CLIMATE LANDSCAPE AND RISKS ANALYSIS FOR CHILDREN IN MONGOLIA (second version)

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Ulaanbaatar

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ACRONYMS

ADB	The Asian Development Bank
BAU	Business-As-Usual
CBIT	Capacity-Building Initiative for Transparency
CCE	Continuous And Comprehensive Evaluation
CCKP	Climate Cchange Knowledge Portal
CDCP	Centre For Disease Control and Prevention of United States
CEE	Climate, Environment and Energy
COP 25	25th Conference of Parties
DRR	Disaster Risk Reduction
ERC	Energy Regulatory Commission
ESD	Education for Sustainable Development
GCF	Green Climate Fund
GCM	General Circulation Models
GHG	Greenhouse Gas Emissions
GIZ	German Agency for International Cooperation
GOM	The Government of Mongolia
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
JMP	Joint Monitoring Programme
LEAPS	Long-Range Energy Alternatives Planning System
LULUCF	Land Use, Land-Use Change and Forestry
MDGS	Millennium Development Goals
MET	The Ministry of Environment and Tourism
MNT	Mongolian Tugrik
MNUMS	Mongolian National University of Medical Sciences
MOE	The Ministry of Health
MRV	Measurement, Reporting and Verification
NAMEM	National Agency Meteorology and the Environmental Monitoring
NCC	National Climate Committee
ND-GAIN	Notre Dame Global Adaptation Initiative

NEMA	National Emergency Management Agency
NGO	Non-Governmental Organizations
NREC	National Renewable Energy Center
NSO	The National Statistical Office
PHI	Public Health Institute
PIN	People In Need
PM	Particulate Matter
SDC	Swiss Agency for Development and Cooperation
SDGS	Sustainable Development Goals
UN	United Nations
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children’s Emergency Fund
USAID	United States Agency for International Development
USD	United States Dollar
WASH	Water, Sanitation and Hygiene
WB	The World Bank
WHO	World Health Organization
WSRC	Water Services Regulatory Commission

GLOSSARY

Disaster Risk -DR
DR means estimated losses (including death, injury, loss of properties and livelihood, and damage of the surroundings, etc) (or) the impact due to the vulnerability of the people and the natural disasters or man - made disasters.

Disaster risk reduction-DRR
DRR called disaster risk management (DRM) is a systematic approach to identifying, assessing and reducing the risks of disaster.

Climate Risk-CR
CR Climate risks are those risks that are associated with the potential impacts of climate change. These risks can be physical, financial, or reputational in nature.

Climate change
Climate change describes global warming, the ongoing increase in global average temperature and its effects on Earth's climate system. Climate change in a broader sense includes long-term changes to Earth's climate.

Climate change adaptation-CCA
Climate change adaptation is the adjustments societies or ecosystems make to limit the negative effects of climate change or to take advantage of opportunities provided by a changing climate.

Hazards
A source or a situation with the potential for harm in terms of human injury or ill-health, damage to property, damage to the environment, or a combination of these.

Vulnerability
The potential to be harmed by natural hazards.

Exposure
Direct physical and/or sensory contact with the natural environment and the Intergovernmental Panel on Climate Change (IPCC) is an international body that assesses the science related to climate change.

UNIT OF MEASUREMENT

dGH- degree of hardness
kg/m^3 –kilogram
kW - kilowatt
kWh – kilowatt-hour
$kWh/m^2/day$ –kilowatt per meter squared per hour
LPCD – liter per capita per day
I/c.yr –liter per capita per year
I/sec- liter per second
m – meter
mm- millimeter
m/s^2 – meter per second squared
m^3/h- cubic meter per hour
MW-megawatt
mg/I- milligram per liter
$\mu g/m^3$ - micrograms per cubic meter
mg.dl - micrograms of lead per deciliter of whole blood

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Introduction

Mongolia's distinct geographic and climatic features, including forest steppe, steppe, desert and desert steppe, play a pivotal role in defining its environmental and climate dynamics. This landlocked nation, bordered by Russia and China, exhibits a range of landscapes from the Altai Mountains to the Gobi Desert and vast steppes, culminating in a unique continental climate characterized by sharp temperature fluctuations and sparse rainfall.

Mongolia's climate is marked by its stark extremes. The country endures sweltering summers and frigid winters, with severe weather events like 'Dzuds' — harsh winters following dry summers — significantly impacting its pastoral farming community. Additionally, droughts and the advancing desertification, especially around the Gobi Desert, present growing environmental challenges.

The diverse Mongolian landscapes are home to unique flora and fauna, contributing to the nation's rich biodiversity and cultural heritage. However, these ecosystems face threats from climate change. Traditional nomadic lifestyles, central to Mongolian culture, are being altered due to changing pasture conditions. Moreover, key economic sectors like mining and agriculture are grappling with sustainability challenges amid these climatic shifts.

Importance of the Study

This study delves into the impact of climate and atmospheric changes on children, focusing particularly on education and Water, Sanitation, and Hygiene (WASH). It highlights the need for child-centric approaches and sustainable strategies to preserve ecosystems, ensure WASH security, maintain educational continuity, and safeguard health and safety.

Scope of Work and Objectives

Aiming to provide a comprehensive analysis of climate risks for children in Mongolia, the study assesses the current state of climate change, reviews national policy measures, examines environmental impacts on children, and proposes actionable recommendations for child-sensitive climate policies. It covers a survey report, a synthesis of key findings, and recommendations for policy adaptation, while also outlining strategies for engaging children and youth in climate-related actions.

Research Methodology

Employing a hybrid methodology that combines qualitative and quantitative approaches, the study examined diverse ecological regions across five Mongolian provinces. The research involved a participant pool of 3,879, primarily comprising students, supplemented by teachers, social workers, and parents. Through surveys, group discussions, and interviews, the study collected comprehensive insights into how climate change affects children's lives, examining both direct and indirect impacts.

Key Research Findings

Climate Change and Its Socioeconomic Impacts

The study identifies a significant rise in temperatures in Mongolia over the past century, a trend that poses severe challenges to its unique climate and socioeconomic structure. Children, comprising nearly 30% of

the population, are particularly vulnerable to these environmental changes. The increasing frequency of extreme weather events, such as Dzud, profoundly affects the traditional pastoral economy. This not only leads to a loss of livestock but also threatens the livelihoods of many Mongolian families, potentially catalyzing urban migration and placing additional stress on urban infrastructures. The study observes a direct correlation between climate change and the disintegration of traditional lifestyles, underscoring the need for robust, adaptive strategies to support affected communities.

Climate Awareness and Educational Gaps

A concerning finding is the general lack of awareness among the population about the processes driving climate change, its causes, and effects. While there is some understanding that human activities primarily drive climate change, a fundamental knowledge gap exists. This highlights an urgent need for comprehensive awareness-raising campaigns. Such campaigns should leverage reliable information sources and present them in accessible language to enhance public understanding and foster a more informed response to climate challenges.

Regional Variations in Climate Impact

The research reveals that different regions in Mongolia are experiencing varying patterns of drought, indicative of the pervasive influence of climate change. Some areas face escalating drought conditions, altering the ecological and socioeconomic landscape, while others maintain relatively consistent, albeit challenging, conditions. This regional variation underscores the complexity of climate change impacts and the necessity for tailored approaches in response strategies.

WASH and Education Under Strain

Significant impacts on Water, Sanitation, and Hygiene (WASH) and the education sectors emerge as critical areas of concern. The exacerbation of natural disasters due to climate change hampers children's access to essential services, disrupting their normal life and educational journey. The destruction or impairment of WASH facilities during such events poses serious health risks, particularly for children, and highlights the need for resilient infrastructure and contingency planning. In the education sector, climate change has led to increased school absences and infrastructural damage, suggesting an urgent need to reinforce educational facilities and curricula to better adapt to these challenges.

Recommendations

Comprehensive WASH Strategy:
A holistic approach to improving WASH facilities, particularly in schools and kindergartens, is essential. This involves enhancing legal frameworks to adequately address children's needs in the face of climate change, aligning efforts with global and national goals like the UN's Sustainable Development Goals and Mongolia's Vision 2050. It is also crucial to develop sustainable financing plans for WASH initiatives and to focus on constructing and upgrading WASH infrastructure to be resilient to climate change. The adoption of advanced, environmentally friendly technologies will be key in adapting these facilities to changing climatic conditions. Furthermore, training and capacity-building programs for local personnel will ensure the effective and sustainable operation of these infrastructures.

Enhancing Education Resilience:
Addressing climate change resilience in the education sector requires a multi-pronged approach. This includes fortifying school buildings and other educational facilities to withstand extreme weather conditions and updating the curriculum to incorporate climate change education tailored to local contexts and

challenges. Continuous data collection and analysis will be crucial in understanding the evolving impact of climate change on education, guiding policy decisions and targeted interventions. This approach will equip students with the knowledge and skills necessary to navigate and mitigate the effects of climate change, ensuring their continued access to quality education even in the face of environmental disruptions.

Energy and Health Focus:
Implementing Mongolia's "VISION-2050" policy, with a strong emphasis on transitioning to cleaner, renewable energy sources, is crucial for reducing environmental pollution and mitigating health risks associated with poor air quality. Enhancing the energy efficiency of educational and residential buildings through modern insulation techniques, heating systems, and infrastructure upgrades is imperative. Additionally, establishing comprehensive air quality monitoring systems will enable tracking of pollution levels and assessment of the effectiveness of mitigation measures. Investment in research and innovation to develop new, clean, and efficient heating technologies is also essential.

Parental Engagement and Child Safety:
Enhancing child safety and well-being requires significant parental involvement and awareness. Educating parents about the impacts of climate change and environmental hazards on children's health is critical. This can be achieved through targeted awareness campaigns that offer practical advice on improving home environments, such as the use of air purifiers and the planting of indoor plants. Nutrition is crucial in bolstering children's health against environmental stresses, thus encouraging parents to provide vitamin-rich and nutritious diets is essential. Promoting safe recreational practices, especially during extreme weather conditions like summer heat, to prevent water-related accidents among children is also important.

Infrastructure and Urban Planning:
Strategic urban planning is necessary to address the challenges posed by climate-induced urban migration. This includes developing and expanding urban infrastructures to accommodate increasing populations while ensuring environmental sustainability. Separating industrial areas from residential zones is critical to reduce pollution exposure and enhance the quality of life. The implementation of green spaces and recreational areas in urban designs can provide natural cooling areas and improve overall urban air quality.

Emergency Preparedness and Response:
Developing comprehensive emergency preparedness plans is crucial, especially for schools and community centers. These plans should address the provision of essential services like water and sanitation during climate-induced disasters. Training school staff and community leaders in emergency response and disaster risk reduction can enhance local resilience and ensure quick, effective action in crisis situations.

Community Engagement and Capacity Building:
Engaging local communities in climate change discussions and actions is essential. Facilitating community workshops, information sessions, and inclusive decision-making processes will build community capacity to adapt to and mitigate the impacts of climate change. This not only protects vulnerable populations like children but also fosters a culture of sustainability and environmental stewardship.

By addressing these areas comprehensively, Mongolia can significantly mitigate the adverse effects of climate change on children, paving the way for a resilient and sustainable future for younger generations.

CLIMATE LANDSCAPE AND RISKS ANALYSIS FOR CHILDREN IN MONGOLIA

INTRODUCTION

Mongolia’s Geographic Overview

Mongolia's geography a tapestry of mountains, deserts, steppes, and freshwater resources not only paints a picture of natural beauty but also sets the stage for understanding the complexities of its climate and the challenges and opportunities it presents.

Mongolia, located in East and Central Asia, holds a unique position, both geographically and geopolitically. Nestled between two prominent nations, it finds Russia to its north and China to its south. This landlocked nature not only shapes its political and economic dynamics but also has profound climatic implications due to its vast continental expanse.

One of Mongolia's defining features is its remarkable topographical diversity. The towering Altai Mountains stretch across the western part of the country, influencing both the regional climate and the ecosystems they harbor. These mountains act as barriers, intercepting moisture-laden winds and creating varied microclimates on their leeward and windward sides.

