynbluak Oasis	Final value:	5	2
	2.	Oshaktas Stele			
	3.	Tanbaly Tas petroglyphs			
	4.	Saka mounds at Besshatyr			
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
Outstanding Touristic value	1.	Singing dune	Final value:	6	1
	2.	Charyn canyon			
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
Protected Areas	1.	Altyn-Emel National Park	Final value:	5	0,75
	2.	Charyn National Park			
	3.	Altyn-Emel Biosphere Reserve			
	4.	Charyn Biosphere Reserve			
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
Visit conditions	1.	Safety	Final value:	3	0,75
	2.	Accessible by car (4WD)			
	3.	Partly remote place			
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
Touristic infrastructure	1.	Information Centre	Final value:	5	0,25
	2.	National Park Museum			
	3.	Kokpek village has all amenities for Charyn Canyon			
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
International value	1.	Only planned as an inland park	Final value:	0	0,25
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				

Figure 47: Input screen of the evaluation matrix (example) (Source: Own Design)

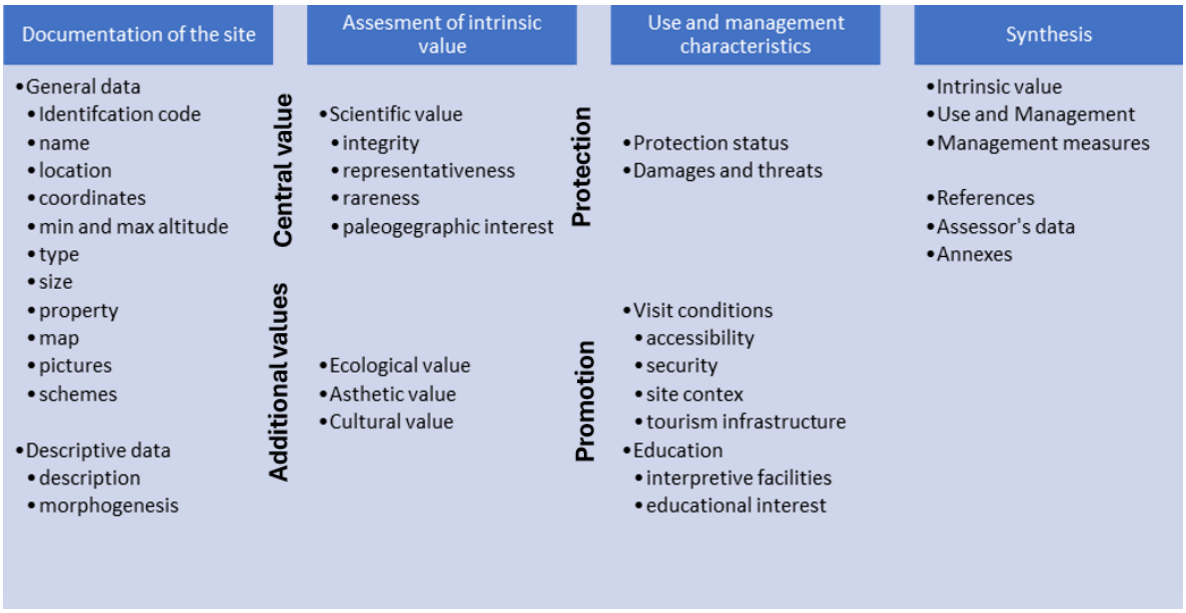

Figure 48: Geoheritage assement matrix (Source: own design according to REYNARD ET AL. 2016: 46)

Microsoft Excel was chosen as the medium because it is universally applicable for evaluations of this kind and can run on virtually any modern computer. The person who wants to evaluate a Geopark can do so using an input mask developed by the author (Figure 47). The name of the Geopark is entered here and each category has ten input fields. Here it is possible to list various components that are considered important or to make notes. If the lines are full, they can be dynamically extended downwards. The value determined by the evaluator is entered in the right-hand column 'Final value'. The value can be between 0 and 10, where 0 means no points and 10 is the best score. The evaluation form, which is completed for each Geopark, includes a visual system that helps the assessors see how the entered value affects the overall result before the final calculation. The system is designed as a traffic light system and follows its logic. A red value means a less favourable value, yellow stands for a passable value and green for better values. This function is achieved using conditional formatting, which automatically colours certain number ranges. These number ranges are red: 0 to 3, yellow: 3 to 7 and green: 7 to 10. It is noticeable that the middle range has the largest span. This is intentional, as otherwise the result would not be meaningful. The determination of the score is the responsibility of the auditor and is based on their expertise and ability to assess the facts correctly. For example, they may assign a final value of 9 for 'Cultural Heritage' if there are many culturally and historically significant entities in the relevant area. However, it should be noted that the mere existence of these entities does not result in a good rating. The condition and significance for

cultural heritage are also taken into account in the decision. As with all assessment systems involving human participation, the subjectivity of each assessor naturally plays a role in the

Weighting	Percentage	Topic
2	200%	Geoheritage
2	200%	Cultural Heritage
1	100%	Outstanding touristic value
0,75	75%	Protected Areas
0,75	75%	Visit conditions
0,40	25%	Touristic infrastructure
0,10	25%	International value

Table 7: Weighting values of the different matrix topics (Source: Own design)

assessment process. It is therefore advisable to ensure that persons with appropriate expertise and sufficient scientific neutrality are entrusted with the assessments. In order to show how the individual registered assessment values contribute to the overall result, it must be explained that all values follow a specific formal logic. The values are not chosen at random. Please refer to the formula box down below for the mathematical background.An important part of the evaluation process is the weighting of the individual points. The weighting used here was developed by the author based on her experience and the literature described above in this chapter. It was not easy to create a clear but equally fair weighting, because it was difficult to decide what was ‘important’ and what was ‘less important’. Ultimately, this process led to a compromise that proved useful in practical tests. The individual weightings can be found in Table 6: Weighting values of the different matrix topics (Source: Own design)for clarity. The weightings are also given here as percentages. If the weighting is 2, this corresponds to 200% of the weighting value or, in other words, twice the weighting value. When distributing the weighting values, it should be noted that the evaluation matrix was created for Geoparks, which is why purely tourist aspects are not necessarily the main focus.

The topic ‘geoheritage’ was given a weighting value of 2, as this aspect is an essential part of Geoparks and their content. It is simply not possible to operate a Geopark without an adequate level of geoheritage.

As this is a work in the field of geography, it is equally important not to lose sight of ‘cultural heritage’. The weighting was also set at 2 because, from a geographical point of view, cultural heritage and the associated connections are just as important (if not more important) in a Geopark as the pure geological fascination that a Geopark exerts.

A Geopark is, of course, a tourist attraction in a certain sense. Since not every visitor will have an eye for the cultural or geological features of the park, or will perceive them in the same way, the outstanding tourist value is rated as 1. It should be noted that geological and/or cultural assets can also have outstanding tourist value. The themes are not mutually exclusive.
Since each of the Geoparks in the case studies is based on an area with at least one protected area, these are taken into account in the evaluation. Protected areas have a certain tourist value but, due to their nature as protected areas, are not the primary core of a Geopark. Therefore, the weighting here is set at 0.75.

weighting		2	2	1	0,75	0,75	0,4	0,1		Maximum value	70
Number	Name of Geopark	Geoheritage	Cultural Heritage	Outstanding touristic value	Protected Areas	Visit conditions	Touristic infrastructure	International value	Total value	%	Rank
1.	Geopark Altyn-Emel	16	10	6	3,75	2,25	2	0	40	57,14	5
2.	Geopark Altai	20	8	7	6	3	1,2	1	46,2	66,00	3
3.	Geopark Aral	14	10	9	2,25	3	1,16	1	40,41	57,73	4
4.	Geopark Bozzhyra	20	14	10	3,75	6,75	3,6	0,5	58,6	83,71	2
5.	Geopark Burabay	20	16	9	5,25	7,5	4	0	61,75	88,21	1

The Ranking

Geopark Burabay	1
Geopark Bozzhyra	2
Geopark Altai	3
Geopark Aral	4
Geopark Altyn-Emel	5

Figure 49: Output screen of the evaluation matrix with ranking (Source: Own Design)

An important part of the evaluation matrix is the overall conditions for visiting one of the Geoparks. This includes the type of travel and means of transport, the condition of the tourist facilities or the park and its geological and cultural assets, as well as any tourist attractions that may be present. The level of safety also plays a role here, meaning the visitor's sense of personal safety.

Even in a Geopark, nothing would work without a basic tourist infrastructure. Topics covered here include, for example, adequate signage, maps, information centres/museums, accommodation/catering facilities where available, and sanitary facilities.

It goes without saying that this does not necessarily have to meet European standards in a country such as Kazakhstan. In order not to jeopardise a potentially good rating, a weighting of 0.40 is applied here.

Finally, the weighting for the topic ‘international value’ is determined. Contrary to what the name suggests, this refers to the Geopark's potential to expand internationally or transnationally. This certainly only applies to candidates on Kazakhstan's external borders, but it is too important an element to be overlooked. The weighting here is 0.1, as not all Geopark candidates can meet this criterion.

Once the evaluation form has been completed, the values entered are automatically transferred to the evaluation sheet and the final score is calculated. The highest possible value is 70, equivalent to 100%. An integrated formula calculates the percentage of the result in relation to the overall result to facilitate comparison, similar to school grades. The final results can then be taken from the evaluation sheet (see example Figure 49). Here, too, conditional formatting ensures colour coordination so that both the weighting result and the final result are visible at a glance.

Now that all potential Geopark sites have been evaluated, the results are available. The results can also be found in Table Table 7: Ranking of potential Kazakh Geopark sites (Source: Own design).

The formula box

The formulas used are explained briefly below. These are simple algorithms that are easy to use in Microsoft Excel. he formula for calculating the weighting w is as follows. R indicates the value that was entered as the rating in the evaluation sheet. w_v is the specified weighting value taken from the table:

$$w = R * w_v$$

The final value per Geopark is obtained by adding all w values. The percentage value p is calculated using the above formula. f_v stands for the previously added final value. 70 would be the maximum end point value that can be achieved.

$$p = \frac{f_v}{70} * 10$$

Geopark Burabay	**1**	**88,21 %**
Geopark Bozzhyra	**2**	**83,71 %**
Geopark Altai	**3**	**66,00 %**
Geopark Aral	**4**	**57,73 %**
Geopark Altyn-Emel	**5**	**57,14 %**

Table 8: Ranking of potential Kazakh Geopark sites (Source: Own design)

And the winner is...?

The favourite for the creation of a Geopark in Kazakhstan is the proposed Burabay Geopark. The reasons for this choice are briefly outlined below. Although the Burabay Geopark is a relatively small park, this is precisely its advantage. It offers many geoheritage sites in a relatively compact area, has a very well-developed tourist infrastructure and is also extremely important for Kazakhstan in terms of cultural history. This is mainly because the country still identifies

strongly with Ablai Khan and the last Kazakh Khanate, much of which took place in and around Burabay.

The runner-up, Bozzhyra Geopark, has much more geoheritage to offer than Buraby due to its location, but it lacks detailed tourist infrastructure. With investment in such infrastructure, Bozzhary would even be a good candidate for a transnational Geopark. The already shared Ustyurt Plateau would offer opportunities for partnership with Uzbekistan, or completely new paths could be explored with Turkmenistan. However, given the current diplomatic situation, this is more a matter for the future.

7.8. Ideas from Abroad – Can Kazakhstan profit from Geoparks in other countries?

Kazakhstan is undoubtedly on the verge of joining the Geoparks community. How this step will be taken is not yet entirely clear. The biggest problem is the current lack of the structure needed to effectively designate, plan and operate Geoparks in Kazakhstan. The details have already been reported in other chapters. This subchapter deals with the question of whether and to what extent it makes sense for Kazakhstan to seek help or advice in an international context. Even though politicians generally consider it best to reinvent the wheel, the author considers this approach not only inefficient but also too time-consuming. The fact that Kazakhstan is interested in its own Geopark system has already been described in the text. The question here is where inspiration for a national Geopark administration system could be found. As the author is currently in Germany for study purposes and one of the highest quality national Geopark systems exists there, it makes sense to take a closer look at it and see whether and how such a system or components of it could be implemented and used in Kazakhstan.