Further south lies the Gobi Desert, one of the world's most iconic arid regions. Contrary to popular perception, the Gobi isn't just vast expanses of yellow dust In fact, it's characterized by its bare rock formations. This desert, with its stark landscapes, presents both ecological wonders and challenges for human habitation.

In contrast to the arid Gobi, the central and eastern parts of Mongolia are dominated by expansive steppes and grasslands. These lush plains support a myriad of wildlife and have been the backbone of Mongolian culture, catering to the traditional nomadic herding lifestyle for centuries.

Mongolia's fresh water resources, such as Lake Khuvsgul, play pivotal roles both ecologically and culturally. Lake Khuvsgul, in particular, stands out not just for its sheer size but also for its biodiversity, serving as a lifeline for numerous species and communities around it. Complementing these lakes are the country's major rivers, like the Orkhon and Selenge. These rivers are crucial, providing ecological sustenance and supporting human settlements.

Another noteworthy feature of Mongolia's geography is its elevation. As one of the highest countries in the world, it boasts an average elevation of 1,580 meters above sea level. This high-altitude positioning has direct implications for its climate, often resulting in colder winters and underpinning its continental climate characteristics.

Lastly, external climatic influencers play a part in shaping Mongolia's weather patterns. The Siberian High, a dominating high-pressure system over Siberia during winter, exerts a significant influence, bringing with it the chilling winter temperatures Mongolia is often associated with. Additionally, the vast Tibetan Plateau to the south can impact the country's weather patterns, especially in terms of moisture distribution.

Historical Climate Overview

Mongolia's continental climate is marked by stark extremes, due in part to its distance from oceans. This inland positioning results in pronounced temperature fluctuations: sweltering summers often

surpassing 20°C and harsh winters where temperatures frequently dip below -20°C. Precipitation is typically sparse, majorly occurring in summer, but its distribution has shown variable patterns.

More than just average conditions, Mongolia's historical climate narrative includes severe events such as 'Dzuds'. A Dzud, a harsh winter following a dry summer, can have catastrophic effects on pastoral farming, which remains pivotal to Mongolian livelihoods. Over the years, these have led to significant livestock losses. Droughts have been too frequent, affecting agriculture and accelerating desertification, especially near the Gobi Desert.

Environmental Significance

Mongolia's diverse landscapes range from vast steppes central to nomadic lifestyles, the intricate terrains of the Gobi Desert in the south, to dense taiga forests in the north. These ecosystems not only define Mongolia's environmental tapestry but also underpin its economic and cultural facets[1].

Amidst these terrains thrive unique species, with some like the Przewalski's horse and the Bactrian camel being iconic symbols of Mongolia's rich biodiversity. The importance of these species extends beyond symbolic value; they're vital cogs in their ecosystems' functionality.

Acknowledging its ecological wealth, Mongolia has designated various regions as conservation areas and national parks. Gobi Gurvansaikhan National Park protects the desert's distinct inhabitants, while Hustai National Park stands as a beacon of conservation success, notably for the reintroduction of the Przewalski's horse. These parks not only shield biodiversity but emphasize the harmony required between human pursuits and environmental conservation[2].

The recent climate data suggests that Mongolia has seen a warming of approximately 2.24°C over the last 70 years, which has led to changing a pasture productivity and its patterns, impacting the traditional nomadic cycle[3]. However, environmental concerns persist. An estimated 852 rivers, 2,048 lakes, and 2,702 springs have dried up due to mining activities and over-extraction of underground water. Agriculture, despite being overshadowed, is significant, with 70% of the total land area used for pastoral livestock herding. Yet, unsustainable practices have led to 70% of the country's territory being affected by desertification to some degree[4].

The importance of the study

In Mongolia, the nexus of climate and atmospheric changes significantly impacts children, particularly in areas of education and Water, Sanitation, and Hygiene (WASH). Understanding these trends is crucial for several reasons:

- Ecosystem Preservation: From vast steppes to the Gobi Desert, safeguarding Mongolia's unique ecosystems ensures that future generations can learn from and appreciate their natural surroundings.
- WASH Security: Mongolia's precipitation patterns can strain water resources, crucial for sanitation and hygiene in schools and communities. Effective management ensures that children always have access to clean water and proper sanitation, vital for their health and well-being.
- Educational Continuity: Climatic extremes can interrupt schooling, depriving children of consistent learning environments. Understanding these patterns helps in planning school calendars and

[1] UNESCO, 2014, Desert Landscapes of the Mongolian Great Gobi

[2] CMS, 2017, Addition of Three Species Proposed by Mongolia to the Appendices of CMS

[3] Mongolianz, 2023, “Nomadic Culture in Mongolia: Balancing Tradition and Modernity

[4] Asian Development Bank, 2020, Mongolia’s Economic prospects

infrastructure resilient to weather disruptions. Mongolia's rich cultural heritage, deeply influenced by its climate, is a vital component of educational curricula. Recognizing and understanding climatic forces is key to preserving this legacy for educational purposes.

- Health and Safety: With fluctuating temperatures comes an increased risk of illnesses. Ensuring children have access to clean water and safe sanitation practices in schools and communities can combat many health challenges they may face.
- Strengthening of legal environment: There are policy documents that are potentially empowers policymakers with essential insights to develop child-centric, sustainable strategies. Just due to the lack of regulatory documents and bylaws, there is no implementation.

By positioning children at the heart of the conversation, especially in the domains of education and WASH, this report underlines the urgency of addressing climate challenges in Mongolia. The aim is to pave a future where children not only survive but thrive amidst evolving climatic scenarios.

SCOPE OF WORK AND OBJECTIVE

2.1 Objectives

This study aims to develop a report on the climate landscape and risks analysis for children in Mongolia and has the following objectives:

- To define the current state of climate change and its impacts, risks, and vulnerability of children especially in Education and WASH service in the country
- To assess national climate-environment policy measures from the perspectives of children on Education and WASH service.
- To assess target areas' climate-environmental changes impact to children in order to Education and WASH.
- Make an analysis linkage between project findings and the UNICEF framework and to provide actionable recommendations for the Government of Mongolia and UNICEF, including the design and implementation of inclusive, equitable, and child-sensitive climate and environmental policies and measures, including Mongolia’s Nationally Determined Contribution, National Adaptation Plan, Education and WASH sectors and sub-national policies and programs.

2.2 The scope of work

- An analysis of the current state and evidence of climate change in Mongolia, and its impact, risk, and vulnerability on Education and WASH services.
- An assessment of the effectiveness of national climate-environment policy measures regarding children's education and WASH services.
- A survey report that presents qualitative and quantitative data on the relationship between climate change and education and WASH services for children in targeted areas.
- A summary of the main findings of how climate change affects children in specific areas, highlighting the key issues and challenges.

- A set of recommendations outlining child-sensitive measures that can be integrated into adaptation policies to reduce children's exposure and vulnerability to climate change, along with practical recommendations.
- Key climate mitigation and adaptation policies and programs to improve education and WASH services, emphasizing the importance of child-sensitive approaches.
- Recommendations for empowering and engaging children, adolescents, and youth in climate and environmental actions, as well as strategic recommendations for child-sensitive climate and environmental education programming in Mongolia.
- A factsheet that summarizes the key findings of the project, making the information easily accessible and understandable to a broad audience.

This report has four main components. The first component delivers into the Climate change, Education, Health and Air pollution situation in the country; the second part assesses government responses and priorities to address children's needs, the third part draws on the impacts on above mentioned issues on children by survey and focus group discussion, and the last part identifies strategic recommendations for child-sensitive Climate, Environment and Energy (CEE) programming in Mongolia[5].

2.3 Theoretical Framework

The framework for this study aims to analyze the impact of climate and environmental changes on children's well-being in Mongolia. It presents the factors that influence their well-being and highlights the relationships between the different actors and stakeholders. The framework is structured into seven steps and covers eight climate change impacts specifically in five selected provinces, which represent different natural ecological zones. The "Deliverables" category of the framework provides a detailed analysis of the concepts and aims to achieve effective development actions and desired outcomes. The framework is illustrated in Figure 1.

[5] UNICEF, 2019, The impact of climate change on education in Mongolia

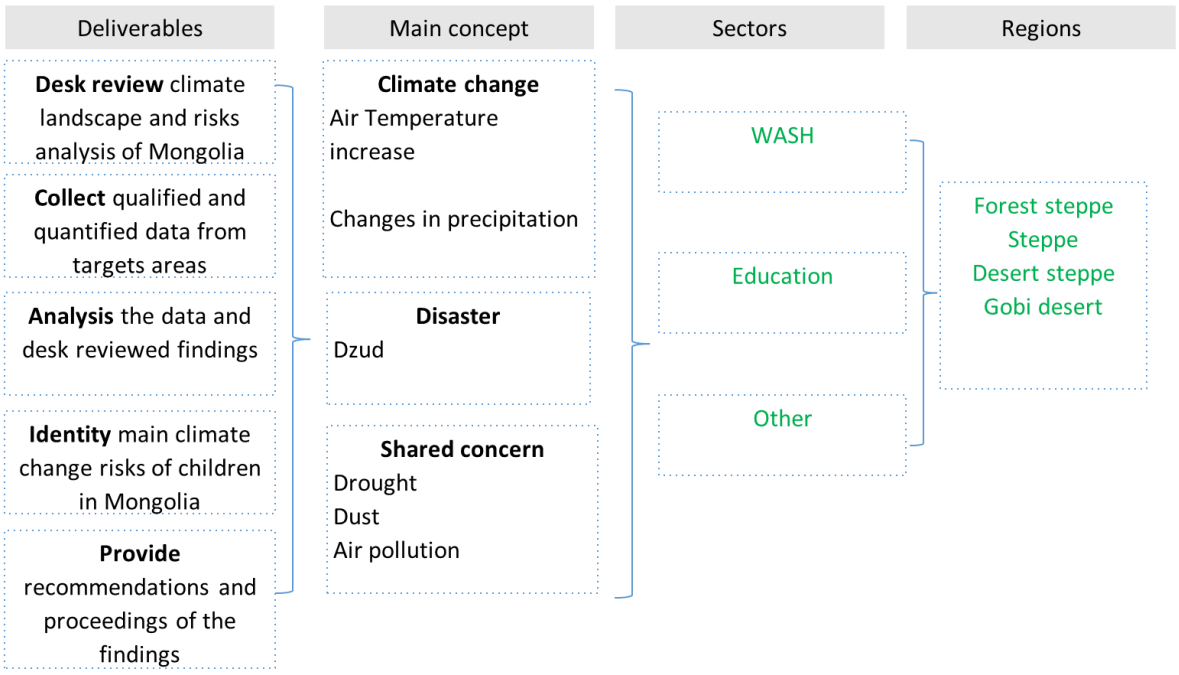


FIGURE 1.The theoretical framework of the Climate landscape and risks analysis for children in Mongolia

As stated in UNICEF 2015 Annual Report, the effects of climate change diseases, droughts and floods that destroy food sources and livelihoods– further exacerbated risks to children and deepened deprivation for millions. Crushing poverty and widening disparities in health, education and protection undermined the lives and prospects of many more. Children who are given a fair start in life – nurturing care, access to nutrition and basic health services, an education, protection from violence and exploitation – are more likely to fulfill their potential as adults and make their societies richer in every sense.

A study by UNICEF on children in crisis in Mongolia highlights the need for urgent action on climate change and its impacts. In Mongolia, a conceptual framework for analyzing the climate landscape and risks for children involves a series of steps, as gleaned from its scope of work and outlined deliverables[6].

Step 1: Identifying the Impacts of Climate Change on Children in Mongolia: The first step involves evaluating the current state of climate change and its impacts, hazards, and vulnerabilities on children in Mongolia. This includes assessing the impacts on access to WASH, education, health and of nutrition, and future prospects. This step provides a baseline for further analysis and action.

Step 2: Assessing the Policy Landscape: The second step involves evaluating the national climate-environment policy measures that impact children's access to WASH, education, air pollution and health. This step will help identify gaps in current policies and highlight areas that need improvement.

Step 3: Conducting a Survey: The third step involves conducting a well-designed and quantified survey to determine the relationship between climate change and education and basic needs services for children in targeted areas. The results from this step will provide key insights into the challenges and opportunities in addressing climate change's impacts on children.

[6] UNICEF, 2015, Annual Report

Step 4: Incorporating Child-Sensitive Measures: The fourth step involves incorporating child-sensitive measures to reduce exposure and vulnerability to climate change into climate adaptation policies. This step is crucial in ensuring that climate policies take into account the specific needs and perspectives of children.

Step 5: Developing Proposals for Improvement: The fifth step involves making proposals for improving the education and basic needs services through key climate mitigation and adaptation policies and programs. This step will provide concrete recommendations for improving the well-being of children in Mongolia in the face of climate change.

Step 6: Empowering and Engaging Children: The sixth step involves developing recommendations for empowering and engaging children, adolescents, and youth in climate and environmental actions. This step will ensure that the next generation is equipped to tackle the challenges of climate change.

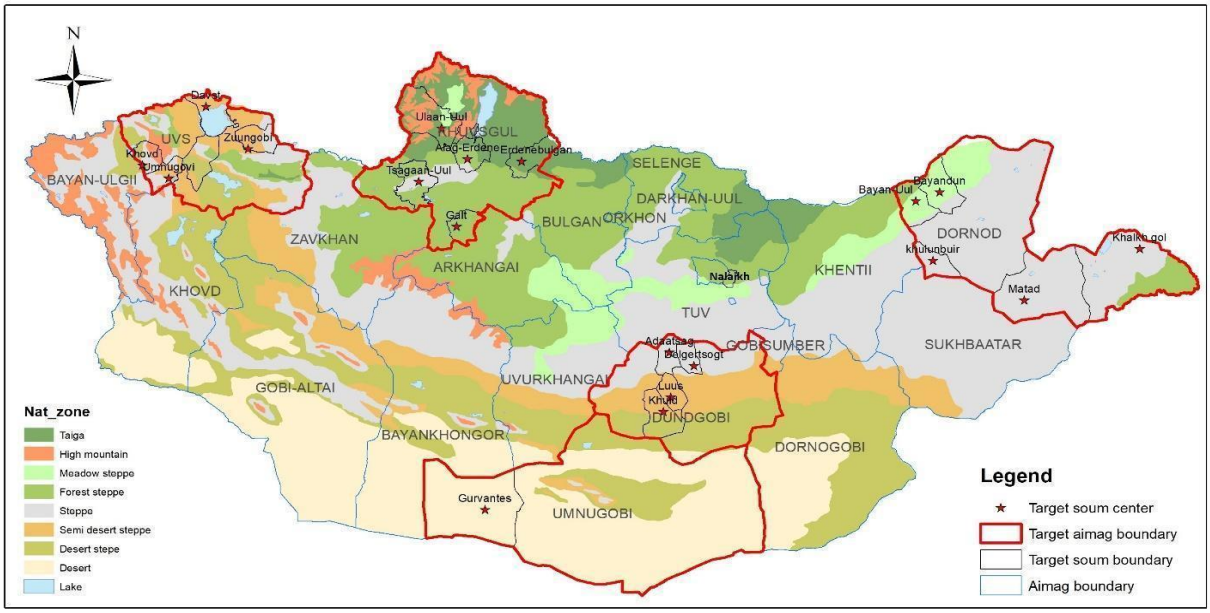
Step 7: Preparing Fact Sheets: The final step involves preparing fact sheets detailing the main findings of the analysis to communicate the results to relevant stakeholders. This step is important for raising awareness and promoting action on the impacts of climate change on children in Mongolia.

Research methodology

The methodology employed in this study forms the cornerstone of our endeavor to comprehensively explore the impacts of climate change on children and their responses. Through a systematic approach that integrates both qualitative and quantitative techniques, we sought to gain a deep understanding of the intricate relationships between climate change trends and their consequences for children's well-being. This section outlines the sequential steps undertaken in this research, providing insights into how we collected, analyzed, and validated data to generate meaningful insights, robust conclusions, and actionable recommendations. By combining diverse data sources and engaging various stakeholder perspectives, our methodology ensured a comprehensive and insightful exploration of the complex dynamics at play in the intersection of climate change and children's lives.

Study sites

To emphasize eco-region-specific evidence of climate change and its impacts on child health and education, a careful selection of 5 provinces was made. These provinces were chosen to effectively represent diverse ecological regions (Figure 1, Annex 1). When selecting research sources, consideration was given to the diverse zones in Mongolia.



MAP 1. Map depicting 5 selected provinces that are able to represent a target ecological regions

The survey and group discussions encompassed 25 soumsoums from 5 provinces of 4 different zones Involving a total of 3879 participants. Out of the total participants, 87 percent were students, 7 percent consisted of teachers and social workers, and the remaining 6 percent were parents.

375 number of group discussions and questionnaires from 3143 and On and On interview taken from 361 people conducted. were conducted with members of the local community, to comprehensively grasp how individuals perceive and respond to the impacts of climate change.

ɔThe survey participants and the participants in the group discussions were categorized as follows:

- School Pupils (Age Group cohorts: 6-11 years old, 12-15 years old, 16-18 years old
- Teachers
- Administrative Staff of Secondary Schools
- Parent Representatives

TABLE 1. Survey Participants

Zones	Students			Adults	
	Primary	Middle	High	Parents	Teachers and officials
Forest	226	216	170	18	15
Steppe	366	246	132	36	30
Desert steppe	585	467	256	56	49
Gobi desert	135	94	35	6	5
Total	1312	1023	593	116	99

TABLE 2. Focus Group Discussions

Provinces	Face to face interview	Group discussion				
	Adult	Adult		Students		
	WASH related officials	Parents	Teacher and soil specialist	Primary	High	Junior
Forest steppe	75	20	22	20	20	20
Steppe	98	21	19	19	17	20
Desert steppe	173	43	20	28	34	29
Gobi desert	15	6	5	4	4	4
Total	**361**	**90**	**66**	**71**	**75**	**73**

TABLE 3. WASH Respondents

Provinces	WASH related officials
Forest steppe	75
Steppe	98
Desert steppe	173
Gobi desert	15
Total	361

Primary Data Analysis

The primary data analysis was completed for the climate change impacts and response strategies, based on the survey indicators. A total of 3879 participants were covered through the survey and group discussions across selected soums in five different provinces, representing distinct ecological regions (Table 2).

Step 1: Inception Phase and Desk Review

During this phase, a preliminary desk review and assessment were conducted to understand the main implications of climate change for children in Mongolia. The team identified potential benefits and prepared initial recommendations for actions by relevant stakeholders in CEE-related areas. To develop insightful findings, conclusions, and recommendations useful for UNICEF, decision-makers, stakeholders, and non-profit organizations, a mixed-method approach was employed.

Step 2: Data Collection

The research study employed both qualitative and quantitative methods for primary data collection, aiming to gain a profound insight into each target area's situation. The qualitative method facilitated drawing generalizations, unveiling trends emerging from participants' thoughts, ideas, and perceptions, and delving into the underlying contexts and intricacies of the issue.

Data was collected on selected indicators related to climate change and extreme weather events, with a specific focus on children in Mongolia across different age groups. The qualitative method helped uncover trends and generalizations from participants' perspectives and dived into the contextual intricacies. Paper-

based surveys focused on herder's children and children living in soum centers, categorized into three age groups: 1) 9 to 11, 2) 11-15, and 3) 16-18. Questionnaires for different age groups are attached in Annex 2. Detailed information about student numbers and schools is provided in Table 5.

As a complementary aspect of the survey, group Interviews were carried out in six categories: primary school children, middle school children, secondary school children, parents, teachers, and school directors and managers.

Selected participants from different groups were required to exceed 10 percent of the total number of pupils within the same group (Table 5).

Key Informant Interviews and Focus Group Discussions

Questionnaires and focus group discussions were organized to gather comprehensive insights from individuals familiar with the community dynamics. These discussions involved a diverse range of participants, including community leaders, professionals, and residents with firsthand knowledge of the community.

In the study conducted across five provinces, 2,928 students from primary, middle and high levels participated. Additionally, 2,015 parents and school officials were surveyed. Key Informant Interviews encompassed 361 respondents. The focus group discussions involved 156 parents and teachers, as well as 219 students spanning primary, high, and junior levels. This diverse set of respondents ensures a comprehensive perspective on the study's subject matter.

Step 3: Data Analysis

In this phase, all the collected data and information on the impact of climate change on children were analyzed. Whenever possible, the data was disaggregated by region to identify correlations with climate change trends. This analysis covered both direct impacts, such as disruptions in access to services due to climate events, and indirect impacts, which included the exacerbation of children's vulnerability to the direct and indirect consequences of climate change.

CHAPTER 1. THE CLIMATE CHANGE AND ENVIRONMENT SITUATION IN MONGOLIA

1.1 The Global Climate Change Landscape

Climate change, a phenomenon impacting our entire planet, denotes long-term alterations in average weather patterns, shaping local and regional climates. Primarily fueled by escalating greenhouse gas (GHG) levels, especially carbon dioxide, it's human-induced activities like burning fossil fuels, deforestation, and agriculture that amplify these emissions[7].

The ramifications of climate change are broad and penetrating. Since the pre-industrial era, global temperatures have surged by 1.1°C, with predictions of another 0.2-2.0°C increase by century's end[8]. This rise results in glacial and polar ice melt, escalating sea levels, and intensifying extreme weather events – from floods and heatwaves to droughts. Ecosystem disturbances also affect biodiversity as species either migrate, become extinct, or find their habitats deteriorating[9].

More than just environmental, the reverberations of climate change are palpable socially and economically. Poverty and disparities are magnified, particularly in vulnerable developing countries. Alarming trends show compromised food security due to plummeting crop yields, while the uptick in natural calamities disrupts economies and infrastructure.

It's vital to recognize the intricacies and multifaceted nature of global climate change. Its impacts are interwoven, necessitating a holistic, persistent international response, engaging every nation, community, and sector[10].

Figure 2 accentuates the continuing warming trajectory. Forecasts suggest that global temperatures could soar, reaching an alarming 4.3°C increase by 2100 under the RCP8.5 scenario – representing the highest emission trajectory with an atmospheric carbon dioxide concentration at 8.5 W/m^2. Such a pathway would have profound implications for both global ecosystems and humanity.