System of National Geoparks in Germany

In 2002, Germany decided to award the ‘National Geopark’ certification (NATIONALER GEOPARK 2025). The initiative came from the Federal/State Committee for Soil Research (BLA-GEO). Since then, the number of national Geoparks has risen to 19. The certification is carried

Figure 50: Structure of the Certifiaction Commission and Certification process (Source: Own design according to BUND-LÄNDER-AUSSCHUSS BODENFORSCHUNG 2018)

out by a ten-member certification commission. The certification follows a uniform and defined process (see Figure 50).

Criteria for NATIONAL GEOPARKS in Germany

- Geoscientific significance
- Size
- Geotope and nature conservation
- Education, research
- Economy and tourism
- Staff, equipment and quality assurance
- Management plan

Figure 51: Criteria for NATIONAL GEOPARKS in Germany (Source: Own Design according to BUND-LÄNDER-AUSSCHUSS BODENFORSCHUNG 2018)

There are also a number of criteria that must be met in order to obtain the status of a 'National Geopark' in Germany (see Figure 51). The first and most important criterion concerns geoscientific significance, i.e. a potential Geopark must comprise a contiguous area with geologically significant features, including nationally significant geological sites (known as geotopes). The significance is reflected in the importance for Germany, the unique beauty or the rarity of the attraction. It is important that the geoscientific significance has been confirmed by an SDG expert. It is also important that the park includes non-geological attractions. These include, for example, cultural or historical attractions .

The second criterion is size. National Geoparks in Germany should be of 'appropriate size' to fulfil their tasks. In practice, this means that a Geopark should be between 300 km^2 and 2,000 km^2 in size. Even though a 'national Geopark' does not constitute a separate category of protected area, certain geological features (geotopes) in the designated area must be preserved. This is particularly important if this information provides insights into geoscientific sub-disciplines such as geography and geology. Geoparks are required to work with the relevant authorities to ensure that the designated geotopes are protected. In addition, a register detailing the condition of the designated geotopes must be created as part of the management plan for a

Geopark. The proper maintenance of the geotopes must be ensured (BUND-LÄNDER-AUSSCHUSS BODENFORSCHUNG 2018: 2).

Education, research and sustainable development are central aspects of a Geopark. Sights must be made accessible to the public and linked to each other. A tourism concept must be submitted by the Geopark operator. This concept must be didactically geared towards promoting basic geoscientific knowledge and education for sustainable development. Other institutions in the Geopark should also be involved in the measures. Other partners such as universities, schools or private individuals may also be involved .

What is special from an economic perspective is that the economy also plays a role in Geoparks. Geoparks are intended to promote sustainable (economic) development. They communicate the concept of sustainable tourism and cooperate with regional stakeholders to this end. It is important that Geoparks have at least one visitor centre/information centre. Educational trails and hiking trails should also be available. In addition, information material in print and on information boards should be provided on site. Tours and guided tours should be offered that follow an educational concept and are ideally available in several languages.

It is important that the operator of a Geopark can demonstrate that it has sufficient staff and financial resources to operate. An office is mandatory. Specialist staff from the fields of geosciences, tourism and regional development must be available. Tasks may be outsourced. Quality control is the responsibility of the Geopark (BUND-LÄNDER-AUSSCHUSS BODENFORSCHUNG 2018: 3).

Last but not least, a potential Geopark must submit a management plan. The purpose of this plan is to collect and set out the desired objectives (i.e. the raison d'être of the Geopark). It serves as a kind of guide, as it also contains the planning and action concept for the Geopark.

According to the guidelines for national Geoparks, the most important components of the management plan are (BUND-LÄNDER-AUSSCHUSS BODENFORSCHUNG 2018: 4):

- The definition of the Geopark's objectives and measures
- Geopark management
- Financing plan
- Protection of geotopes, preservation of geotopes and maintenance of geotopes
- networking (various partners such as social groups, authorities, economic stakeholders)
- Concepts and investment measures for the development of Geoparks
- Public relations
- Monitoring / quality assurance

Once all these requirements have been met, they are summarised and written down in a single plan. As mentioned above, this plan serves as the de facto basis for the operation of a future Geopark.

The question that arises is which components of the national certification process in Germany can be meaningfully implemented in Kazakhstan. There is a fundamental difference in terms of responsibility. In Kazakhstan, there is no uniform or generally responsible body or institution responsible for the designation, naming and even certification of Geoparks. Matters relating to UNESCO Global Geoparks are handled by the National Committee for UNESCO Global Geoparks which is a subsidary of the Ministry of Foreign Affairs of the Republic of Kazakhstan. The problem is that there is no uniform legal definition of Geoparks. Potential Geoparks are often created, defined and designated by regional authorities in cooperation with the administration of protected areas (e.g. national parks) in the area of the potential Geopark. However, due to a lack of criteria, there is no ‘certification’ in the sense of a national Geopark in Germany.

Implementation of German criteria in Kazakhstan

This makes it all the more important to define the criteria that could be applied in this case if a uniform national Geopark certification system were to be established in Kazakhstan.

Criteria that would be appropriate for Kazakhstan	Criteria that do not appear to be appropriate for Kazakhstan
Geoscientific significance Size Education, research Economy and tourism Staff, equipment and quality assurance	Geotope and nature conservation Management plan

Table 9: Comparison of the criteria for National Geoparks in Germany with the situation in Kazakhstan (Source: Own Design)

With reference to Figure 51, a comparison between the existing criteria in Germany and the criteria to be implemented in Kazakhstan is provided below. The criteria for Kazakhstan can be found In Table 8

Among the selected criteria that would apply to Kazakhstan, geoscientific significance is definitely one of them. It is already the case today that Geoparks in Kazakhstan are selected on the basis of their abundance of geological attractions. However, unlike in Germany, there is no structured process for this, and it is easy to find oneself using the word 'arbitrary'. According to all the information available to the author, potential Geoparks must have a large number of the geological attractions mentioned above, which must also be described in great scientific detail (e.g. in papers, articles, etc.). Thus, the 'scientific' degree of recognition is the decisive criterion for the establishment of a Geopark in a particular region. Kazakhstan could benefit from the German system in that the award criteria would be more transparent and easier to understand. Assessment based on the number or frequency of scientific publications on specific geological entities is not particularly universal. Above all, the number and quality also depend on the size of Geoparks, which are generally not all the same size. It would therefore be good to have clear and transparent guidelines that apply equally to all Geoparks in Kazakhstan.

One feature that can and should obviously be applied in Kazakhstan is the size of Geoparks. It can be assumed that the size of Geoparks in Kazakhstan differs considerably from that in Germany, not least because Kazakhstan has a much larger area than Germany. Nevertheless,

it is important to specify a certain size in the guidelines. Otherwise, it would be possible for a system of Geoparks to develop that not only vary in size but also in (regionally determined) performance. This would be a disadvantage for the various regions. It should also be noted that a Geopark must have a certain minimum size in order to be functional on its own. This must therefore be taken into account in any potential system in Kazakhstan. Ultimately, it also has to do with the fact that Geoparks are easier to compare statistically within a certain size range.

The criteria relating to education and research as set out in German Geoparks are also suitable for a possible Kazakh model. Existing Geoparks already promote both research interest and the (local) involvement of educational institutions. The importance of these two components is not unknown in Kazakhstan, but due to the lack of uniform guidelines, they are not applied equally everywhere. This brings with it major disadvantages in the course of a Geopark's existence. In particular, the involvement of at least local educational institutions creates awareness of the geological and cultural-historical heritage in the region concerned. It must also be a concern in Kazakhstan to cultivate this awareness so that future generations are aware of the value of their country and their region. These are simple but effective strategies and implement what is known in Germany as ‘education for sustainable development’. The above-mentioned concept is currently unknown in Kazakhstan, but this could change fundamentally with the establishment of Geoparks and the corresponding guidelines.

Economy and tourism are also important factors when it comes to Geoparks in Kazakhstan. According to Dr Burlibayeva, local governments and the National Committee for UNESCO Global Geoparks see Geoparks as both a tourism factor and an economic factor. This is only too understandable, as tourism (and consequently the economic impact) is a key consideration when designating Geoparks. The aim here is to enable the local population to gain additional income. It is therefore important to include regulations on tourism marketing and economic use in a potential Kazakh Geopark system. Unlike the German guidelines, however, these rules must be clearer and much more precise in order to prevent or curb economic sprawl in Geopark areas.

Regulations on personnel, equipment and quality assurance are also considered a useful part of the guidelines. It is necessary that clear regulations exist in a possible Kazakh system. A

minimum number of staff must be specified, as well as the provision of equipment and the responsibilities for financing. One thing is that Geoparks in Kazakhstan are also seen as economic enterprises that are expected to generate economic output in a certain sense. However, it is often the case that the profit intentions far exceed the investments. This can be a problem for Geoparks, especially when savings are made on important things such as staff or equipment that prove to be essential for operations (e.g. investment in signage, which is often available in Kazakhstan but is not maintained after a while due to a lack of financial resources and then falls into disrepair). It is also important to set standards for quality assurance, especially with regard to applying for UNESCO Global Geopark status. Here, it makes sense to start quality assurance right from the start of a national Geopark system so that in future, not only will comparative values be available, but it will also be possible to measure performance against international standards. It is well known that such monitoring can be flawed when carried out by in-house staff, so it would be worth considering outsourcing quality assurance in order to establish a uniform standard across the country.

The question of why some criteria do not appear to be appropriate for Kazakhstan is answered briefly. Geotopes and nature conservation are already regulated by a large number of (strict) laws in Kazakhstan. As Geoparks are subject to these national laws, it seems logical that this criterion would be superfluous, as it would then be duplicated. In addition, the classification ‘geotope’ used in Germany has a different meaning in Kazakhstan and does not mean the same thing as in Germany. This would therefore lead to confusion.

A management plan does not appear to be a useful criterion either, as such entities (this also applies to national parks, for example) already have similar structures in Kazakhstan due to their self-administration. These result from administrative responsibilities and budgetary requirements. This criterion can therefore be ignored in the certification process, as it is already an integral part of the respective institution by law.

Finally, when talking about the German Geopark system, it should be noted that certification as a NATIONAL GEOPARK is not permanent. A re-evaluation takes place every five years to ensure that the quality of the Geopark remains consistent. The review is also carried out by the ZNG mentioned above. To initiate the re-evaluation, a progress report must be submitted to the ZNG

at least three months before the end of the certification period. This progress report follows the same format as the application documents for initial certification. The aim is to determine whether the Geopark has undergone any changes since the last evaluation or since its establishment. It is important to have a sufficient data basis and, in the case of a previous evaluation, to address the points of criticism. After a successful evaluation, recertification is granted for five years. If the evaluation is not successful, an action plan to remedy the identified deficiencies must be submitted within three months. A period of 24 months is estimated for remedying the deficiencies. If the deficiencies are not remedied, the Geopark loses its certification and may no longer call itself a NATIONAL GEOPARK. For Geoparks that are also UNESCO Global Geoparks, similar rules apply to recertification in accordance with the UNESCO procedure. If a UNESCO Global Geopark loses its status as such, it is automatically subject to the rules for NATIONAL GEOPARKS in Germany (BUND-LÄNDER-AUSSCHUSS BODENFORSCHUNG 2018: 5–6).

This point is particularly interesting for Kazakhstan, as a post-evaluation is not only useful (and mandatory) in the case of UNESCO Global Geoparks, but also has its place in a potential national Kazakh system. At the national level, the relevant supervisory authorities can ensure that a Geopark does not misuse its title as a 'tourist trap' and thus bring other certified parks into disrepute. In addition, the evaluation enables continuous monitoring of the performance of the Geoparks and reveals the weaknesses and strengths of each individual Geopark. It must be made clear that the certifications are not simply a sticker that is affixed somewhere and then remains there forever, but rather a system that visitors can rely on to receive high-quality tourist services.

7.9. Invisible Geoparks in Kazakhstan? - A brief look at Kazakhstan's first Geoparks

Based on everything that has been discovered in this work so far, one could conclude that Kazakhstan is a blank slate in the field of existing Geoparks. There seem to be many approaches and some initiatives, but no concrete projects or, ultimately, Geoparks. But is that really true?