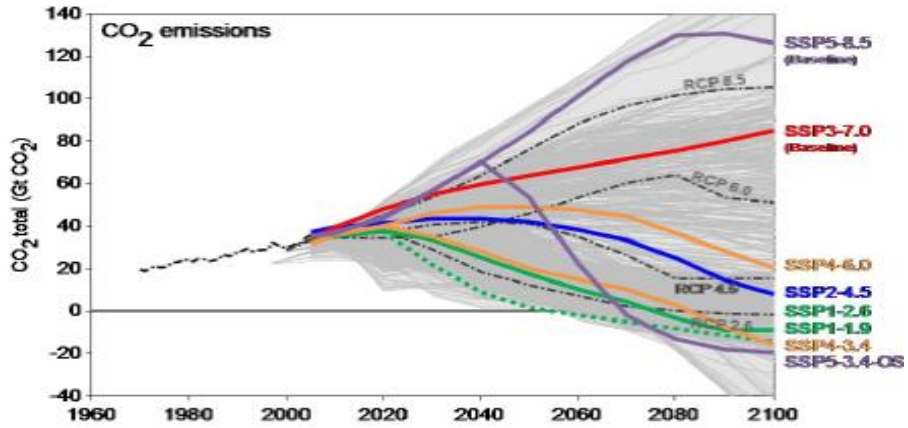


Figure 2. Projected CO_2 Emissions Scenarios

[7] UN, 2021, What is Climate Change
[8] Becker et al., 2015
[9] Intergovernmental Panel On Climate Change, 2015, Impacts of 1.5°C of Global Warming on Natural and Human Systems
[10] UN, 2021, Climate Change 'Biggest Threat Modern Humans Have Ever Faced', World-Renowned Naturalist Tells Security Council, Calls for Greater Global Cooperation

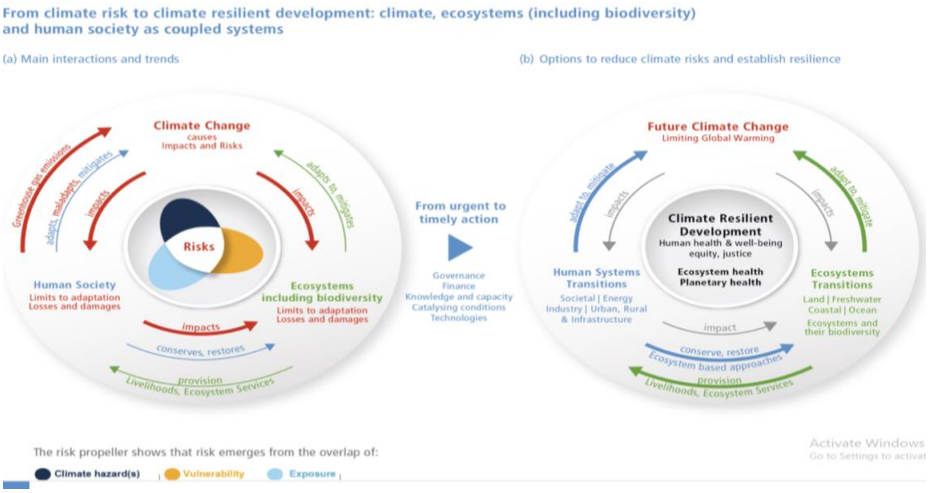
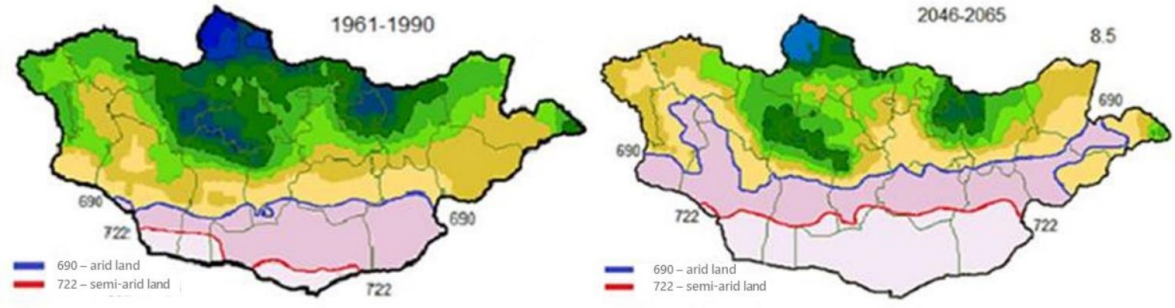


FIGURE 3. Climate change risks to climate-resilient development (Source: IPCC Report 2022)

The 2022 Intergovernmental Panel on Climate Change (IPCC) report highlights the interconnected factors of climate change and the pressing need for immediate action. The report's main findings are illustrated in FIGURE 3, which demonstrates the interplay and trends of climate change causes, impacts, and risks. The report argues that human societies are at risk from climate hazards, with their vulnerability and exposure to these hazards and vulnerabilities hindering their ability to adapt and leading to increased physical losses and damages. These risks also impact ecosystems, causing significant harm to biodiversity and living organisms. While human societies depend on ecosystems, they also harm the environment through large-scale greenhouse gas emissions. The IPCC identifies both adaptation and mitigation as essential steps to reduce the impact of climate change. In a timely manner, the second picture in the report highlights the transition options necessary to reduce climate risk and promote resilience. To achieve a climate-resilient future where all children can access their human rights, we must focus on energy, societal, industrial, and infrastructural transitions.

The IPCC 2022 report highlights the importance of considering the impact of climate change on children and their access to their human rights. Climate change impacts and risks, such as increased exposure to hazards and limited adaptation, can have significant consequences for children, particularly in regards to their health, education, and overall well-being. Additionally, the report stresses the need for urgent action in terms of mitigation and adaptation to reduce the risks of climate change and create a more resilient future for children. The report emphasizes the need for energy, societal, industry, and infrastructural transitions to create a climate-resilient development environment in which every child has full access to their human rights.

1.2 Climate Change Trends in Mongolia



MAP 2. Mapping of future changes in natural areas of Mongolia.[11]

1.2.1 Temperature Trends

According to the corresponding studies over the past decade, Mongolia has witnessed discernible temperature increases, signaling the impacts of global climate change. Comparing data from 1991 to 2020 to the period of 1961-1990[12], a clear national average temperature rise is evident, with the spring season's average temperature climbing from 1.16°C to 2.73°C. In the Gobi Desert, spring temperatures reached 8.02°C during 1991-2020, a significant increase from 6.50°C in the previous three decades. Furthermore, winter temperatures have softened, averaging -17.66°C over the past 30 years, slightly milder than the -18.71°C recorded from 1961-1990, while summers have become warmer with an average of 17.59°C, up from 16.21°C in the earlier period. The region is also witnessing more frequent and intense heatwaves, with Gobi desert registering a concerning 22.42°C during summer in the 1991-2020 period. Nevertheless, the warming trend exhibits paradoxical effects, as places like Khuvsgul in the forest steppe continue to experience severe cold spells, with recent winters seeing temperatures plummet to lows of -24.76°C[13]. With nearly 30% of the population under 14 years old, children — the most vulnerable segment — are disproportionately affected[14].

1.2.2 Precipitation Patterns

Mongolia's continental climate typically leads to lower precipitation levels, with distinct monthly variations evident when comparing recent years to data from 1961-1990. Notably, July's precipitation levels can reach up to 63.6mm, while January and February remain relatively dry, barely surpassing 2mm. Mongolia's precipitation patterns are strongly influenced by summer monsoons, with historical data from 1961-1990 showing June, July, and August receiving 39.2mm, 63.6mm, and 53.38mm of precipitation, respectively. While winters are drier, they still receive snowfall, essential for pastoralists and water table replenishment. Climate change impacts are increasingly visible through occasional unseasonal heavy rainfalls leading to

[11] Information and research institute of Meteorology, hydrology and environment

[12] WBG 2021

[13] Asian Development Bank, 2021, Climate Risk Profile Mongolia

[14] Asian Development Bank, 2021, Climate Risk Profile Mongolia

flash floods, while regions near the Gobi Desert face frequent droughts, exacerbating Dzuds—a meteorological event causing widespread livestock fatalities.

1.2.3 Dust and Air pollution

CO_2, NO_2, and SO_2 are all pivotal to Earth's atmospheric and climatic processes. While CO_2 is predominantly linked to global warming, NO_2 and SO_2 have complex roles influencing not just climate but also air quality, human health, and ecosystems. Addressing the emissions of these gases is paramount in tackling both climate change and broader environmental challenges.

Carbon dioxide (CO_2) is a colorless and odorless gas naturally present in the atmosphere. It plays a significant role as a greenhouse gas by trapping heat in Earth's atmosphere. The primary sources of CO_2 include natural processes such as respiration by animals and plants, decay of organic matter, volcanic eruptions, and ocean-atmosphere exchange. However, human activities, such as the burning of fossil fuels, deforestation, industrial operations, and specific agricultural practices, have significantly increased CO_2 concentrations. As a result, CO_2 has become central to discussions on global warming due to its enhanced greenhouse effect, which leads to a rise in global temperatures.

Nitrogen dioxide (NO_2), on the other hand, is a reddish-brown gas with a sharp smell. While it does occur naturally from sources like lightning strikes and wildfires, human activities, especially motor vehicle exhaust, power plants, and industrial processes that burn fossil fuels, are its primary contributors. NO_2 plays a role in climate change by producing ground-level ozone, a component of smog, which acts as a greenhouse gas. Moreover, the nitrate particles that form from NO_2 can either cool or warm the atmosphere, contingent upon their nature and location.

Sulfur dioxide (SO_2) is another essential atmospheric component. A colorless gas with a pungent odor, SO_2 can combine with water vapor to form a component of acid rain. While volcanic eruptions release natural SO_2, human activities, especially the burning of coal and oil and certain industrial processes like metal extraction, are its primary sources. In terms of its impact on climate, SO_2 emissions lead to sulfate aerosols in the atmosphere. These aerosols can reflect sunlight back into space, inducing a cooling effect. However, they also affect cloud properties in ways that can influence both cooling and warming.

The provided data gives a comprehensive insight into the levels of SO_2 and NO_2 pollutants across various locations in Mongolia for the years 2018-2022. Such data is crucial for understanding environmental conditions and their potential association with broader global issues like climate change.

For SO_2 Emissions:

- In Dalanzadgad soum of Umnugobi province, SO_2 levels in 2018 peaked in January and gradually declined throughout the year. However, the following years, particularly in 2019 and 2021, recorded spikes around the beginning and the end of the year, suggesting variability in emission sources or meteorological conditions that influenced the pollutant levels. The values for 2022 are unusually high, which might be an anomaly or an error, as they are several magnitudes larger than the previous years.
- Mandalgobi soum of Dundgobi province shows fluctuations in SO_2 levels, with peaks often appearing during the beginning or the end of the year.
- Choibalsan appears to have a consistent SO_2 concentration throughout the years, albeit with slight fluctuations. The 2022 values show an increasing trend, which might warrant further investigation.

For NO_2 Emissions:

- Dalanzadgad soum of Umnugobi province had a notable peak in the last months of each year, particularly in 2018 and 2019. The end of 2021 and beginning of 2022 also saw significant increases in NO_2 levels.
- Ulaangom soum of Uvs province displayed a steadier distribution of NO_2 levels, although there's a noticeable peak in 2019.
- Choibalsan soum of Dornod province had relatively consistent NO_2 levels across the years, but there were a few spikes, notably in early 2019 and 2021.

Considering the broader perspective of climate change, both SO_2 and NO_2 are essential markers. They are primarily produced from the burning of fossil fuels, and their concentration can be influenced by factors such as industrial activity, vehicular emissions, and meteorological conditions. An increase in these pollutants can lead to various environmental and health issues, including acid rain, respiratory problems, and can also contribute to the greenhouse effect, exacerbating global warming.

The variation and peaks in these pollutants across different months and years in these regions of Mongolia might be indicative of changing industrial activities, implementation (or lack thereof) of pollution control measures, or even meteorological influences that might be interlinked with global climate change phenomena.

In conclusion, while the data gives a vital snapshot of pollutant levels in these regions, understanding the exact link to climate change would require a deeper dive into local activities, meteorological data, and potentially, the influence of broader global climatic patterns on Mongolia's environment.

This following finding provides a comprehensive overview of PM10, PM2.5, and CO pollutant concentrations across various locations in Mongolia for the years 2018-2022.[15] These particulate matters are vital indicators for air quality, and their elevated levels can be linked to numerous health issues, including respiratory and cardiovascular diseases.

For PM10 Emissions[16]:

- In Dalanzadgad that represents the Gobi Desert,:
  - 2018 showed highest concentrations in January, November, and December.
  - 2019 had peaks in January, February, and December.
  - 2020 and 2021 showed declines with smaller peaks.
  - For 2022, the values are unexpectedly high, especially when compared to previous years.
- Ulaangom, that represents the Desert steppe had a more consistent PM10 concentration across the years but with peaks in the colder months, potentially indicating increased heating and related activities during those months.
- Choibalsan that represents the Steppe (appearing in 2019 and 2021 data) also shows fluctuations in PM10 levels, notably in the colder months.

For PM2.5 Emissions:

- In Dalanzadgad that represents the Gobi Desert:
  - 2018 showed highest concentrations in November.
  - 2019 and 2020 had noticeable peaks at the start and end of the year.
  - 2021 concentrations seemed to have dropped.
  - In 2022, again, the values are unusually high.
- Ulaangom that represents the Desert steppe showed variability with peaks typically in colder months.

[15] Mongolia Meteorological Institute

[16] Ibid

- Choibalsan that represents the Steppe has data for 2021 and 2022, with 2021 displaying significant peaks at the start and end of the year.