Just before this thesis was printed, as a kind of 'last minute' information, it was possible to obtain information through the GIZ office in Kazakhstan about the situation of Geoparks in Kazakhstan. There, the author was informed that GIZ had indeed participated in the conference mentioned above and had also supported the development process of the Geopark. It was confirmed that the 'Aral Geopark' has now been open and operational for about a year and, what is more, was the first Geopark ever to be submitted to UNESCO for the award of 'UNESCO Global Geopark' status. This is largely thanks to the newly founded or re-established National Committee for UNESCO Global Geoparks in Kazakhstan. This information was provided by Dr Diana Burlibayeva, Head of the Department of Ecology and Sustainable Development at the Executive Board of the IFAS, and was received by the author shortly before going to press. Through this contact, it became known that there is another official and already opened Geopark in the border region of Jambyl and Turkistan region, northwest of the city of Turkistan. Its name is Ulytau Geopark. Unfortunately, the amount of information available about this Geopark is also rather limited. According to Dr. Burlibayeva, there are currently two other potential Geoparks awaiting state recognition and a few more initatives. The two Geoparks awaiting recognition are, Karatau Geopark and Zhetisu Geopark. There is virtually no information available about these Geoparks, either in press articles or on websites. No literature can be found on any of the Geoparks mentioned, as they are too new. Scientific support appears to be sporadic and limited to internal PowerPoint presentations and drafts.

Geopark Aral

During the research for this paper, especially in the region around the Aral Sea, one term kept cropping up in the results of the 'Geopark Aral'. At first, the author thought it was a concept that was in the planning stage and possibly nearing completion. This was mainly because she was not aware of the opening of a Geopark in Kazakhstan through the media, the internet or other sources of information. This would have been quite a sensation. One would expect all the pomp and circumstance, government officials, UNESCO representatives and so on. But none of that happened in the big way. It was more of a quiet 'Hello, here I am,' and judging by the sources found, media attention seemed to have been very limited. All that can be found about the supposed opening is a press release (at first glance undated) on the homepage of the supposed Geopark (GEOPARK ARAL 2024), as well as copies of the content on other websites and a few

Figure 52: Map of the new Geopark Aral (Source: GEOPARK ARAL 2025e)

Figure 53: Advertisement for the international conference ‘Aral Geopark’ (Source: GLOBAL GEOPARKS NETWORK 2025)

posts on social media profiles, at least one of which belongs to the Geopark itself (KAZARAL.ORG; ECIFAS.KZ 2025; GEOPARK ARAL 2025d; CAREC 2025). Further research revealed sporadic entries, mainly limited to social media platforms. One of the articles mentions that the Geopark intends to apply for the title of UNESCO Global Geopark. The UNESCO Global Geopark Council has not received any such applications at this time (UNESCO 2025e; EXECUTIVE COMMITTEE OF THE INTERNATIONAL FUND FOR SAVING THE ARAL SEA 2025). An article mentions Saida Nigmatova, Chairperson of the National Committee of Kazakhstan for UNESCO Global Geoparks, who refers to a ‘global’ Aral Geopark. However, the question of the status of the application for UNESCO Global Geopark remained unanswered (24.KZ 2025).

Of particular interest was a shared post originating from the Global Geopark Network (GLOBAL GEOPARKS NETWORK 2025), advertising a conference to be held in May 2025 (see Figure 53). It is interesting to note that the conference was apparently funded by the German development organisation GIZ. There is also a media report by a local TV station covering the opening (QYZLORDA TV 2025).

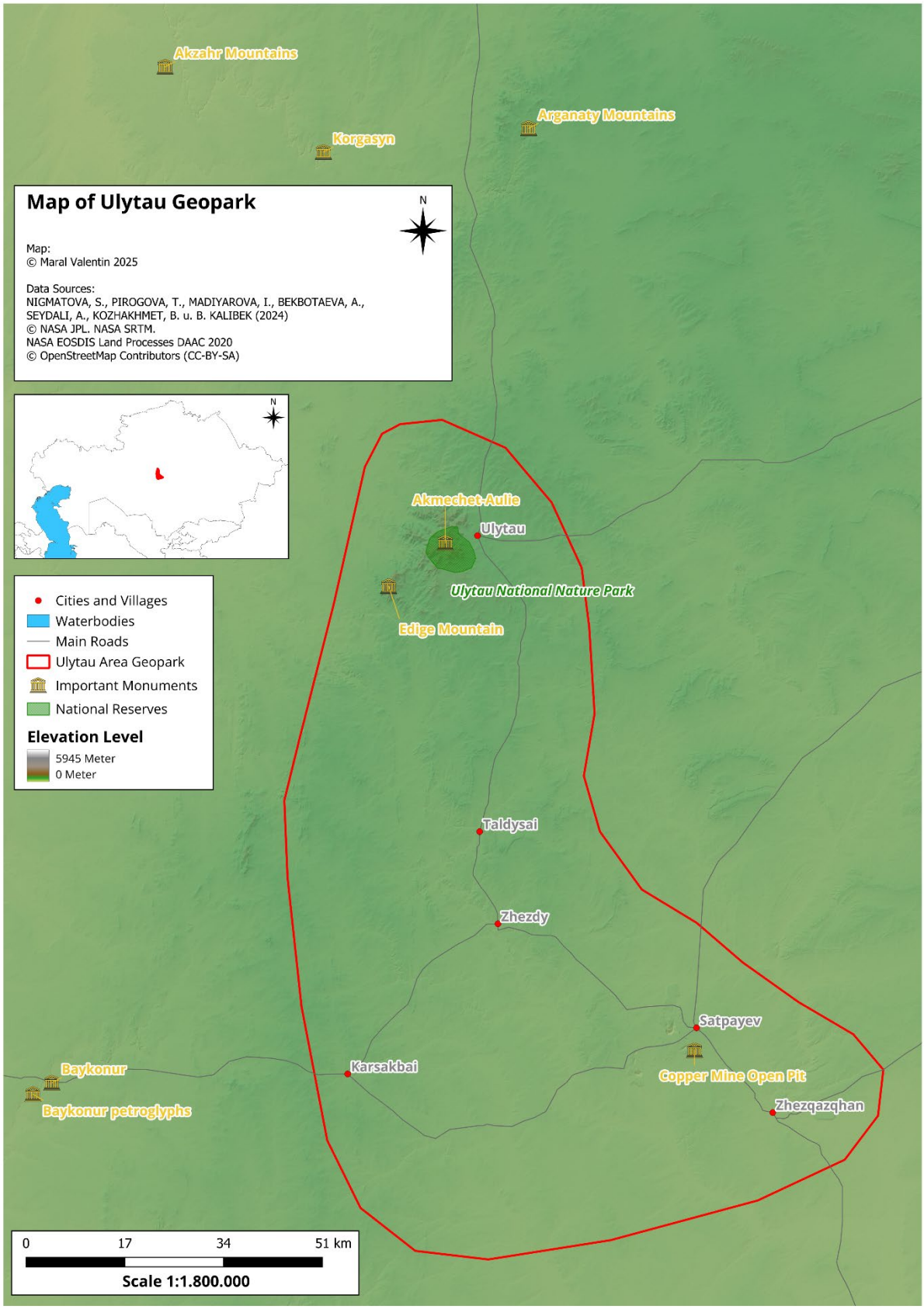

Figure 54: Map of Geopark Ulytau (Source: Own Design according to NIGMATOVA ET AL. 2024: 2)

Ulytau Geopark

The second official and recently opened Geopark (end of May/beginning of June) is the Ulytau Geopark. Due to its recent opening, there is currently very little information available about the park's ‘active operations’. Dr Burlibayeva informed the author that, at the time of going to press, there was no website for the Geopark. There are also no entries on social media platforms. A few online news portals have reported on the opening. However, there is a scientific paper dealing with the establishment of the Geopark, which is used as the main source for the information in this paragraph. It should be noted that the scientific paper is a draft from 2024. It is currently unclear whether the boundaries of the Geopark described in the paper correspond to the actual boundaries, as no map of the current Geopark is available. What is striking is that some of the sights mentioned are located far outside the boundaries of the Geopark as depicted in the paper. Whether this is intentional or a matter of planning freedom cannot be determined.

The Ulytau Geopark is located in central Kazakhstan in the triangle formed by the towns of Ulytau, Zhezqazqhan and Karsakbai. It is approximately 420 km southwest of Astana. The area covers approximately 8,255 km^2. The Zhezqazqhan-Ulytau region belongs to the fold belt in central Kazakhstan, which is the result of long-term denudation. The northwestern part is rather mountainous, while the south and southwest are characterised by flat hills that extend into the Shu-Sarysu plains. The highest mountain in the region is Mount Akmechet-Aulie, which is about 1,133 m high. The Ulytau mountain range consists of weathered granite and reaches average heights of between 400 and 600 m, with local exceptions such as the mountain of the same name. Devonian red sandstones predominate in the lowlands of Kyshtau and Zhaksy-Arganaty. The highest elevations reach 700 m, with an average relative height of 30 to 40 m (NIGMATOVA ET AL. 2024: 5–6). The region is famous for its copper deposits and has a long mining tradition (NIGMATOVA ET AL. 2024: 2). The soils in the region consist mainly of incomplete developed stony soils, brown soils and weakly developed stony soils, as well as automorphic solonetzs. The subsoil consists mainly of sandy and loamy rocks (see Figure 25). Geologically rock formations from the Ordovician, Devonian, Carboniferous and Permian periods can be found (NIGMATOVA ET AL. 2024: 12). The geological history of Kazakhstan over the last 200 million years is depicted in the Geopark (DANDYBAEVA u. UZDIKBAEV 2025).

Figure 55: Zhezqazqhan copper mine (Source: A.Bekbotaeva (NIGMATOVA ET AL. 2024: 15))

The largest mining town is Zhezqazqhan, where copper and other non-ferrous metals extracted in the region were smelted during the Soviet era. Due to the intensive mining, the Geopark's main theme is the history of the mining industry (NIGMATOVA ET AL. 2024: 4, NIGMATOVA ET AL. 2024: 17). The opening of the Geopark is expected to increase visitor numbers and thus also the impact of tourism on the region's economy. Last year, the region welcomed over 30,000 visitors, and it is hoped that this figure will rise thanks to the Geopark (TENGRI TRAVEL 2025).

Settlements	Natural Monuments	Cultural Monuments	Industrial Monuments
Baikonyr Village	Arganaty Mountains	Baikonyr village rock paintings	Ancient Lead Mines
Karsakpay Village	Akmechet-Aulie Mountains		Annenskaya mine
Satpayev City	Ayrtau Mountain		Zhezdy industrial heritage
Taldysai Village	Bulanty River (Baikonyr)		Zhezqazqhan mine
Zhezdy Village	Edyge Mountain		
	Cave of Keiki Batyr		
	Zhezdy River		

Table 10: Geosites in the Ulytau Geopark (Source: Own design according to NIGMATOVA ET AL. 2024: 29)

The most important geosites in the Geopark region (see Figure 54) are described below. Whether all of these attractions are currently part of the newly opened Geopark is still unclear and unfortunately cannot be determined at this time.

Since the main theme of the Geopark is the heritage of mining and its history, the Zhezqazqhan and Annenskaya mine complexes are discussed first. Near the town of Zhezqazqhan, there are cuprous sandstones that have been mined on an industrial scale for a long time. Here, visitors will find interesting mines operating in large open pits. What is special here is that over 26 different ores can be found in nine different ore horizons. The copper deposits are located at a depth of 300–350 metres. The mining areas are characterised by sandstone formations, sandy clays and siltstones (NIGMATOVA ET AL. 2024: 14–15). Between the 1950s and 1970s, further mining settlements (Satpaev and Nikolsky) were established. The Annenskaya mine near Satpaev was opened in 1985 and has a distinctive mine head that is visible from afar (NIGMATOVA ET AL. 2024: 17).

Around 90 km west of Zhezqazqhan lies the museum village of Karsakpai. The museum is entirely dedicated to metal smelting and processing, as well as metallurgy. The first metallurgical plant in Kazakhstan's central steppes was built here at the beginning of the 20th century. The village has a museum dedicated to Kanysh Imantayuli Satbayev, one of the most important and famous geologists in Kazakh history (NIGMATOVA ET AL. 2024: 17–18). About 55 km west of Karasakpai is the small village of Baikonyr which should not be confused with the cosmodrome of the same name, which is located about 320 km southwest of the village, where you can find examples of rock paintings (see Figure 56) from the Bronze Age, early Iron Age and the Middle Ages. The themes range from various animals to camel caravans and depictions of horsemen (NIGMATOVA ET AL. 2024: 19).