For CO Emissions (Ulaangom - 2018):

- CO levels were highest at the beginning of the year and showed a decline as the year progressed, with a slight increase towards the end.

Considering the broader context, elevated levels of PM2.5 and PM10 particles in the air are concerning from a public health perspective. These particles can penetrate the lungs and even enter the bloodstream, causing various health issues. The primary sources of these pollutants include vehicle emissions, industrial activities, and the burning of fossil fuels. The spikes during colder months can also be attributed to increased heating requirements, leading to the burning of more coal or other heating sources.

As for CO, high levels can be toxic as it prevents oxygen from entering the body's cells and tissues. Prolonged exposure can be harmful and lead to severe health consequences.

To understand the environmental implications and the links to global issues like climate change, a more in-depth study involving local activities, meteorological data, and other factors influencing pollutant levels would be essential. The sudden high values in 2022, especially for Dalanzadgad, should be verified as they could be anomalies or errors.

1.2.4 Climate change and land degradation

Mongolia, a nation deeply interconnected with its environment, faces exacerbated challenges from climate change, primarily influenced by anthropogenic activities[17].

Historically, Mongolia has prided itself on its vast population of over 71.1 million livestock, a cornerstone of its socio-economic identity. However, in the past decade, a staggering 20% surge in livestock numbers, driven by increasing domestic and export demands, has exacerbated overgrazing issues. Consequently, approximately 65% of Mongolia's grasslands now exhibit clear signs of degradation, heightening the nation's vulnerability to climatic adversities, notably the devastating Dzuds, which have resulted in the loss of over 10 million livestock during severe years. For the pastoralist communities, comprising nearly 30% of the population, this land degradation, combined with erratic precipitation, threatens their traditional way of life. Depleted resources have compelled many to migrate to urban areas, contributing to a 60% increase in Ulaanbaatar's population over the past two decades.[18]

While Mongolia's forest cover is just around 8 % of its total land area, illegal logging, particularly in the northern taiga regions, has accelerated deforestation. A report from 2019 indicated a loss of approximately 1.3% of Mongolia's forested areas within just five years. The loss of these forests disrupts local ecosystems, increases CO_2 levels, and intensifies climatic irregularities.

1.2.5 Climate Projections

According to the report titled "Assessing the macroeconomic impacts of climate change and adaptation in Mongolia" published by GIZ (2023):
According to the GIZ future projections indicate a significant rise in average daily temperatures, expected to be between 1.5°C to 5.5°C by the end of the century. This rise is notably higher than the global average.

[17] CIFRC, climate change impact on health and livelihood: Mongolian assessment, 2021

[18] Xinhua, Explainer, why large parts of Mongolia are affected by desertification

Such changes in temperature are not only confined to the average values; minimum and maximum temperatures will see faster changes, with variances throughout different times of the year. Moreover, the trends show an increase in the number of summer days, a decline in frost days, and a continuation in the melting of permafrost throughout the century.

In terms of precipitation, Mongolia's average annual rates are anticipated to rise by 8% to 14% by 2100. Interestingly, snowfall is projected to see an increase of 50-75% as the century progresses.

The hydrological system of Mongolia is on the brink of significant alterations. There has been a noted shift in the seasonality of runoff. Since the turn of the millennium, river flow metrics have consistently fallen below the long-standing average. This has led to the drying up of approximately 600 lakes and a 7% reduction in the national lake area. Despite predictions of minor increments in precipitation levels, experts project a surge in evaporation rates, leading to further declines in lake water levels.

Moreover, there is an increased likelihood of facing severe droughts and Dzud events. Accompanying the rising drought conditions is an increase in consecutive drought years. By the close of the century, under high emission scenarios, the frequency of Dzuds might see a surge of up to 40%[19].

1.3 Main policies on Climate Change and the Environment

1. The Landscape of Legal Frameworks:

Mongolia has no specific laws on climate change that govern the various cross-sectoral activities to address climate change. There are, however, some amendments to existing laws that reflect climate change concerns and promote climate change related activities. The objectives, principles and priority actions for climate change adaptation, mitigation and resilience-building are governed by a variety of different policy documents and programs (Table 4).

TABLE 4. Key policies on climate changes

International Convention	Legal environment	Policy
The United Nations Framework Convention on Climate Change (UNFCCC) (1993)	Law on air quality (1995, amended in 2012	Vision-2050 (2020)
The Kyoto Protocol (1999)	Law on environmental protection (1995, amended in 2007 and 2012)	Nationally Determined Contributions (2015, updated in 2019)
The Paris Agreement (2016)	Law on Environmental Impact Assessment (2012)	Five year Development of Mongolia 2021-2025 (2020)
	Law on Soil Protection and Prevention of Desertification (2012)	Government Action plan 2020-2024 (2020)
	Law on Land Use (2002)	New Recovery Policy (2021)
	Law on Forestry (2012)	

[19] GIZ, 2023, Assessing the macroeconomic impacts of climate change and adaptation in Mongolia

	Law on Energy (2001, amended in 2015)	Sectoral "Targeted Development Programs" (2022)
	Law on Energy Conservation (2015)	
	Law on Renewable Energy (2007, updated in 2015, 2017)	
	Law on Water (1995 and amended in 2004, 2010 and 2012)	
	Law on Waste (2012 and updated in 2017)	
	Law on Disaster Protection (2003 and amended in 2017)	

In the last two decades, Mongolia has implemented over 15 significant legal instruments addressing climate change and children's welfare. However, only three of these explicitly connect children's rights with climate change adaptation measures.

2. Vision-2050 and the Gaps therein:
While the "Vision-2050" earmarks approximately 10% of its budget for climate change mitigation and adaptation, less than 1% is dedicated to initiatives tailored for children. This oversight has potential repercussions on the 800,000 children who reside in areas increasingly vulnerable to extreme weather events.

3. A Closer Look at the Parliament Resolutions:
The National Climate Change Program which was approved as Parliament Resolution No. 02 on 2011, set ambitious targets, aiming to reduce GHG emissions by 20% by 2030. However, its revocation Parliament Resolution No.89 in 2021 leaves the program void. Moreover, while the resolution planned for the construction of climate-resilient infrastructure, only 5% was explicitly allocated for child-centric facilities, such as schools.

4. The Need for a Cohesive Framework:
Recent studies indicate that 40% of Mongolia's schools lack the infrastructure to withstand the extreme climatic events that have increased by 15% over the past decade. This highlights the pressing need to ensure child-specific adaptation strategies are prioritized.

5. Case in Point: Forest Policies and Children's Welfare:
Forests, which cover nearly 8% of Mongolia, play a crucial role in modulating its climate. However, with deforestation rates hovering around 0.3% annually, initiatives like the "Billion Trees" campaign are critical. Yet, without aligning such initiatives with children's welfare — for instance, creating forested areas near schools to ensure cooler environments — the benefits might be limited.

Analysis of regulations on adaptation to climate change in international agreements and conventions on children's living, learning, and living in a healthy and safe environment.

The comprehensive analysis of regulations on adaptation to climate change in international agreements and conventions on children's living, learning and living in a healthy and safe environment is available in ANNEX 5.

Mongolia's dedication to addressing climate change is evident through a series of proactive policies many of which align with international standards. The government has instituted the National Action Program on Climate Change (2011–2021), the National Green Development Policy (2014–2030), and the Sustainable Development Vision 20301. Furthermore, in 2020, they amplified their mitigation ambition by targeting a 22.7% reduction in greenhouse gas emissions by 2030[20].

Mongolia's dedication to addressing climate change is evident through a series of proactive policies, many of which align with international standards. The government has instituted the National Action Program on Climate Change (NAPCC) (2011–2021), the National Green Development Policy (GDP) (2014–2030), and the Sustainable Development Vision 2030. Furthermore, in 2020, they amplified their mitigation ambition by targeting a 22.7% reduction in GHG emissions by 2030[21].

Mongolia, while adhering to its international commitments, must also prioritize its youngest citizens. The alignment of educational strategies with climate change mitigation and adaptation is a pivotal step, in ensuring the holistic well-being of children amidst the changing climate contours.

1.4 Climate change impact in Mongolia

Given Mongolia's expansive and diverse terrain, from dense northern forests to the southern Gobi desert, its climate exhibits pronounced regional variations[22].

Local Climate Trend and Natural Hazards

The analysis of the climate trends and major hazards among the different provinces differences (Table 5) provides a comprehensive understanding of the complex challenges and potential implications that these trends bring forth. These trends collectively underscore the interconnected nature of environmental changes, economic activities, societal dynamics, and public well-being, highlighting the urgent need for adaptive strategies and collaborative efforts.

TABLE 5. Summary of Environmental Issues in different regions

Geographical location	Environment Profile	Issues
Forest steppe	Highly productive region having favorable ratio of air temperature and precipitation. Having important habitats and corridors for rare species	• Having an extra diverse habitats of wildlife that is in tourist destination, attracting 5,000 foreign tourists and 90,000 local tourists annually. Accommodation pressure is high during the season, especially in areas nearby the taiga. • Tsaatan households living in the Taiga need special attention for child protection, education, and health access. • Increased wood usage for energy.

[20] Green Development decision, 2014, Green Development Policy
[21] Green Development decision, 2014, Green Development Policy
[22] MET 2018, UNDRR 2019

Steppe	Naturally one of the most favorable and productive grassland and having important habitats and corridors for rare species	• Climate change has led to increased fire frequency and drought frequency and decline of the natural recovery. • Detrimental effects of the mining sector have been documented. • Fire poses a region-specific danger. • The massive migration to this region cause drastic overgrazing that need a more time and affords to be recovered naturally.
Desert steppe	Have a cold winters and hot summer typical Non-equilibrium system that is more dependent on precipitation One of the heavily impacted and most vulnerable areas to the climate change,	• Increasing drought frequency attributed to climate change. • Survey by National Statistics Committee: 56.2% of Uvs province population has adequate water supply services, and 19.7% have adequate sanitation facilities • Increased frequency of droughts and Dzuds observed. • Herders are traveling longer distances to find a more productive rangeland, often leaving their children unattended. • Extreme yellow dust storm affect more area in desert steppe, causing herder losses, including a child's life, and leaving families homeless. • According to the drinking water quality study in in a region, 64 water samples from 15 soums analyzed and61 samples didn't meet MNS0900:2018 drinking water standard. • As a climate change impact, livestock mobility and need for additional forage increases.
Gobi Desert	• True Natural desert • Typical non-equilibrium	• Most impacted region by mining activities. • Heavy traffic of vehicles, including workers in mining companies and tourists. • Presence of dust problem, which poses a serious health issue due to increased pollutants. • Deforestation-driven desertification intensifies the frequency and duration of occurrences. • Coal is the primary source of energy.

The local climate situation in selected provinces that represent different zones were assessed based on key indicators such as air temperature, precipitation, air pollution, and region-specific factors. To analyze both positive and negative changes in air temperature and precipitation, a five-year dataset (2017-2021) was examined using the NCL and Sigma Plot programs. The baseline for this analysis was the average data from 1991 to 2020.

There was a strong tendency among Mongolians to believe that climate change is happening away from their households, communities, and provinces and that it occurs in the long term.

TABLE 6. Climate change as an urgent issue or not, by ecological regions [23]

Ecological regions	Number of respondents	Urgent	Not urgent	Don't know
Forest steppe	1667	84.4	8.5	**7.1**
Steppe	760	87	9.6	3.4
Desert steppe	180	**92.8**	5.6	1.7
Gobi desert	65	85.9	12.5	1.7

[23] https://gggi.org/report/climate-change-awareness-and-media-consumption-survey-in-mongolia/

Source: Survey with Parents, Teachers, Social Workers (August, 2023)

Success of the implementation of any restoration program depends very much on community acceptance of the climate change impacts and the decline of the recovery potential by time. According to answers of respondents from different regions, Climate change is an urgent issue, so we need to act as soon as possible.

In case missing of any measure on adapted management as the "State and transition models of Mongolian rangelands" describes the state of natural ecosystems will shift into less productive state and the natural recovery slows down and may require more time and energy.

According to the survey results on how the community see the urgency of climate change, relatively high proportion 84.4-92.8 percent of respondents understand the importance of urgency to act against climate change. Especially 92.9 percent of respondents from Desert steppe are more aware of climate change impacts while the 7.1 percent of respondents from Forest steppe were recorded "Don't know" which might be misleading because of having high cover of non-palatable annual plants.

TABLE 7. Summary of key questions on key evidence of climate change, proportion of respondents.

Indicators	Gender		Age group of pupils			Teachers + social workers	Parents
	F	M	Primary	Middle	High		
Due to increased dryness, many rivers, streams and lakes have dried up	63%	62%	63%	60%	68%	100%	55%
As the average air temperature increased, the growing season of plants became longer	12%	13%	13%	13%	12%	35%	9%
The winter season has become shorter while spring and autumn became longer due to the increase in average air temperature	16%	15%	14%	18%	14%	18%	27%
As the average air temperature increased, unknown disease and pests came out	8%	10%	10%	9%	6%	18%	9%

Source: Survey with Parents, Teachers, Social Workers and pupils (August, 2023)

Survey results indicate that only a small percentage of respondents could accurately identify key evidence of climate change. This lack of awareness transcends age, gender, and adult demographic groups, highlighting the urgent need for community-wide educational campaigns on climate change.

1.4.1 Climate change impact in Forest steppe

Characterized by its Siberian taiga, the northern regions of Mongolia experience a subarctic climate, with bitterly cold winters plummeting below -30°C and relatively mild summer highs ranging from 18°C to 20°C. This area witnesses the highest levels of precipitation in Mongolia, with annual averages reaching 400 to 600 mm, largely falling as snow during the prolonged winter months. The prevalence of larch-

dominated forests in this region plays a crucial role in shaping a microclimate that provides some protection against the extreme cold of winter.

Situated on Mongolia's northern border, one of the coldest regions in the country. Despite its challenging climate, the Forest steppe region is home to a substantial human population and serves as a prominent destination for tourism. Each year, the region draws approximately 5,000 foreign tourists and an impressive 90,000 local tourists. This influx of tourists continues to grow steadily at a rate of 10,000 visitors per year.

FIGURE 4.Illustrates the dynamics of air temperature and precipitation in forest steppe region (Source, MET)

As depicted in the figure, there is a notable increase in air temperature during the spring months, particularly in the cold season. This temperature rise has a positive influence on early germination, as well as the growth and development of vegetation. During the cooler season, there has been a noticeable decline in precipitation, ranging from 40 to 70 percent. However, it's worth highlighting that the overall precipitation in the past two years has shown a substantial increase when compared to the average recorded over multiple years[24] .

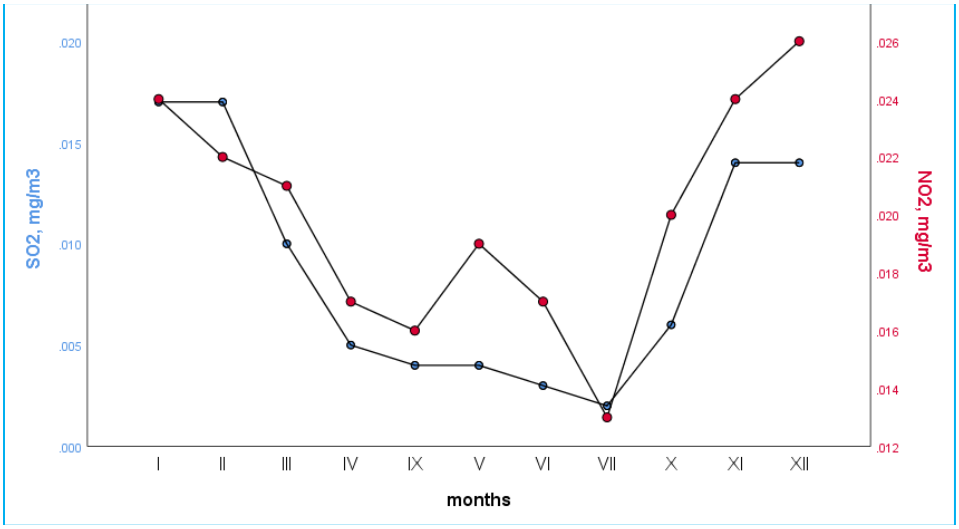


FIGURE 5. Dynamics of the main pollutants of the air

[24] Sonia I. Seneviratne (Switzerland), Xuebin Zhang (Canada), Weather and Climate Extreme Events in a Changing Climate

Owing to its substantial population, cities in forest steppe region, Murun for instance faces a significant challenge in the realm of air pollution (Figure 6). According to air quality monitoring data, sulfur dioxide (SO_2) levels reach their lowest point (0.002-0.002 mg/m^3) in June and July, while peaking at their highest (0.017 mg/m^3) in December and January. Likewise, nitrogen dioxide (NO_2) levels hit their peak (0.026 mg/m^3) in December and January, and reach their lowest (0.013 mg/m^3) between July and September.

1.4.2 Climate change impact in Steppe

Temperature: The steppe, covering a significant chunk of Mongolia, experiences milder winter temperatures, averaging around -20°C. Summers here can reach up to 25°C.

Precipitation: Rainfall here is modest, with annual averages of 200 to 350 mm, peaking during summer.
Vegetation: Grasslands, essential for Mongolia's nomadic lifestyle, depend on summer rains. Changes in moisture levels directly influence grass productivity and coverage.

Steppe region experiences distinct shifts in its precipitation patterns over recent years. The data from the past five years reveals noteworthy changes, particularly in the winter and summer seasons, as depicted in Figure 7. In the winter season, there has been a significant reduction in precipitation, with levels decreasing by 50-80 percent. Conversely, the summer season has witnessed an increase in precipitation ranging from 16 to 68 percent. These alterations in precipitation patterns have important implications for the region's water resources, agricultural practices, and overall ecosystem.

FIGURE 6. Comparison of the average air temperature and precipitation for the years 2017-2021 and ine multiple-year average spanning 1991-2020.

This comparison underscores any deviations from the historical temperature norms, highlighting potential climate shifts.

Additionally, it illustrates the dynamics in precipitation over the recent five years (2017-2021) compared to the baseline multiple-year average (1991-2020). Notably, the precipitation levels in specific months exhibit distinct behaviors. In the year 2021, the months of February, June, and December experienced precipitation levels equivalent to 40-70 percent of the multiple-year average. Furthermore, Figure 8 shows that January and May have recorded the highest precipitation levels, whereas June has observed the lowest levels of precipitation during this period.

Amidst the climatic changes, this region faces site-specific hazards. One of the prominent risks is fire, particularly during the spring dry season. The combination of reduced precipitation and an accumulation of

dry fuel, such as grass, significantly elevates the likelihood of fires occurring. These fires can pose serious threats to both the environment and communities, emphasizing the need for proactive measures to prevent and manage such incidents.

Hence, the changing precipitation patterns and associated hazards, like fires, underscore the critical importance of understanding and adapting to climate shifts. The data presented in Figure 7 and the accompanying analysis shed light on the region's vulnerability to these changes and call for strategic measures to ensure its resilience in the face of evolving climatic conditions.

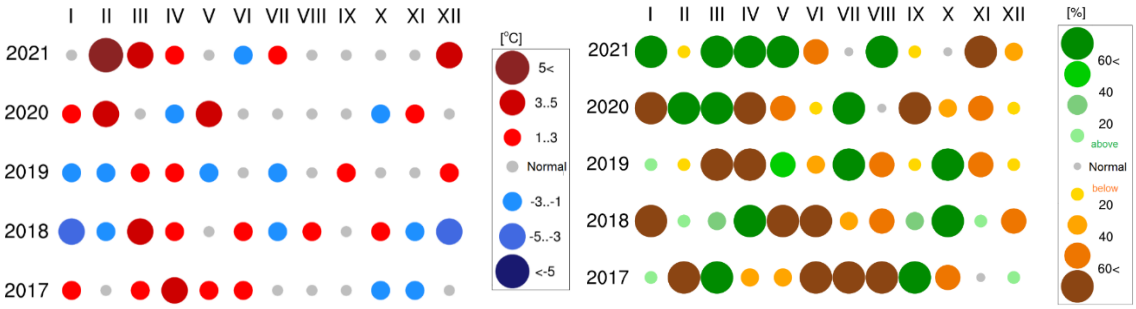


FIGURE 7. Illustrates the dynamics of air temperature and precipitation in Desert steppe region[25]

1.4.3 Climate Change Impact on Desert Steppe

The Desert Steppe region is one of the regions having the highest management pressure in Mongolia in terms of livestock number and mining activities. Being a non-equilibrium system, the Desert steppe region has a high potential for natural recovery in favorable conditions. This region faces a range of pressing issues, such an increased frequency of droughts and Dzuds. Additionally, this region has experienced an extreme yellow dust storm in recent years including the spring of 2021 that enveloped Dundgobi. Regrettably, this storm resulted in injuries and fatalities among herders, including children, and caused the displacement of numerous families from their homes. Comparing the recent five years (2017-2021) to the baseline multiple-year average (1991-2020), a notable shift in air temperature becomes apparent. Specifically, the months of February to April and December have experienced warming trends, with temperature increases ranging from 2.4°C to 5.2°C. This warming phenomenon has important implications for the region's ecosystems, including its flora and fauna.

The increased frequency of droughts and Dzuds which always follow the droughts cause the movement of herders through soum and provinces in longer distance for months and years. Because of the long-lasting movement children stay at home, mostly in the dormitory, or follow their parents and continue their studies in a new school with new friends. None of these 2 options is easy.

[25] MET

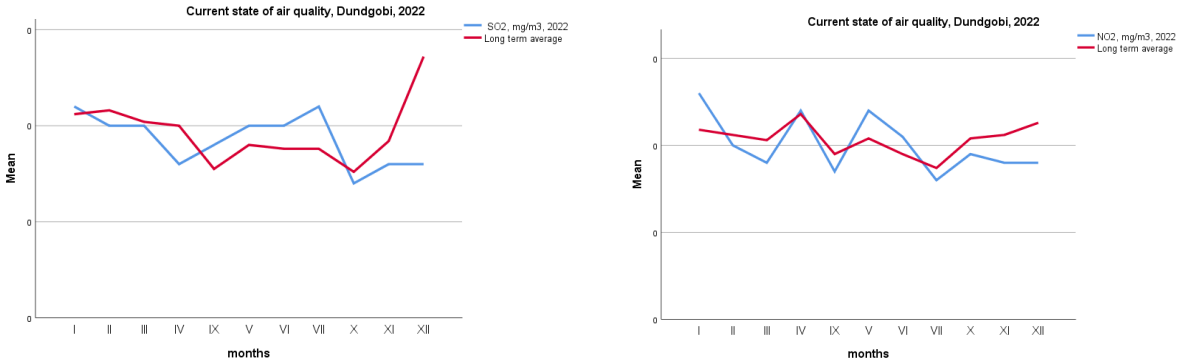


FIGURE 8. Illustration of the variations in the main pollutants' concentrations throughout the year in Desert steppe region**.**

The data obtained from air quality monitoring sheds light on the levels of sulfur dioxide (SO_2) and nitrogen dioxide (NO_2) present in the air. The concentrations of these pollutants exhibit distinct patterns over the months.

For sulfur dioxide (SO_2), the measurements reveal that the levels are relatively lower, ranging between 0.007 and 0.008 mg/m^3, during the months from September to December. However, a noticeable increase in SO_2 levels was observed in January, reaching a range of 0.01 to 0.02 mg/m^3. This rise in concentration during January is primarily attributed to the intensified use of coal for heating purposes, which is a common practice in response to colder weather conditions. The combustion of coal releases sulfur dioxide into the atmosphere, contributing to the higher pollutant levels during this period.

On the other hand, nitrogen dioxide (NO_2) exhibits a different pattern. The concentrations of NO_2 are consistently lower throughout the year, ranging from 0.016 to 0.017 mg/m^3. This relatively stable trend is influenced by the smaller population size in Dundgobi, which in turn results in fewer emissions from vehicles and other sources that contribute to nitrogen dioxide levels. However, there is a slight increase in NO_2 concentration to 0.029 mg/m^3, which is still relatively low, indicating that the impact of population-related emissions remains modest in this region.