Figure 56: Baikonyr petroglyphs (Source: Alexander Petrov according to PETROV 2025d)

About 34 km northeast of Karsakpai is another nationally renowned museum village called Zhezdy. The village is famous for its unique mining museum, which tells the story of copper mining and processing in central Kazakhstan. The museum covers an open area of around 3 hectares and has a covered exhibition space of around 90,000 m^2. There are over 15,000 exhibits on various aspects of Kazakh mining history, including mining vehicles, ore samples, dioramas, etc. A special feature are two reconstructed smelting furnaces from the Bronze Age, which depict a complete Bronze Age copper smelter. There are also copies of the petroglyphs from the Terekty-Aulie gorge (NIGMATOVA ET AL. 2024: 19–21).

Near Zhedsy, at the confluence of the Ulken Zhedsy and Bala Zhedsy rivers near the village of Talysai, there is a large archaeological excavation site that represents one of the largest Bronze Age smelting works in Kazakhstan. Here, traces of local copper processing on an 'industrial' scale have been found, proving that metal products were a core part of regional trade. Thermal engineering structures have also been found here that are not found anywhere else outside Kazakhstan. It is speculated that this place is part of the supposed 'Copper Road', which is believed to have served as an international trade route long before the Silk Road. This trade route is believed to have been used to transport metal products made of copper, bronze, gold and

silver to West Asia and Greece. This road is also mentioned in Herodotus' 'History' as the Steppe Road (NIGMATOVA ET AL. 2024: 21–23).

Figure 57: Uytau Mountains (Source: SATUBALDINA 2021)

One of the Geopark's main attractions is undoubtedly the Ulytau Mountains. Ulytau means 'large mountains' in Kazakh. The massif consists of Precambrian and Palaeozoic components. It stretches from north to south over 200 km (NIGMATOVA ET AL. 2024: 23–24). The highest peak is Mount Akmechet-Aulie at 1,131 m. It is located about 2 km west of the town of Ulytau and consists of granodiorites and granites. The mountain is also considered a place of pilgrimage and probably had this status as early as the Bronze Age. According to tradition, the graves of seven Sufi healers are located on the mountain (NIGMATOVA ET AL. 2024: 24). Another mountain in the Ulytau complex is Mount Edige. It has a height of 1,063 m. It is located about 33 km west of Akmechet-Aulie. It is named after Edige, an orator who lived between the 17th and 18th centuries. He is known for uniting the Kazakhs against the Dzungars. The mountain is also home to the tomb of Tokhtamysh, a famous khan of the Golden Horde. The mountain is known for its pink-red granite, which forms a mattress-like structure (NIGMATOVA ET AL. 2024: 24).

Another geosite is located north of Ulytau. The Arganaty Mountains stretch for around 80 km. The highest point is Mount Dondygul at 757 m. The mountain range is framed by various lakes, including Koskol and Kamystykol in the west and Barakkol, Kurkol and Basbaital in the east. The springs on the mountain are considered to have healing properties (NIGMATOVA ET AL. 2024: 25). At the foot of the Araganaty Mountains on the banks of the Karatorgai River is the Keiki Batyr Cave (NIGMATOVA ET AL. 2024: 24). At the end of the 19th and beginning of the 20th centuries, this cave was a refuge for fighters of the Kazakh liberation army who opposed the 'red troops' of the Soviet army. The cave is named after the folk hero Keiki Batyr, who was a legendary shooter and one of the leaders of the rebel army of the national liberation movement in 1916–1917 (PETROV 2025b).

Figure 58: Arganaty Mountain Range (Source: D. Rugis, A. Seidali according to NIGMATOVA ET AL. 2024: 26)

There are also remnants of lead mining in the region, particularly near the village of Korgasyn on the Karatorgai River. Korgasyn means 'lead' in Kazakh. Although the lead deposits are almost exhausted, the legacy of a long-standing mining operation can still be seen here. The tunnels dug into the rock bear witness to a lively past (NIGMATOVA ET AL. 2024: 27).

The last geosite described here is the Akzahr Mountains. This hilly area is located about 35 km northwest of Korgasyn. The highest peak is Mount Akzhal at 367 m in the southern part of the range. The massif consists mainly of clay and gypsum and is known for its spectacular colours. The palette ranges from yellow to red and purple. The semi-arid climate is largely hostile to life, so the fauna is limited to lizards, snakes and insects. Large birds of prey have their nesting sites here (NIGMATOVA ET AL. 2024: 28).

With regard to future Geopark projects, it would have been helpful to find out more about the development process and administrative structure of the Ulytau Geopark. Unfortunately, it was not possible to obtain any further information about the Geopark as a whole. Enquiries to the relevant authorities were also unsuccessful. We were referred to a website that is to be launched in the near future. All in all, a rather unsatisfactory solution, but better than coming away empty-handed from a Geopark in Kazakhstan that does at least exist.

8. Conclusions

Now that this work is almost complete, it is time to analyse and evaluate the findings. In the course of the research, it became clear that the topic of Geoparks, but also geoheritage, is anything but a straightforward one. There are many people with whom one can come into conflict in all sorts of areas. First, an attempt will be made to identify the biggest problems that stand in the way of establishing Geoparks in Kazakhstan:

1. The problem of lack of knowledge

Throughout the research and during our stays in Kazakhstan, one thing became very clear above all else. At the decision-making level in Kazakhstan, there is simply too little knowledge about Geoparks, their structure, their purpose and, above all, the guidelines for designating and operating a Geopark. It almost seems as if there is resistance to the concept and a preference for inventing something else that is ‘Kazakh’ rather than following the global path of a proven system. This is underpinned by the statement made by the Kazakh ambassador at the aforementioned conference in Paris (Page 5), who suggested that Kazakhstan recognises the UNESCO system but would prefer to have something of its own. This also applies to the

scientific community. Apart from a small (ridiculed) group of scientific advocates around Ilya Fishman, there is little resonance on the subject in either the literature or academic discussion. There are few to no experts who are truly familiar with the subject, and all too often, Geoparks are still lumped together with protected areas and dismissed as environmental or nature conservation projects. This impression was also reflected in the surveys. The term 'Geopark' is somehow present in the population, but its meaning is practically unknown. This is mainly due to the fact that both the media and academia refer to different aspects of Geoparks, thus creating misinformation that becomes embedded in the collective memory. What can help here? Simple question, but complicated answer. Either international specialists on the subject of Geoparks come to Kazakhstan and train existing personnel, or young scientists from Kazakhstan go out into the world and expand their wealth of experience in Geoparks (as the author has done). However, option one could lead to people feeling offended and giving the impression that foreign countries want to dictate to them in their own country. This behaviour has already been observed in other countries of the former USSR and cannot be explained logically or really avoided.

2. The problem of funding

As mentioned in the first paragraph, The problems of ignorance and money are closely linked. The Institute of Geography in Kazakhstan confirmes this by their own statements. According to their statements it is clear that, even though there is no fundamental opposition to the concept of Geoparks, two fundamental problems within their mindset exist.

The first problem is the institute's inadequate financial resources. This not only leads to gaps in staffing, but also means that other areas necessary for research cannot be financed (e.g. funds for scientific exchange).

The second problem is that the institute's capacities are at the limits of its operational capacity. The unhealthy mix of insufficient funding and dwindling staff numbers is turning into a real vicious circle from which there is no easy escape.

Under the current circumstances, it is important to bring new and, above all, locally trained specialists on board and not let them flee to other parts of the world. Ideally, regional specialists are also the ones who know their own region best. This ultimately leads to vicious cycle of **'we don't receive government funding and therefore cannot conduct research'** and **'we as the government cannot fund you because we need research results first'**. This means that science is caught in a loop. On the one hand, it is required to deliver results on Geoparks, but this is not possible without appropriate funding, as the government lacks both the capacity and, quite simply, the money to fulfil this task. In addition, it became clear during the discussion at the institute that there is actually no desire to address the issue, and obviously not just for capacity reasons. Everything should remain as it is, and one should not wake sleeping dogs. National parks are sufficient for Kazakhstan, and there is nothing more to say at the moment. It goes without saying that this must sound like mockery to someone who is committed to Geoparks and comes from Kazakhstan. The question is how to address this problem. The only real option is either to provide university research institutions with external funding (foreign funding) or to conduct research for Kazakhstan from (better equipped) countries abroad. In the author's opinion, option one is the better choice, because in the second case, the government could assume that there is too much foreign influence and reject the plans as 'un-Kazakh' before any substantial research has even been completed. A difficult issue for which there is unfortunately no magic solution.

3. The problem of legal definition

During the investigation, it became clear that Kazakhstan has no binding guidelines on Geoparks at the administrative or governmental level. The term 'Geopark' does not appear in national legislation or legal literature. This is surprising, given that the 'Aral Geopark' is supposed to open its doors in 2024. Without a clear legal basis or a legally defined term, the term is neither legally protected nor restricted to its actual purpose. Many tourist providers advertise Geoparks in the same breath as ecotourism or nature reserves. In addition, the lack of legal protection means that the integrity of the term 'Geopark' cannot be guaranteed, as it can theoretically be used by anyone as they see fit. This could become a problem in the future, especially if a decision is made to open a UNESCO Global Geopark. The solution would be quite simple: incorporate the

term “Geopark” into existing law with an adequate definition (e.g. the UNESCO definition), thereby clarifying both the term and its use.

4. The problem of jurisdiction

Another problem closely related to the previous one is the fact that Kazakhstan has no central point of contact for protected areas and similar institutions such as Geoparks. Almost every national park (or protected area) is managed by a different institution. This leads to turf wars not only between ministries but also vertically between local authorities. The head of Burabay National Park explained that at least two institutions are responsible. One is the Administration of the President of the Republic of Kazakhstan (Presidential Office) and not a ministry, as is the case with other parks. In addition, there is the UNESCO Biosphere Reserve, which overlaps with the park. The Kazakhstan National Committee for the UNESCO Programme ‘Man and the Biosphere’ is responsible for this. If a Geopark were to be established in Burabay within the territory of the national park, responsibility would first have to be transferred from the Presidential Office to the local authorities in order to establish legal jurisdiction. As you can imagine, this process involves not only a lot of bureaucracy but also many jurisdictional issues that would unnecessarily slow down the creation of a Geopark. What can be done? In this particular case, the problem can only be solved by the government. Care should be taken to

ensure that Geoparks and protected areas are managed centrally by a ministry. The same applies to UNESCO biosphere reserves and the UNESCO World Heritage System. Either a decision is made to establish a ministry that also has sovereign authority in the field of tourism (which would be very helpful in a centralised state such as Kazakhstan), or existing ministries are given new powers in the field of tourism. Anyone familiar with the administrative structure in Kazakhstan knows that this proposal is equivalent to a major project, but it would bring enormous benefits, particularly for Geoparks but also for tourism in general.

5. Latest developments prior to submission of this paper

Fortunately, in the proverbial last minutes before this paper went to press, there seems to be a little more movement on the subject of Geoparks in Kazakhstan. According to the information

provided by , there are currently two functioning Geoparks in Kazakhstan, one of which is currently in the application process to become a UNESCO Global Geopark. For reasons unknown, the re-established National Committee for UNESCO Global Geoparks has now been entrusted with the selection and application of existing and potential Geoparks in Kazakhstan. This step is a major and, above all, internationally important step for the development of geotourism and, in particular, the development of Geoparks in Kazakhstan, which will primarily lead to the Kazakh areas and regions receiving the recognition they deserve in the author's opinion.

It is to be hoped that the decision-making and selection process for Geoparks will continue smoothly and that in a few years' time the inhabitants of Kazakhstan and international visitors will be able to enjoy a large number of Geoparks. It remains to be seen whether this will mean that the idea of additional national regulations for Geoparks (similar to the model of national Geoparks in Germany, for example) will be off the table. It is quite possible that in a few years' time, both systems will exist in parallel and complement each other. The author will continue to monitor this development, as it will be of considerable importance for future Geoparks.

<u>In summary</u>

Referring to the diagram in Chapter 1.2 (Figure 2), it is now time to evaluate the research questions described. Here, the same questions are presented similar, but with markers. The markers are symbolically divided, with the symbols meaning the following. ✓ means that the requirement was fully met by the work, O means that the requirement was partially met, and X means that the requirement was not met.