In summary, the air quality monitoring data for desert steppe, Mandalgobi for instance highlights the seasonal fluctuations in sulfur dioxide and nitrogen dioxide levels. These fluctuations are influenced by factors such as coal use for heating and the local population size, emphasizing the need for targeted strategies to manage and mitigate air pollution in the area.

1.4.5 Climate Change Impact in Gobi Desert

Temperature: The Gobi desert, with its vast expanse, witnesses extreme temperature swings. Winters can be brutally cold, reaching - 40°C, while summer temperatures can surge to 40°C.
Precipitation: As expected, the Gobi has the lowest precipitation in Mongolia, with yearly averages around 50 mm. Interestingly, when rainfall does occur, the terrain's inability to absorb water quickly can lead to flash floods.
Vegetation: While vegetation is sparse, any presence or shifts in flora types can be indicators of subtle climate changes.

Gobi Desert, like the other provinces under study, presents distinct shifts in air temperature and precipitation patterns that provide valuable insights into the changing climate dynamics of the region.

Analysis of the available data reveals compelling trends in Gobi Desert air temperature. Specifically, the winter and spring seasons have experienced a notable increase in average temperatures, ranging from 2.9°C to 5.6°C, when compared to multiple years of historical data. Conversely, months such as July, August, and October have displayed a cooling trend, with a decrease of 1.6°C (Figure 11).

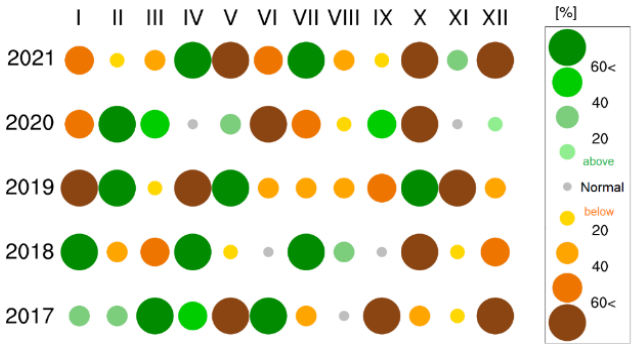


FIGURE 9. The dynamics of precipitation during the 2017-2021 years

The dynamics of precipitation during recent years (2017-2021) are captured in Figure 11, offering a visual representation of the changes in comparison to the baseline multiple-year average (1991-2020). Notably, the comparative study demonstrates a reduction in precipitation levels during certain months, specifically January, March, May, June, and October, ranging from 30% to 78% when compared to the historical average. This significant decline in precipitation has implications for various sectors dependent on water availability and highlights the broader impact of changing climate patterns.

It is interesting to observe that the air temperature trends share similarities among some of the regions under study. Regions like Forest Steppe, Steppe, and Desert Steppe exhibit a consistent pattern, with an increase in air temperature during winter and spring by 3-5 degrees Celsius or even more. In contrast, the Gobi Desert portrays relatively stable air temperatures over the studied years.

Similarly, a pattern emerges in terms of precipitation changes. all regions collectively experience a significant reduction in precipitation levels, with the steppe in Eastern Mongolia being the exception where an increase in precipitation was observed.

In summary, the data from the Gobi Desert adds to the collective understanding of climate change impacts across the regions under study. The changes in air temperature and precipitation have far-reaching implications for the region's environment, economy, and communities. This information underscores the urgency of climate adaptation measures and serves as a foundation for informed decision-making to address the challenges posed by a changing climate.

Natural Hazards and Disasters

Natural hazards in Mongolia are primarily influenced by the country's continental climate, its geographical location, and human activities. These hazards pose significant challenges to the predominantly pastoral-nomadic way of life in Mongolia, and there's a growing emphasis on preparedness and mitigation strategies to address these challenges[26].

[26] ReliefWeb, 2022, Disaster Management Reference Handbook- Mongolia

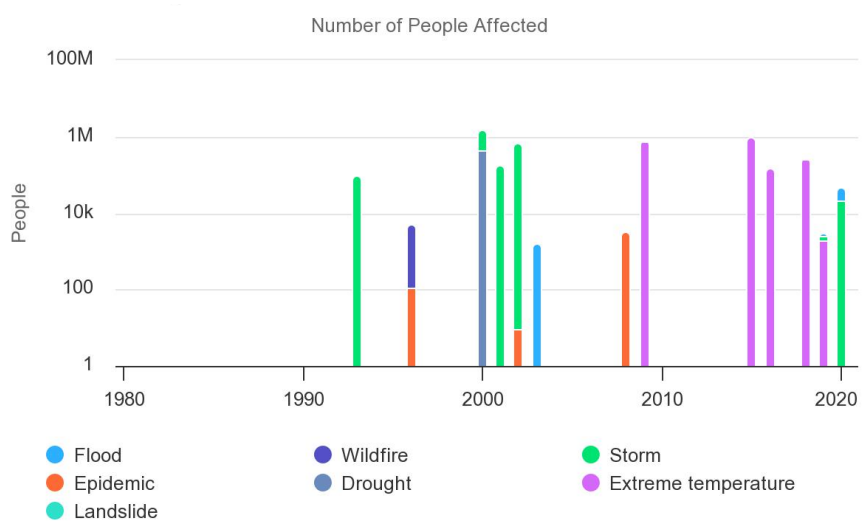


FIGURE 10. key natural hazard statistics for 1980-2020

The figure titled "Key Natural Hazard Statistics for 1980-2020"[27] provides a comprehensive representation of the number of people affected by various natural hazards over four decades. The vertical axis denotes the number of people impacted, presented in a logarithmic scale ranging from a single individual up to 100 million. The horizontal axis maps out the timeline, spanning from 1980 to 2020 in decade intervals[28].

The 1990s saw a considerable rise in the number of people affected by epidemics, making it the most dominant hazard of that decade. Alongside this, significant incidents related to floods and droughts were also observed. Transitioning into the 2000s, the impact of epidemics decreased, and droughts ascended as the primary hazard affecting the largest number of individuals. This era also registered substantial effects from storms and extreme temperatures.

However, by the 2010s, the pattern shifted again. Extreme temperatures surged ahead, marking themselves as the leading hazard in terms of affected populace. Storms maintained their impact, showing consistency in their influence. By the singular year 2020, extreme temperatures persisted in their dominance, accompanied by a notable influence from floods[29].

In essence, this figure underscores the evolving nature of hazards and their impact on populations over the span of forty years. Different hazards have risen and waned in prominence, reflecting the changing challenges faced by communities across the decades.

Yellow dust Storms

Yellow dust storms, also often referred to as sandstorms when involving larger particles, are a significant natural hazard in Mongolia, particularly in the southern parts of the country which include the Gobi Desert. These storms arise from the suspension of sand and dust particles into the atmosphere, often due to strong winds in areas with loose, dry, barren soil[30].

[27] Worldbank 2021,

[28] ReliefWeb, 2022, Disaster Management Reference Handbook- Mongolia

[29] IPCC.Chapter 11: Weather and Climate Extreme Events in a Changing Climate

[30] NIH, 2023, Assessing the impact of sand and dust storm on agriculture: Empirical evidence from Mongolia

Gobi Desert experienced peaks in stormy days primarily in the early parts of the year. The consistency of these stormy peaks, especially in April across multiple years, might be suggestive of changing precipitation patterns, a known effect of climate change. The surge in March 2021, followed by another peak in April 2022, could indicate a shift in seasonal transitions, possibly due to altered weather patterns associated with global warming[31].

The eastern steppe, one of the most vulnerable region for the dust, covered by extreme dusts increased frequency. Such erratic patterns have been frequently attributed to the changing climate, with increased evaporation rates leading to sudden and intense storms.

Some provinces in Forest steppe displayed a pronounced peak in storm days in March 2018, with a subsequent peak in April 2019. The fluctuating patterns, especially the brief rise in February 2021 amidst general low occurrences, might be reflective of the broader irregularities in weather patterns, a hallmark of climate change.

Lastly, Ulaangom, that represents the Desert steppe consistently registered stormy activity in May, but by 2022, this shifted to June. This delay in the onset of the stormy season could be a manifestation of shifting climatic zones, a phenomenon that has been observed in various parts of the world due to global temperature changes.

Overall, the observed storm patterns across these Mongolian regions, when viewed through the lens of climate change, underscore the altered and often intensified weather events. These changes, whether they're in the form of increased storm occurrences, shifting seasonal patterns, or heightened unpredictability, echo the global narrative of the profound and complex impacts of climate change on local weather systems.

Drought

- Mongolia's continental climate is marked by cold winters and hot summers. Rainfall is generally concentrated in the summer months, but its amount and distribution can be erratic. When the summer rains fail or are significantly reduced, it can result in drought conditions.
- The southern parts of Mongolia, which include the Gobi Desert, are especially prone to drought due to naturally low annual precipitation.

Droughts in general assessed by the drought severity index that has a following score levels:
1: Drought
2: Dry
3: Normal

According to the drought assessment (Table 6) Forest steppe and Steppe regions have a mainly normal condition with score 3 that is relatively stable.

TABLE 8. Drought Incidence in Different Regions (2014-2023)[32]

Tapget regions	Province and Soum names	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Steppe	Dornod Herlen	3	2	2	3	3	3	3	3	3	3
Desert steppe	Dundgobi Saintsagaan	2	2	2	2	2	2	2	2	2	2

[31] National Statistical database
[32] National Agency for Meteorology and Environmental Monitoring, Mongolia

Forest steppe	Khuvsgul Murun	3	2	3	2	3	3	3	3	3	3
Gobi Desert	Umnugobi Dalanzadgad	3	2	3	3	3	2	2	3	2	2
Desert steppe	Uvs Ulaangom	2	1	3	2	3	3	2	2	1	2

Based on the provided data (Table 8), we can observe the incidence of drought over a decade, from 2014 to 2023, across different regions of Mongolia. Each region is assigned a drought severity score on a scale, likely from 1 to 3, with 1 indicating less severe and 3 indicating more severe drought conditions.

In the Steppe region, specifically Herlen soum of Dornod province, the severity appears to be consistently high from 2015 onwards, maintaining a score of 3. This suggests a stable trend of severe drought conditions over a prolonged period.

The Desert Steppe region, with Saintsagaan soum of Dundgobi province as the reference point, shows a constant score of 2 across all the years. This indicates a moderate but unchanging drought severity, suggesting that the region experiences a persistent level of drought that has not fluctuated in intensity.

The Forest Steppe, represented by Murun soum of Khuvsgul province, displays a fluctuating pattern, alternating between scores of 2 and 3. This indicates variable drought severity, with certain years experiencing more intense drought conditions than others.

In the Gobi Desert, namely Dalanzadgad soum of Umnugobi province, there is a similar fluctuating pattern, although in recent years there seems to be a slight decrease in severity, with scores changing from 3 to 2. This might suggest an improvement in conditions or possibly a variation in the drought cycle.