How to identify possible Geopark locations in Kazakhstan? ✓	**What are the challenges and obstacles of Geopark creation in Kazakhstan?** ✓	**How is the possibility of creating geoparks in Kazakhstan and what are the resulting opportunities for the country, with subsequent recommendations for action ?** ✓
Case studies in diffrent parts of Kazakhstan ✓ Identification of geotouristic potentials ✓	Legal situation X Financial issues X Infrastructure issues X Lack of qualfied staff ✓ Social concerns O Lack of management skills X	Possibilities of preserving geological heritage sites and specially protected natural territories of Kazakhstan ✓

Figure 59: Answered study questions (marked) (Source: Own design)

The question ‘How to identify possible Geopark locations in Kazakhstan’ was addressed as a core topic in this thesis. Following the explanations in Chapter 7, it became clear that the identification of suitable Geopark sites in Kazakhstan would ideally be based on the almost countless geologically interesting sights. It has been shown that existing geoparks, such as the Aral Geopark, have also chosen this approach. The case studies in Kazakhstan were a complete success and produced some useful data on location, geological features and cultural attractions. Combined with this, it can be said that the primary goal of this thesis, to find usable geolocations for geoparks in Kazakhstan, has been achieved better than expected.

In response to the question ‘What are the challenges and obstacles to geopark creation in Kazakhstan?’, it can be said that a large number of problems and obstacles were identified during the work, but also solutions to the problems mentioned. No breakthroughs were achieved in this work with regard to the legal situation of geoparks in Kazakhstan. There is no legal framework in Kazakhstan that includes geoparks of any kind. The same applies to research on financial resources for geoparks. It was found that government funding for geopark projects is possible, but it is not entirely clear under what conditions. Discussions revealed that funding is often only provided in connection with scientific research projects. This does not cover the operating costs of existing geoparks. The same applies to infrastructure issues. In this case, there is no information available on development processes relating to geoparks or protected areas. Infrastructure projects are often initiated as a matter of priority when it becomes apparent that locations are experiencing an increase in tourist numbers and private investment appears lucrative. The situation regarding qualified personnel is fairly well documented. After initial interest surrounding Fishman, there are currently very few institutions with the capacity to deal with the topic of geoparks. Consequently, the output of qualified personnel is also very low. This is further divided into academic and practical personnel.
The topic of social concerns was also examined, but does not represent a core topic of this paper. In discussions with affected residents, it became apparent that there is certainly an awareness of the social issues affecting geoparks, but no literature or research data exists on this topic. This would be a starting point for a long-term research project.

The lack of skills in geopark management was also addressed in the text, but as there is no research data or management concept for geoparks in Kazakhstan, it was almost impossible to address this point in any detail.

Finally, the question was asked: ‘How is the possibility of creating geoparks in Kazakhstan and what are the resulting opportunities for the country, with subsequent recommendations for action?’ In any case, it can be said that the creation of geoparks in Kazakhstan is possible and, according to current information, is already being implemented. The possibilities are numerous, ranging from the development of geoheritage to its integration into research and education programmes and the creation of local value chains. The topic is broad in terms of the number of possibilities. In the course of the work, it has become clear that it is important to convince decision-makers in the country of the potential of geoparks in order to generate value creation as a holistic system that will benefit the whole of Kazakhstan in the long term.
In this context, after extensive research, it can be concluded that the preservation of Kazakhstan's geo- and natural heritage is also likely to receive a boost through the establishment of geoparks. Geoparks can make a full contribution to the preservation of Kazakhstan's nature within the existing system of protected areas, without the status of a regular nature reserve.

After examining the problems mentioned above and underlying the creation of a Geopark in Kazakhstan, one might conclude that the effort required for Geoparks in such a system, with such resistance, could be considered a futile endeavour, akin to Don Quixote. Well, one could do that, but the matter is far too important to be left to politicians. For Kazakhstan, a country between two continents and the cradle of a millennia-old culture, rejecting Geoparks would be one of the most fatal mistakes it could make. The geological heritage alone cries out to be moulded into a Geopark. Garnished with cultural heritage and a fantastic natural backdrop, all the practical prerequisites for a successful start in the world of Geoparks are in place, the author is convinced. The stabilising value of Geoparks, for example in international peacebuilding, should not be underestimated either (Dittmann 2024: 30–32). Also the As usual, the problem lies with the ‘system’, and these are not teething problems, they are inherent in the system. Only if the balancing act between scientific research, administration and the population can be achieved will it be possible for the Geoparks in Kazakhstan to become a new tool for

understanding the country's own cultural and geological heritage and for positioning itself well internationally in the field of (geo)tourism. Not to mention the opportunities for international cooperation. There is no reason to squander this opportunity and bury one's head in the sand. The two existing Geoparks, Aral and Ulytau, clearly demonstrate that it is currently possible to establish a Geopark in Kazakhstan that will not have a half-life of just a few weeks. This is despite enormous bureaucratic hurdles, financing difficulties and a lack of pretty much everything a Geopark needs. But time will tell whether and how these attempts will bear fruit. Once the first Geopark has been certified by UNESCO, and according to everything the author has heard, the Ulytau Geopark is likely to be the strongest candidate, those responsible will be forced to take action. The mere presence of UNESCO has miraculously accelerated many processes in other countries.The Institute of Geography of Kazakhstan was right about one thing: Kazakhstan has to tackle this issue because it will not resolve itself, and it would be a real shame to waste this opportunity. Not only for Kazakhstan, but for Geoparks worldwide.

Appendix

Structure of the interview questionnaire about the Creation of a Geopark in Kazakhstan

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a Geopark can impact regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. Your age:
2. Your gender:
3. Your education level:
4. Your place of residence:

Questions about the Geopark:

5. What do you know about Geoparks?

6. How do you think the creation of a Geopark could affect your region?

7. What positive effects, in your opinion, can the creation of a Geopark bring?

8. What possible negative consequences, in your opinion, could arise from creating a Geopark?

Participation and Support. Bottom-Up Development Concept.

9. How could you support the creation of a Geopark?

10. In your opinion, what needs to be done for the successful creation and functioning of a Geopark?

11. What are your suggestions or comments regarding the creation of a Geopark in Kazakhstan?

12. Where, in your opinion, should a Geopark be created? Why?

Basic evaluation interview questionnaire about the Creation of a Geopark in Kazakhstan

Basic evaluation of the survey:

1) Your age

Answers	70	
no Answer	1	
Minimum	17	
Maximum	59	
Mean value	32,914	
Median	32	

2) Your gender

male	40	(57,14%)
female	30	(42,86%)
Total result	70	
no Answer	1	

3) Your Education level

Basic education (elementary school)	0	(0,00%)
Middle education (High School)	23	(32,86%)
Higher education (College)	3	(4,29%)
Higher education (Bachelor University)	22	(31,43%)
Higher education (Master, Diploma University)	22	(31,43%)
PhD	0	(0,00%)
Total result	70	
no Answer	1	

4) Your Place of Residence

Burabay region	0	(0,00%)
Bozzhyra Region	0	(0,00%)
Altai Region	0	(0,00%)
Altyn-Emel Region	0	(0,00%)
Aral Region	0	(0,00%)
Almaty	33	(47,14%)
Astana	14	(20,00%)
East Kazakhstan	6	(8,57%)
West Kazakhstan	9	(12,86%)
South Kazakhstan	4	(5,71%)
Nort Kazakhstan	2	(2,86%)
Central Kazakhstan	2	(2,86%)
Other Residence	0	(0,00%)
Total result	70	
no Answer	1	

5) On a scale from 0 to 5 please tick how you think the status of your knowledge about Geopark is

Nothing	13	(18,57%)
	31	(44,29%)
	8	(11,43%)
Something	14	(20,00%)
	1	(1,43%)
	3	(4,29%)
Everthing	0	(0,00%)
Total result	70	

no Answer	1	
Mean value	1,54	
Median	1	

6) On a scale from 0 to 5 please tick how much a cration of a Geopark will affect your region

Severe negatively	0	(0,00%)
	0	(0,00%)
	0	(0,00%)
Neither positive, nor negative	8	(11,43%)
	10	(14,29%)
	50	(71,43%)
Very Positively	2	(2,86%)
Total result	70	
no Answer	1	
Mean value	4,66	
Median	5	

7) What positive effects, in your opinion, can the creation of a geopark bring?

Tourism effects	29	(41,43%)
educational / scientific effects	17	(24,29%)
preserving effects (nature/environment)	39	(55,71%)
Gaining Natural Resources	2	(2,86%)
Development of Infrastructure	7	(10,00%)
Personal wealth	6	(8,57%)
Others	9	(12,86%)
Responses (multiple selections possible!)	109	
Respondents	70	
no Answer	1	

8) What possible negative consequences, in your opinion, could arise from creating a geopark?

Corruption	2	(2,86%)
Restrictions in general	2	(2,86%)
Pollution	3	(4,29%)
Limited access to some areas	1	(1,43%)
Rise in Tourism	1	(1,43%)
Destroying nature	3	(4,29%)
None	58	(82,86%)
Others	3	(4,29%)
Responses (multiple selections possible!)	73	
Respondents	70	
no Answer	1	

9) How could you support the creation of a geopark?

Support demands of authorities	2	(2,86%)
Support demand of scientific staff	1	(1,43%)
Support demand of educators	2	(2,86%)
Promote / Advocate for Geoparks in public	37	(52,86%)
Preserving nature	5	(7,14%)
Participate in research (e.g. surveys)	1	(1,43%)
Voting for politicians	1	(1,43%)
As a non monetary volunteer / supporter	10	(14,29%)
Monetary donations	5	(7,14%)
Other	1	(1,43%)

Don't know	12	(17,14%)
Can't do anything	5	(7,14%)
Responses (multiple selections possible!)	82	
Respondents	70	
no Answer	1	

10) In your opinion, what needs to be done for the successful creation and functioning of a geopark

Attract / educate people about the topic	18	(25,71%)
Preserve / protect nature	8	(11,43%)
Lower corruption in the country	1	(1,43%)
Create more funding for Geoparks	11	(15,71%)
Create a legal framework for Geoparks	1	(1,43%)
Create conditions that make Geoparks thrive	22	(31,43%)
Find places worth becoming a Geopark	9	(12,86%)
Develop infrastructure	6	(8,57%)
Develop economic possibilities to monetize Geoparks	3	(4,29%)
Develop tourism in general	5	(7,14%)
Make Geoparks not harmful to nature	1	(1,43%)
More advertising (from Government)	5	(7,14%)
Improve planning	6	(8,57%)
Employ more permanent staff / Create specialists	5	(7,14%)
Learn from other countries about Geoparks	1	(1,43%)
I don't know	12	(17,14%)
Responses (multiple selections possible!)	114	
Respondents	70	
no Answer	1	

11) What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?

Do not harm the process of Geopark creation	10	(14,29%)
Support action groups / advocate for Geoparks	5	(7,14%)
More tourism development is needed	5	(7,14%)
More geopark development is needed	14	(20,00%)
Educate population about the topic / Involve the youth	4	(5,71%)
Preserve remaining Nature	7	(10,00%)
Create favourable conditions for Geoparks	24	(34,29%)
Other	0	(0,00%)
I don't have any	25	(35,71%)
Responses (multiple selections possible!)	94	
Respondents	70	
no Answer	1	

12) Where, in your opinion, should a geopark be created?

Burabay region	4	(5,71%)
Bozzhyra Region	0	(0,00%)
Altai Region	0	(0,00%)
Altyn-Emel Region	4	(5,71%)
Aral Region	1	(1,43%)
Almaty	23	(32,86%)
Astana	7	(10,00%)
Urban regions	1	(1,43%)
Natural areas (like forests)	12	(17,14%)
North Kazakhstan	0	(0,00%)
East Kazakhstan	4	(5,71%)

South Kazakhstan	4	(5,71%)
West Kazakhstan	1	(1,43%)
Central Kazakhstan	1	(1,43%)
Other Regions	8	(11,43%)
Total result	70	
no Answer	1	

Completed questionnaires of the interview questionnaire about the Creation of a Geopark in Kazakhstan

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can impact regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 36
2. **Your gender:** Male
3. **Your education level:** Higher education
4. **Your place of residence:** Karaganda, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   Not much
6. **How do you think the creation of a geopark could affect your region?**
   Positively, in harmony with nature
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Revitalize and preserve our natural areas and resources
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't see any

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   By joining eco-initiatives
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Attract people and protect nature
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    I don't know, to be honest
12. **Where, in your opinion, should a geopark be created? Why?**
    Preferably in places rich in natural resources

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 22 years
2. **Your gender:** Male
3. **Your education level:** Higher education
4. **Your place of residence:** Astana, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   It is a designated territory with unique geological features that is preserved and studied
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of tourism, study of these areas for educational purposes, etc.
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   (No answer provided)

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   By responding to awareness campaigns
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Find places with unique natural features, educate people who will work there
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Do everything according to its intended purpose
12. **Where, in your opinion, should a geopark be created? Why?**
    Most likely in the south, the most suitable conditions

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 27
2. **Your gender:** Male
3. **Your education level:** Higher education
4. **Your place of residence:** Atyrau, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   Nothing
6. **How do you think the creation of a geopark could affect your region?**
   Most likely positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of natural resources
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   (No answer provided)
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Develop infrastructure
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    In crowded places / cities

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 43
2. **Your gender:** Male
3. **Your education level:** Higher (Master's degree)
4. **Your place of residence:** Astana, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   A geopark is a territory where natural resources are studied and preserved
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of natural resources
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Invite friends and acquaintances
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Create good conditions and find a favorable location
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Attract eco-activists and nature defenders
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, it has all the conditions for creating a geopark

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 47
2. **Your gender:** Female
3. **Your education level:** Higher education
4. **Your place of residence:** Astana, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   Not much
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of tourism
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Support it somehow at least
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Find a good, beautiful place and allocate a budget
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Focus efforts on tourism development
12. **Where, in your opinion, should a geopark be created? Why?**
    In Borovoe, it's a very beautiful place

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 32
2. **Your gender:** Female
3. **Your education level:** Secondary specialized
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   It is an interesting, culturally educational natural area
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   (No answer provided)
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Occupation of territories, closure of areas for the public, inaccessibility, limited tourism and recreation

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   By visiting it
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Develop infrastructure
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Geoparks are needed everywhere
12. **Where, in your opinion, should a geopark be created? Why?**
    In beautiful places as lakes, forests

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 39
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Nature reserve
6. **How do you think the creation of a geopark could affect your region?**
   A geopark is for the development of tourism
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Many benefits
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   No, I don't see any

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   We will support it for the future
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    So that the geopark does not harm nature
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    No comments
12. **Where, in your opinion, should a geopark be created? Why?**
    No comments

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 37
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   That it is a protected area
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation and safety
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   No negative consequences

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Support the demands of educators and authorities
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Eliminate corruption
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Preserve the remaining natural zones
12. **Where, in your opinion, should a geopark be created? Why?**
    Aral Sea, for restoration

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 28
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Nothing
6. **How do you think the creation of a geopark could affect your region?**
   Tourism
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of tourism
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Pollution

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   In no way
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Nothing
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    None
12. **Where, in your opinion, should a geopark be created? Why?**
    Outside the city

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 44
2. **Your gender:** Male
3. **Your education level:** Higher education
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Protected natural area
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Tourism
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Inform other people
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Advertising
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    No
12. **Where, in your opinion, should a geopark be created? Why?**
    Charyn Canyon

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 30
2. **Your gender:** Male
3. **Your education level:** Master's degree
4. **Your place of residence:** Aktau

Questions about the geopark:

5. **What do you know about geoparks?**
   Protected areas with unique geological features
6. **How do you think the creation of a geopark could affect your region?**
   Depends on the location
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of nature
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Minor restrictions on tourism

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I can't
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Allocate funding
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    (No answer provided)

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 26
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Protected area
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Nature preservation, tourism
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Corruption

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Promote it, explain its significance
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Increase funding, create conditions
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Great idea, needs to be developed
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, close by

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 43
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty city

Questions about the geopark:

5. **What do you know about geoparks?**
   I've heard of it
6. **How do you think the creation of a geopark could affect your region?**
   It will have a good effect
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   There won't be any

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   By telling others
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    To inform people
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    It's a good idea
12. **Where, in your opinion, should a geopark be created? Why?**
    In places with beautiful nature. Because it will attract tourists.

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 40 years
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   A center for the preservation of various animals and plants
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Education of the population
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't see any

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Preserve nature
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Learn from the experience of neighboring countries
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Educate the population in schools and attract tourists
12. **Where, in your opinion, should a geopark be created? Why?**
    Charyn

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 35 years
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   A region with a special protected status
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of tourism and education
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Protect nature
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Preserve flora and fauna so that nature can be passed on from generation to generation
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Protect nature
12. **Where, in your opinion, should a geopark be created? Why?**
    (No answer provided)

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 40
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Protected natural area
6. **How do you think the creation of a geopark could affect your region?**
   Attract tourists
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Environmental education for young people, jobs
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   (No answer provided)

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   (No answer provided)
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Government funding
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    In regions with water

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 34
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   I've heard of it
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Economic development, creation of new jobs
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   By sharing on social media, and informing others
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Need proper promotion and development
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Need to raise awareness and create favorable conditions
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, because there are beautiful places and favorable conditions

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 59
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Protected area
6. **How do you think the creation of a geopark could affect your region?**
   Improve the environment
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   I don't know
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   (No answer provided)
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    More information in the media
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    No suggestions
12. **Where, in your opinion, should a geopark be created? Why?**
    In Borovoe, near major cities

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 57 years
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Geological history of the territory
6. **How do you think the creation of a geopark could affect your region?**
   Preservation, education, tourism
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of protected territories, scientific research
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't see any negative consequences

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Participate in surveys and support
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Information sharing, proper planning
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Involve youth in this
12. **Where, in your opinion, should a geopark be created? Why?**
    Zhetysu region, Shilikemer forest, near Almaty and Kapchagay

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 41
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   A region with a special protected status of geological land
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Increase in tourism, preservation of infrastructure
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Damage due to human impact

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   By voting
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Funding, tourism, maintenance
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    (No answer provided)

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 31 years
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty Region

Questions about the geopark:

5. **What do you know about geoparks?**
   Specially protected areas
6. **How do you think the creation of a geopark could affect your region?**
   Yes (it would have an impact)
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of tourism
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Unknown

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   (No answer provided)
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Permanent work, staff or workforce
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    For supporting the cleanliness of the geopark
12. **Where, in your opinion, should a geopark be created? Why?**
    Charyn Canyon, Lake Alakol, for maintaining the cleanliness of the geopark

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 44
2. **Your gender:** Female
3. **Your education level:** Higher technical
4. **Your place of residence:** Republic of Kazakhstan, Zhetysu region, city of Kaskelen

Questions about the geopark:

5. **What do you know about geoparks?**
   They are specially protected natural areas
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Job creation, opening of new places for improved services, economy
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Insufficient funding

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I don't know
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Funding, proper planning, and other processes
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    There are many places in Kazakhstan where geoparks can be created. All efforts should be directed not only at the technical part, but also at education and public awareness about the purpose of geoparks, especially among the population living near them.

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 36
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   A region with a special status
6. **How do you think the creation of a geopark could affect your region?**
   Not sure
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of natural beauty, development of tourism
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I think none

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I am undecided
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Planning
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    I don't have any comments
12. **Where, in your opinion, should a geopark be created? Why?**
    In tourist places

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 20
2. **Your gender:** Male
3. **Your education level:** Secondary, higher (currently studying)
4. **Your place of residence:** Almaty Region

Questions about the geopark:

5. **What do you know about geoparks?**
   I don't know anything
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   I don't know
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know, none

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   From the student side
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    (No answer provided)
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    Where there is beautiful nature and mountains. Geopark is a unified combination of geographic zones.

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 22
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   (No answer provided)
6. **How do you think the creation of a geopark could affect your region?**
   (No answer provided)
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   (No answer provided)
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   (No answer provided)

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   (No answer provided)
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    (No answer provided)
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    (No answer provided)

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 45
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Very little
6. **How do you think the creation of a geopark could affect your region?**
   I think it will improve the economy
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Tourism
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Tell all my acquaintances
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    I don't know
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    It needs to be created and developed
12. **Where, in your opinion, should a geopark be created? Why?**
    Almaty, because it is a densely populated city

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 28
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   Not much
6. **How do you think the creation of a geopark could affect your region?**
   Infrastructure
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of natural and cultural heritage
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I cannot answer

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   By recommending it
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Don't know
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Create and develop
12. **Where, in your opinion, should a geopark be created? Why?**
    In Astana, because it is the capital of the country

Interview: Creating a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark may affect regional development. Your responses will remain confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 23
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   Very little
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, could the creation of a geopark bring?**
   Development and preservation of natural resources
8. **What possible negative consequences, in your opinion, could arise from the creation of a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Become a supporter
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Develop it first and foremost
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Find decent people who will control it
12. **Where do you think a geopark should be created? Why?**
    In Almaty, good conditions

Interview: Creating a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark may affect regional development. Your responses will remain confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 21
2. **Your gender:** Male
3. **Your education level:** Higher (student)
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Practically nothing
6. **How do you think the creation of a geopark could affect your region?**
   In a positive direction
7. **What positive effects, in your opinion, could the creation of a geopark bring?**
   Preservation of the environment
8. **What possible negative consequences, in your opinion, might arise when creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Become an activist
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Preserve and protect nature
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Create a geopark in a good location
12. **Where do you think a geopark should be created? Why?**
    In Almaty, because it has all the conditions for it

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 36
2. **Your gender:** Female
3. **Your education level:** Secondary
4. **Your place of residence:** Aktobe

Questions about the geopark:

5. **What do you know about geoparks?**
   Very little
6. **How do you think the creation of a geopark could affect your region?**
   In a positive direction
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of natural resources
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know about that

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Within permitted limits, provide help as needed
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Create necessary conditions
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Find a good place with beautiful water
12. **Where, in your opinion, should a geopark be created? Why?**
    Aktobe, Almaty, somewhere

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 28
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   It is a territory with unique geological and landscape features and represents special natural and cultural scientific value.
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   A geopark helps protect unique ecological and natural sites from destruction
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Only little

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Help with raising awareness. Financially
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    First, create a visitor center and develop it
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    I like the idea
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty or in Astana

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 44
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Aktobe

Questions about the geopark:

5. **What do you know about geoparks?**
   A geopark is a place for natural resources
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of natural resources
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Through public outreach
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Study and preserve important natural resources, create favorable conditions
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Support the idea
12. **Where, in your opinion, should a geopark be created? Why?**
    In Astana

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 46
2. **Your gender:** Male
3. **Your education level:** Bachelor
4. **Your place of residence:** Taldykurgan

Questions about the geopark:

5. **What do you know about geoparks?**
   I don't know much
6. **How do you think the creation of a geopark could affect your region?**
   In a positive way
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of natural heritage
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Support the idea of sustainable development
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Create a sustainable development strategy, provide funding and technology
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Positive
12. **Where, in your opinion, should a geopark be created? Why?**
    In Taldykorgan, there is beautiful nature here

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 44
2. **Your gender:** Female
3. **Your education level:** Higher education, Master Degree
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   It is a territory with unique geological landmarks (caves, canyons)
6. **How do you think the creation of a geopark could affect your region?**
   I think positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Tourism development and preservation of natural heritage
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I really love nature and visit beautiful places, most likely I would visit a geopark
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Ensure safety and introduce new technologies
    Create conditions to develop these geoparks
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Positive
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, it has the best conditions and beautiful places

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 35
2. **Your gender:** Female
3. **Your education level:** Secondary
4. **Your place of residence:** Pavlodar

Questions about the geopark:

5. **What do you know about geoparks?**
   Not much
6. **How do you think the creation of a geopark could affect your region?**
   I don't know
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   A lot of positive things
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Introduce it to acquaintances
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Can't answer
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Create and develop
12. **Where, in your opinion, should a geopark be created? Why?**
    In the mountains

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 19
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Taldykorgan

Questions about the geopark:

5. **What do you know about geoparks?**
   A geopark is a place for preserving natural heritage
6. **How do you think the creation of a geopark could affect your region?**
   I think positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Protection of natural heritage
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Possibly a halt in further development

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Become an activist
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Find investors
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Include it in the budget because it protects our nature and helps development
12. **Where, in your opinion, should a geopark be created? Why?**
    I think near smaller towns conditions are better here

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 37
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Aktobe

Questions about the geopark:

5. **What do you know about geoparks?**
   Nothing
6. **How do you think the creation of a geopark could affect your region?**
   I don't know
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Can't answer
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   No answer

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Visit it
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Find a beautiful place
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Something needs to be done
12. **Where, in your opinion, should a geopark be created? Why?**
    Almaty

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 23
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Honestly, not much
6. **How do you think the creation of a geopark could affect your region?**
   Most likely positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Possibly preservation of natural resources
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I don't know
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Create favorable conditions. Develop for future prospects.
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    In my opinion, it's necessary, it has potential
12. **Where, in your opinion, should a geopark be created? Why?**
    I think in Almaty, it has the best conditions

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 17
2. **Your gender:** Female
3. **Your education level:** In progress
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   A geopark is something like a reserve, if I'm not mistaken, for people in a specific area
6. **How do you think the creation of a geopark could affect your region?**
   I think positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of endangered species and territories
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I don't know yet
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Pay more attention to the local population
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Support the activity and involvement of citizens
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, the best conditions here

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 20
2. **Your gender:** Female
3. **Your education level:** Studying at a medical institute (Bachelor's degree)
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   Not much
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Boost the economy
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Probably none

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Become an activist or volunteer
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Develop a good structure for the geopark. Establish it in a favorable location.
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Positive
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, good conditions there

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 59
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Aktobe

Questions about the geopark:

5. **What do you know about geoparks?**
   I heard something on TV
6. **How do you think the creation of a geopark could affect your region?**
   Tourism
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Possibly being added to UNESCO
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Unknown

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Financially
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Choose a geopark with high population flow and promote it
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    No comment
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, high population and tourism

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 26
2. **Your gender:** Male
3. **Your education level:** Higher pedagogical education
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   These are parks aimed at preserving places with geological heritage
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation and promotion of our natural resources
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   There shouldn't be any negative consequences

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Become an active participant in the geopark creation process
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Develop a good strategy and attract resources
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    A great idea not only for tourism but also for education and awareness
12. **Where, in your opinion, should a geopark be created? Why?**
    Astana and the surrounding area, very beautiful places

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 33
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Not much information
6. **How do you think the creation of a geopark could affect your region?**
   In a positive way
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Sustainable development and preservation of cultural heritage
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Negative impact on the environment

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Support through feedback
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Define objects for development and preservation in the park. Preserve natural beauty and landscapes.
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Very necessary
12. **Where, in your opinion, should a geopark be created? Why?**
    Here in Almaty, the best conditions

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 24
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Semey

Questions about the geopark:

5. **What do you know about geoparks?**
   Beautiful places with nature, usually under protection
6. **How do you think the creation of a geopark could affect your region?**
   I think it would be good
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Increase awareness and develop Semey
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Pollution of protected areas

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Involve youth in protecting nature, through work or volunteering
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Find important places with beautiful nature
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Create a geopark in Semey
12. **Where, in your opinion, should a geopark be created? Why?**
    In Semey, the nature here is beautiful

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 22
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Nothing
6. **How do you think the creation of a geopark could affect your region?**
   I think positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of geological sites
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Any way I can
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Not sure
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Success to all in this endeavor
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, everything is better in Almaty

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 34
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Karaganda

Questions about the geopark:

5. **What do you know about geoparks?**
   Nothing
6. **How do you think the creation of a geopark could affect your region?**
   I don't know
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   I don't know
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   There are none

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Verbally support
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    No answer
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    No answer
12. **Where, in your opinion, should a geopark be created? Why?**
    Karaganda

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 43
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Not much information
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of nature, cultural attractions
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Nothing
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Attract as many people as possible. Choose a beautiful location.
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty and Almaty region, because it is very beautiful

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 21
2. **Your gender:** Male
3. **Your education level:** Higher
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   Parks with geological features
6. **How do you think the creation of a geopark could affect your region?**
   Good
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation of our beautiful nature
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Support
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Find a good location for the geopark
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Wish success in this area
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, it's very beautiful there

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 25
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   Not much
6. **How do you think the creation of a geopark could affect your region?**
   It could develop tourism
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development and protection
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Through social media and telling people around me
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Promotion
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    No comments
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, the conditions are the best there

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 45
2. **Your gender:** Female
3. **Your education level:** Secondary
4. **Your place of residence:** Aktobe

Questions about the geopark:

5. **What do you know about geoparks?**
   Not very much
6. **How do you think the creation of a geopark could affect your region?**
   Tourism development
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Possibly inclusion in UNESCO sites
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Financially
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Create it in a city with high population
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    No comment
12. **Where, in your opinion, should a geopark be created? Why?**
    Burabay

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

5. **Your age:** 31
6. **Your gender:** Male
7. **Your education level:** Higher
8. **Your place of residence:** Shymkent

Questions about the geopark:

5. **What do you know about geoparks?**
   Not a lot
6. **How do you think the creation of a geopark could affect your region?**
   Participation of the scientific community
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Economic growth of the region
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I don't know
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Create a geopark in a city with high population
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    None
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, it is a highly populated city

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 25
2. **Your gender:** Female
3. **Your education level:** Higher education (Master's student)
4. **Your place of residence:** Aksu, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   A lot
6. **How do you think the creation of a geopark could affect your region?**
   Support from the government
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Tourism
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Introduce it to acquaintances
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    I can't answer
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Create and develop
12. **Where, in your opinion, should a geopark be created? Why?**
    In Astana, because it is the capital of the country

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 32
2. **Your gender:** Male
3. **Your education level:** Higher education
4. **Your place of residence:** Taldykorgan

Questions about the geopark:

5. **What do you know about geoparks?**
   A place with geological features of nature
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of nature and cultural values
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Tell friends and acquaintances
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Good development and infrastructure
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Create it for tourism
12. **Where, in your opinion, should a geopark be created? Why?**
    In southern Kazakhstan, it's very beautiful here

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 19
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Parks or places where geological values are preserved
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation and development of research objects
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I don't know
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Include it in the budget
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    I don't know
12. **Where, in your opinion, should a geopark be created? Why?**
    In beautiful places, with good nature

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 20
2. **Your gender:** Female
3. **Your education level:** Higher education (still a student)
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Heard about it, but don't know
6. **How do you think the creation of a geopark could affect your region?**
   I think positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of natural and cultural assets
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   In a supportive way
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Pay more attention to cultural heritage. Make it beautiful.
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Necessary
12. **Where, in your opinion, should a geopark be created? Why?**
    Almaty, all the conditions are here

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 19
2. **Your gender:** Male
3. **Your education level:** Higher education (student)
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   V. It's a place with geological natural heritage
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   I think people will pay more attention to nature and the beauty of Kazakhstan
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't think there are any

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I think after a while, I'll become an activist and volunteer to support nature preservation
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Develop infrastructure for tourism and attract more people to Kazakhstan
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Most importantly don't harm nature while developing tourism
12. **Where, in your opinion, should a geopark be created? Why?**
    Create it in a favorable place with clean water and rich nature

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 18
2. **Your gender:** Female
3. **Your education level:** Secondary
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   I know a little about geoparks
6. **How do you think the creation of a geopark could affect your region?**
   Tourism development, most likely
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Tourism development
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Littering

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Financially
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Promotion
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    There is a lot of nature in Karaganda
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty or Burabay

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 29
2. **Your gender:** Female
3. **Your education level:** Higher
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   A territory that has unique geological heritage
6. **How do you think the creation of a geopark could affect your region?**
   Tourism development
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Potential inclusion in UNESCO
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Drawing public attention
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Evaluate the natural and cultural potential of the region
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Protect natural areas
12. **Where, in your opinion, should a geopark be created? Why?**
    Astana, the capital of the country

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 24
2. **Your gender:** Female
3. **Your education level:** Higher education (Medical degree)
4. **Your place of residence:** Taldykorgan

Questions about the geopark:

5. **What do you know about geoparks?**
   Nothing
6. **How do you think the creation of a geopark could affect your region?**
   Maybe development
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Preservation and development of the economy
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   As a visitor most likely
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Draw attention to geological values
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    I think it's necessary
12. **Where, in your opinion, should a geopark be created? Why?**
    In the mountains, the conditions are favorable there

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 33
2. **Your gender:** Female
3. **Your education level:** Higher education (Medical degree)
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   Quite a lot
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Attraction of tourists and foreign visitors
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None, overall

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Help spread the word
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Attract eco-activists
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Create and promote them regularly
12. **Where, in your opinion, should a geopark be created? Why?**
    In natural areas

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 26
2. **Your gender:** Female
3. **Your education level:** Higher education
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Nothing
6. **How do you think the creation of a geopark could affect your region?**
   Probably positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Protection of natural heritage
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I don't know

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I don't even know how to support it
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Allocate budget, find good workers, do everything correctly
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    (No answer provided)
12. **Where, in your opinion, should a geopark be created? Why?**
    I don't know

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 24
2. **Your gender:** Male
3. **Your education level:** College
4. **Your place of residence:** Shymkent region

Questions about the geopark:

5. **What do you know about geoparks?**
   A geopark is a protected area of ecological importance
6. **How do you think the creation of a geopark could affect your region?**
   It would be great for our region
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Would help protect and preserve our nature
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Need to promote it well
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Need government support
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    It should be created
12. **Where, in your opinion, should a geopark be created? Why?**
    Shymkent, Turkestan region, there are many beautiful and special places

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 28
2. **Your gender:** Female
3. **Your education level:** Higher education (Bachelor's degree)
4. **Your place of residence:** Almaty, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   These are parks where there are geological and natural resources, and they are under protection
6. **How do you think the creation of a geopark could affect your region?**
   Positively
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Development of ecotourism and conservation of natural resources
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   Most likely technical problems

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   I don't know
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Do everything from the perspective of ecology
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Do everything properly
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, the best place in Kazakhstan

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 50
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Almaty

Questions about the geopark:

5. **What do you know about geoparks?**
   Nothing
6. **How do you think the creation of a geopark could affect your region?**
   I think it will develop tourism
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Don't know
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   There probably won't be any

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Tell acquaintances about it
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    It's necessary
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    No comments
12. **Where, in your opinion, should a geopark be created? Why?**
    I think Almaty has many natural sites

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 45
2. **Your gender:** Male
3. **Your education level:** Secondary
4. **Your place of residence:** Astana

Questions about the geopark:

5. **What do you know about geoparks?**
   A little
6. **How do you think the creation of a geopark could affect your region?**
   I think in a good way
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   I don't know
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   I think there probably won't be any

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Financially
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Don't know
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    None
12. **Where, in your opinion, should a geopark be created? Why?**
    Astana

Interview: Creation of a Geopark in Kazakhstan

Your answers will help my research better understand public opinion and determine how a geopark can influence regional development. Your responses will be kept confidential and used only for scientific purposes.

General questions about the interviewee:

1. **Your age:** 20
2. **Your gender:** Male
3. **Your education level:** Secondary, currently studying for higher education (3rd year)
4. **Your place of residence:** Almaty, Kazakhstan

Questions about the geopark:

5. **What do you know about geoparks?**
   Very little
6. **How do you think the creation of a geopark could affect your region?**
   Possibly could be included in UNESCO
7. **What positive effects, in your opinion, can the creation of a geopark bring?**
   Tourism development
8. **What possible negative consequences, in your opinion, could arise from creating a geopark?**
   None

Participation and Support. Bottom-Up Development Concept.

9. **How could you support the creation of a geopark?**
   Visit and tell acquaintances
10. **In your opinion, what needs to be done for the successful creation and functioning of a geopark?**
    Creating and developing
11. **What are your suggestions or comments regarding the creation of a geopark in Kazakhstan?**
    Find a good location for functionality
12. **Where, in your opinion, should a geopark be created? Why?**
    In Almaty, because it attracts many tourists

Structure of the interview questionnaire about the Creation of a Geopark in Kazakhstan

1. How often do you travel in Kazakhstan?

- Several times a year
- Once a year
- Once every few years
- I hardly ever travel

2. What type of tourism do you prefer?

- Classic tourism (beaches, cities, all-inclusive hotels)

- Ecotourism (national parks, nature reserves, 'wild' places)
- Geotourism (volcanoes, caves, canyons, geological parks)
- Cultural and educational (museums, historical sites)
- Active tourism (hiking, rafting, mountaineering)
- Other (please specify) _____

3. What is most important to you when travelling?

- Comfort and infrastructure (hotels, restaurants)
- Nature and environmental friendliness
- Unique geological sites
- Culture and history

4. Have you ever chosen ecotourism destinations (e.g., eco-hotels, nature reserves)?

- Yes, regularly
- Yes, but rarely
- No, but I would like to try
- No, not interested

5. Have you visited geological sites (volcanoes, caves, canyons, Geoparks)?

- Yes, specifically
- Yes, but by chance (as part of the itinerary)

- No, but I would like to
- No, not interested

6. What prevents you from choosing ecotourism or geotourism more often?
- High cost
- Lack of information
- Complex logistics
- Not comfortable enough
- I prefer other types of holidays
- Nothing prevents me

7. How do you feel about holidays in places with unspoilt nature but minimal infrastructure?
- I am willing to put up with inconveniences for the sake of nature
- A balance is important: nature + basic comfort
- I prefer only comfortable places
- I don't like wild places

8. If new routes with unique natural features (e.g. ancient rocks, canyons, caves) appeared in Kazakhstan, would you be interested?

- Yes, very
- Maybe, if it's easy to get to
- Probably not
- Not sure

9. Do you think Kazakhstan should develop new nature tourism areas?

- Yes, it would attract more tourists
- Yes, but it's important to preserve nature
- No, there are enough places already
- Not sure

9. What would motivate you to visit a new nature park?

- Unique landscapes and photo opportunities
- Interesting excursions and guides
- Good transport accessibility
- Availability of amenities (campsites, cafes)
- Opportunity to combine with active recreation

10. Are you willing to participate in environmental initiatives while travelling (litter collection, volunteering)?

- Yes, regularly
- Sometimes, if possible
- No, not my thing

11. How do you usually choose your travel destinations?

- Recommendations from friends/bloggers
- Travel agencies and travel websites
- Social media and travel media
- Scientific/environmental resources
- Other _____

Statistics for the Survey about 'Tourism Behaviour'

Number of records in this query: 179
Total number of records in this survey: 179
Percentage share: 100,00%

Summary for Q00
How often do you travel around Kazakhstan?

Answer	Number	Percentage
Several times a year (SQ001)	46	25,70%
Once a year (SQ002)	57	31,84%
Every few years (SQ003)	38	21,23%
Virtually no travelling (SQ004)	42	23,46%

Summary for Q001
What type of tourism is closer to you?

Answer	Number	Percentage
Classic tourism (beaches, cities, all-inclusive hotels) (SQ001)	122	68,16%
Ecotourism (national parks, nature reserves, wilderness areas	59	32,96%
Geotourism (volcanoes, caves, canyons, geological parks) (S	26	14,53%
Cultural and cognitive (museums, historical places) (SQ004)	52	29,05%
Active tourism (hiking, rafting, mountaineering) (SQ005)	23	12,85%
Other	4	2,23%

ID	Answer
79	Guest trips
99	cruise, circumnavigation
133	Basically, all of the above, on the contrary.
204	Pilgrimage

Summary for Q002
What's more important to you when travelling?

Answer	Number	Percentage
Comfort and infrastructure (hotels, restaurants) (SQ001)	105	58,66%
Nature and Ecology (SQ002)	103	57,54%
Unique geological sites (SQ003)	40	22,35%
Culture and History (SQ004)	71	39,66%

Summary for Q003
Have you ever chosen ecotourism destinations (e.g. eco hotels, nature reserves)?

Answer	Number	Percentage
Yes, regularly (A001)	18	10,06%
Yes, but rarely (A002)	56	31,28%
No, but would like to try (A003)	87	48,60%
No, not interested (A004)	18	10,06%
No Answer	0	0,00%
Not shown	0	0,00%

Summary for Q004
Have you visited geological sites (volcanoes, caves, canyons, geoparks)?

Answer	Number	Percentage
Yes, on purpose (A001)	54	30,17%
Yes, but incidentally (as part of the route) (A002)	42	23,46%
No, but would like to (A003)	72	40,22%
No, not interested (A004)	11	6,15%
No Answer	0	0,00%
Not shown	0	0,00%

Summary for Q005
What prevents you from choosing ecotourism or geotourism more often?

Answer	Number	Percentage
High value (SQ001)	54	30,17%
Lack of information (SQ002)	55	30,73%
Complex logistics (SQ003)	33	18,44%
Lack of comfort (SQ004)	35	19,55%
I prefer another holiday (SQ005)	19	10,61%
Nothing in the way (SQ006)	36	20,11%

Summary for Q006
How do you feel about holidaying in places with untouched nature but minimal infrastructure?

Answer	Number	Percentage
Willing to endure inconvenience for the sake of nature (SQ00	56	31,28%
Balance is important: nature + basic comfort (SQ002)	107	59,78%
I prefer only comfortable places (SQ003)	21	11,73%
I don't like wild places (SQ004)	12	6,70%

Summary for Q007
If new routes with unique natural objects (for example, ancient rocks, canyons, caves) appeared in Kazakhstan, would you be interested?

Answer	Number	Percentage
Yes, very (A001)	84	46,93%
Perhaps if there is convenient access (A002)	83	46,37%
Rather not (A003)	8	4,47%
I don't know; (A004)	4	2,23%
No Answer	0	0,00%
Not shown	0	0,00%

Summary for Q008
Do you think it is necessary to develop new natural tourist zones in Kazakhstan?

Answer	Number	Percentage
Yes, it will attract more tourists (A001)	90	50,28%
Yes, but it's important to preserve nature (A002)	83	46,37%
No, there are enough existing seats (A003)	0	0,00%
Difficult to answer (A004)	6	3,35%
No Answer	0	0,00%
Not shown	0	0,00%

Summary for Q009
What would motivate you to visit a new nature park?

Answer	Number	Percentage
Unique Landscapes and Photo Points (SQ001)	70	39,11%
Interesting tours and guides (SQ002)	92	51,40%
Good transport accessibility (SQ003)	64	35,75%
Availability of facilities (campsites, cafes) (SQ004)	52	29,05%
Possibility to combine with active holidays (SQ005)	55	30,73%

Summary for Q010
Are you willing to participate in environmental initiatives while travelling (litter picking, volunteering)?

Answer	Number	Percentage
Yes, regularly (A001)	51	28,49%
Sometimes, if I get the chance (A002)	99	55,31%
No, not my format (A003)	29	16,20%
No Answer	0	0,00%
Not shown	0	0,00%

Summary for Q011
How do you usually choose your travel destinations?

Answer	Number	Percentage
Recommendations from friends/bloggers (SQ001)	105	58,66%
Travel agencies and travel websites (SQ002)	55	30,73%
Social media and travel media (SQ003)	60	33,52%
Scientific/Environmental Resources (SQ004)	15	8,38%
Other	8	4,47%

ID	Answer
32	I'm looking for it myself
41	Yourself
66	Internet
80	karzhy jetkilikti bolsa
129	I either go to new places or where I like to go.
133	A little bit of everything
169	We choose our own route
170	Friends.

Interview with the Head of Institute of Geography of Kazakhstan (translated from Russian)

1. In your opinion, what significance does the opening of a Geopark in Kazakhstan bring?

They say that it is relevant, that it is widespread in Europe, in America. I don't know, in America it is.

Why? Because there are settlements near these objects to provide work for the population. They opened them for this purpose.

But it's not like that with us. All our facilities are very far away, and there are no settlements near them at all.

So, we have our own peculiarities. We have a national park, and it seems to me that this is enough for Kazakhstan.

2. What potential does Kazakhstan have in opening and developing a Geopark?

Kazakhstan has a very big potential. But there are few such objects where there is both a natural object and a settlement. I think they are few.

But there is Burabay. Everything is already developed there. There are criteria for this site to be included in the World Heritage List. And there is a complete anthropogenic intervention there.

But there is potential, of course.

3. You said earlier that we have national parks. In your opinion, is the presence of national parks enough for Kazakhstan? The question is related to whether it is important to create a Geopark in protected areas, for example, in the territories of a national park. Because I heard that on the territory of Altyn-Emel they plan to create a Geopark in the future. In your opinion, this is already a protected site. Obviously, anthropogenic load and so on, they play a very big influence. And is there any significance to build on the territory of the national park or, in your opinion, it should be in a separate area?

I think there are enough national parks. Because the income from the Geoparks there is tourism. And in these national parks all our beautiful objects are already located.

And tourism activity is already developing there, developing well. Therefore, I personally do not see the point in giving any other status separately. Moreover, there are sites that are already included in the UNESCO World Heritage Sites. And why else should they be given the status of a Geopark? I do not see the point.

4. What future can expect the development of Geoparks in Kazakhstan? In your opinion, will they be opened at all or will there be none at all?

I studied Fishman, but after Fishman a commission and even a package of documents was created to include in this list, I think, the objects in Mangystau. They have already tried to do it, but it didn't work out, apparently, since we haven't opened it yet. That is why it is not clear. It should be a very big interest at the state level. If the state was already interested, then maybe we will finish it. But here, it turns out, everything remains the same.

Some group just wanted to bring this topic up to date, but unfortunately it didn't work out.

5. You mentioned that we have UNESCO sites and a Geopark. In general, there is an international network of UNESCO Geoparks, including our neighbours China, Iran, mostly in Europe and America. Do you think we can enter this UNESCO network as well? Exactly on Geoparks.

Geoparks? It's just that these sites should be unique. They shouldn't be anywhere else. And to determine this uniqueness, we need research.

We must study all our natural objects. Not just to mark the coordinates, but to study them, to study them and to determine their uniqueness. Whether this object is really unique. Or not of this scale, let's say. That's why we need research. Maybe it is possible to determine some objects by uniqueness, by some of these characteristics.

And so, I can't say. We have beautiful places, but on a global scale they seem to be lost.

6. What obstacles do you see on the way to creating a Geopark in Kazakhstan?

None. You just have to do it, bring it to the end. When something develops, there is necessarily state support.

Or we have some kind of programme. We have to work on this programme. And then we pay attention to the problem, to the issue.

And this is what we develop. And when the state is not interested in it, it does not develop. And the fact that a group of scientists see that there is some potential in it, and they are fighting for it, but they cannot bring anything to the end, because the state does not support it.

7. Is there any sense at all to create a Geopark also in border regions, for example, with Russia or with other neighbouring countries, in order to strengthen relations on the one hand, and on the other hand just peace building, what we call in English now very popular term peace building. Does it even make sense to build on the border areas? Or is it better to build inside first?

No, it is not building there. Let's say some kind of facility already exists there, and they create infrastructure around it.

Why not? That is, when there is work, the population goes there. And it is precisely we have to protect our border territories with our own people. And our problem is that there is not enough population in the border areas.

Especially on the northern borders. So, I think it's fine if there are facilities there. I don't think there are.

Geological facilities, right? Mostly geological, yes.

8. Which department should be involved in the development of Geoparks? Is it exactly the Ministry of Nature Protection or tourism, in your opinion?

There is no Ministry of Tourism.

I believe that this issue should be handled by the Institute of Geography. Because we need research to determine uniqueness, originality. There are many characteristics.

We do all this to show our country on the world stage. And for this we must first determine uniqueness. Then we will already shout loudly that yes, we have this.

Yes, natural resources. Because all specially protected natural resources belong to them. I mean, why the Institute of Geography? To study them and determine their value. That's why we should do it.

9. Yes, I totally agree. Because I was also in the department of GIS, in the department of landscape studies. So, I have an idea of what the Institute of Geography does. The Institute of Geography, as far as I understand, is supported by the state. Including funding. If funding is allocated for this subject, then you do research. And so, to speak, on your own, as discoverers, so to speak.

They're enthusiasts. Yes, enthusiasts. The thing is, we have a lot of projects.

Yes, we have doctoral students, scientific applicants who have their own topics. But we always try to make sure that our projects are at least roughly related to their topics. And we all have our own areas in which we defended our thesis.

Naturally, we always try to work on our own topic, because we have experience and competence. We try to do in our own direction, write articles and so on. But we don't have one on Geoparks.

Yes, we have mostly all projects on specially protected natural territories. We always try to participate there too. But we don't have any on Geoparks.

If there is funding, or if we see the need for it, that it is relevant, that it will be funded, we can write a project to be funded. And within that project, of course, we will do research. As it is, we don't have a single specialist who is interested in this and wants to do some work.

When there are orders, we fulfil them. We have quite a lot of them, and there is no free time. So that's how it works.

I see. Thank you for the interview. Thank you very much.

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