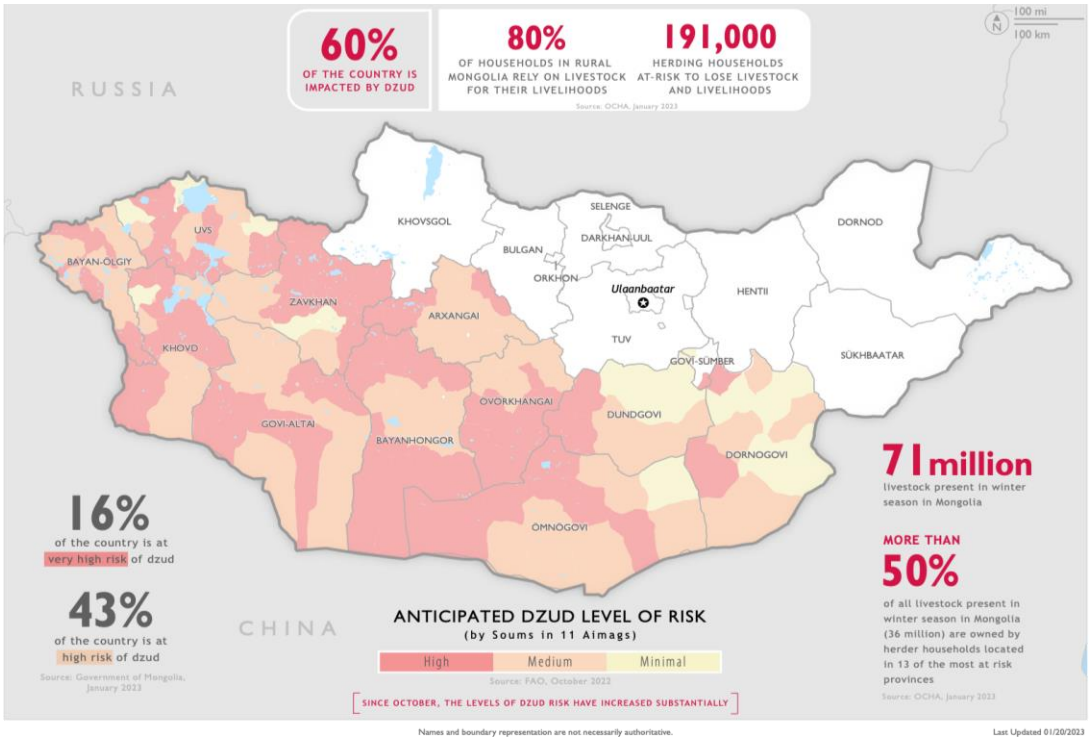
The Western part of the Desert Steppe, Ulaangom soum of Uvs province, presents an interesting pattern with scores oscillating between 1 and 3. The years 2015 and 2022 show a less severe drought score of 1, while other years such as 2016 and 2018 exhibit a score of 3, indicating severe drought conditions. This fluctuation could be due to a range of factors including varying rainfall patterns or changes in regional climate conditions.

The data across these regions underscores the complex and diverse nature of drought incidence in Mongolia, reflecting both persistent and dynamic climate phenomena. Each region requires specific attention to mitigate the impacts of these drought conditions, tailored to the unique environmental and climatic challenges they face.

Dzud

This is perhaps the most unique hazard to Mongolia. A Dzud refers to a severe winter, particularly one that follows a dry summer. The harsh conditions can make it impossible for livestock to find or access food beneath the snow cover, leading to massive die-offs of animals, which is catastrophic for the nomadic herders who rely heavily on them for livelihood.

As of January 18, 2023, 60 percent of Mongolia's territory was affected by a Dzud, a natural phenomenon arising from summer drought followed by harsh winter weather conditions that can lead to large-scale livestock deaths. As of January, 191,000 herding households were at risk to the impacts of the Dzud, according to the UN. Herders, who account for 80 percent of all rural households, were at high risk of losing their livestock and livelihoods throughout early 2023 due to a prolonged lack of pasture and fodder resulting from drought in previous months and severe winter weather.



MAP 3. Incidents of Dzud in local areas in Mongolia (Source;USAID)

Figure 13 shows that 60% of the country experiences the direct repercussions of this climatic event, posing a looming threat to the livelihoods of countless herding households who rely heavily on their livestock. Delving deeper into the risk stratification, the map shows that 16% of the Mongolian terrain is categorized under 'very high risk' for Dzud, while a substantial 43% stands under the 'high risk' umbrella.

The geographical distribution of this risk is spread across various provinces, with Bayan-Ölgiy, Bulgan, Orkhon, Darkhan-Uul, DornoGobi, Uvs, Khovd, Selenge, Khovsgol, Dornod, Zakhan, Gobi-Altai, and Khentii being particularly susceptible. The vulnerability transcends beyond mere geographic markers, as around half of the livestock present during Mongolia's winter season, amounting to approximately 36 million animals, belong to herders residing in the 13 most endangered provinces.

TABLE 9. Incidents of Dzud in selected research areas

Province	Index	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Forest steppe	231										

Steppe	259				1						
Desert steppe	341				1		1			1	1
Gobi desert	373				1						1

Source: National agency for meteorology and environmental monitoring, Mongolia

As shown in Map 3, all of the areas covered by the research are declared as high-risk areas for mud. The data provided offers an insightful snapshot of the occurrences of Dzud across various Mongolian regions. Notably, areas like Desert Steppe and Gobi Desert have experienced multiple Dzud events in recent years. This increased frequency could be indicative of the underlying environmental changes these regions are undergoing.

This escalation in Dzud events can be tied back to the broader narrative of global climate change. The planet's shifting climate leads to unpredictable precipitation patterns. While certain regions may witness increased rainfall, others grapple with extended droughts. Such inconsistencies hinder the recuperation of pasture lands post-summer grazing, rendering them barren and ill-equipped to sustain livestock during winter. Moreover, the concept of global warming is a misnomer in the Mongolian context. Instead of milder winters, Mongolia is subjected to temperature extremes. The colder-than-average winters, when coupled with a preceding dry summer, intensify the Dzud conditions.

Furthermore, Mongolia's retreating glaciers and melting permafrost, consequences of global warming, impact river flows and groundwater reserves. This, in turn, detrimentally affects the quality and quantity of pasture lands. On a socio-economic front, these climatic shifts and the ensuing increase in Dzud events threaten Mongolia's pastoral-dependent economy. The large-scale loss of livestock translates to dwindling income, food scarcity, and for many Mongolians, a disintegration of their traditional way of life. This could catalyze urban migration, placing undue stress on urban infrastructures.

1.5 Readiness Grant for Climate Action

In November 2019, Mongolia increased its climate change mitigation goal from 14% to 22.7% reduction in greenhouse gas emissions by 2030. The energy sector contributes the most (66.7%) to this reduction, followed by agriculture (31.3%). Adaptation priorities cover areas like animal husbandry, farming, water, forests, biodiversity, disaster prevention, public health, and social safeguards. Despite commitments, the NDC has been challenging, and Mongolia lacks a long-term strategy aligned with the Paris Agreement.The proposed Readiness grant has both direct and indirect beneficiaries. Direct beneficiaries include institutions like MET, MOE, MOH, CCRCC, and sub-national governments. Indirect beneficiaries encompass government agencies, research institutes, private sectors, sub-national governments, project proponents, local CSOs, and vulnerable groups. The grant aims to enhance knowledge, awareness, and collaboration, fostering effective climate action.

- NDC Implementation Plan Development: Development partners, such as GIZ, UNDP, and Asia Foundation, have provided technical assistance to create an NDC (Nationally Determined Contributions) implementation plan. This plan received approval from the National Climate Committee (NCC).

- Energy Sector Emissions and Readiness Grant: Due to a significant portion of emissions originating from the energy sector and concerns about meeting NDC targets, a readiness grant aims to tackle constraints faced by the Mongolian government (GOM). The grant's goal is to identify measures to reduce risks in scaled-up investments in renewable energy (RE).

- MRV Framework by Gold Standard: The Gold Standard supported the development of a Measurement, Reporting, and Verification (MRV) framework for Mongolia, focusing on the design of the system. Ongoing support is needed to implement the framework's recommendations.

- Institutional Arrangements and Climate Action: Strengthening institutional arrangements for climate action implementation and Paris Agreement obligations is a recurring theme. The readiness grant intends to enhance institutional arrangements for climate change, aligning them with institutions related to Sustainable Development Goals (SDGs).

- Capacity-Building for Transparency: The Capacity-building Initiative for Transparency (CBIT) project aims to enhance Mongolia's capacity for greenhouse gas (GHG) inventory and emissions monitoring.

- LEAP Model for GHG Emissions: A UNEP-SEI – GGGI project trained sectoral and sub-national stakeholders to use the Long-range Energy Alternatives Planning system (LEAP) for GHG emissions assessment. The readiness grant will further support capacity building for using the LEAP model and help provincial stakeholders develop GHG scenarios.

- GCF Readiness Projects: Xacbank is implementing a Global Climate Fund (GCF) readiness project with the goal of aligning the GCF Country Programme with the revised NDC, enhancing climate finance coordination, and raising awareness of GCF safeguard policies.

- NAP Readiness Grant: A GCF-funded National Adaptation Plan (NAP) readiness grant focuses on various aspects, including establishing a climate information system, capacity building for adaptation planning, development of GCF concept notes, and integrating climate change into development planning regulations. The NAP's outcomes will be incorporated into the updated GCF Country Programme.

- Public Health and Climate Change: The readiness grant provides additional support to the public health sector. This includes strengthening capacity to monitor climate-related public health issues, understanding climate change impacts on food security, nutrition, and health, and developing a preparedness and response plan for climate-related hazards.

1.6 Initiatives

1. Local authority Local Governance Entities (Province, District, Township Governors, People's Representative Assembly, etc.)

As an integral component of the governor's action plan, the following overarching initiatives in the realm of sustainable development are slated for execution, with a particular focus on environmentally conscious strategies. At this juncture, there was no precise terminology for climate change.

- Facilitate the A Billion Trees national campaign at the local level.
- Enact measures combating deforestation, promoting reforestation, and preventing desertification in the regional context.
- Augment water access points, construct floating ponds, and safeguard springs through protective enclosures.
- Expand the array of eco-friendly facilities.
- Curtail environmental pollution and enhance waste management practices.

2. Environmental Sector (Ministry of Environment and Tourism, National Development Council, National Climate Change Committee)

In Mongolia, governmental bodies responsible for climate-related affairs are committed to:

- Assure adherence to international agreements, treaties, and conventions related to climate change.
- Strategize, coordinate, and oversee the realization of Article 5.1.12 within the Government Action Programme.
- Furnish expert advice and methodological support to stakeholders.
- Formulate and execute projects and programs in pertinent domains.
- Supervise the implementation of the A Billion Trees national campaign, actively combat desertification, and mitigate land degradation.

3. Eco-clubs, initiated at various schools, have seen children spearhead efforts to combat local environmental challenges, exemplified by tree plantation initiatives countering desertification trends1. There's a concerted move towards green infrastructure as well[33].

[33] UNICEF, 2023, Climate change and impacts

CHAPTER 2. CLIMATE CHANGE EFFECT ON WATER, SANITATION, AND HYGIENE

2.1 Main policies on water, sanitation and hygiene

Climate change is jeopardizing children's access to WASH services, essential for their health and the exercise of their rights. A review of legal documents, including eight government policies, international agreements, and laws, has identified a gap in regulations that specifically ensure access to these critical services and address climate adaptation and mitigation.

The absence of detailed legal provisions to combat the adverse effects of climate change on WASH services highlights the need for improved legislation. It's crucial to foster better coordination and collaboration within the WASH sector to protect children's rights and build systems resilient to climate challenges. This effort is vital for creating an environment where children can thrive in the face of climate change.

2.2 Initiatives on water, sanitation and hygiene

The alignment of the United Nations Sustainable Development Goals 2030 and Mongolia's Vision 2050 long-term development policy is geared towards achieving pivotal benchmarks in WASH. These objectives target a 90 percent population coverage with adequate drinking water sources and a 75 percent coverage with appropriate sanitation facilities by the year 2030. In tandem, Mongolia's Government Action Plan for 2020-2024 strives to furnish safely managed drinking water through filters to general education school students. Within this expansive framework, an assemblage of 17 projects and programs focused on WASH are actively underway.

Remarkably, nearly 50 percent of these projects are devoted to addressing sanitation and hygiene concerns in schools and kindergartens. A profound understanding underscores that augmenting water, sanitation, and hygiene conditions in these educational settings holds the potential to notably enhance children's health and learning outcomes. About 30 percent of the projects are considering on improvement of water, sanitation, and hygiene conditions at the Soum Health Center it will have a positive impact on the health of medical staff, patients, and young children who visit the hospital.

It is imperative to prioritize the development of water supply and sanitation systems that are resilient to the impacts of climate change, while concurrently adopting environmentally friendly technologies. A notable exemplification of such an approach is evident in the outcomes of the "Local Community-Based, Climate Change-Resistant Water Supply, Sanitation, and Hygiene Services" project carried out collaboratively by the United Nations Children's Fund and KOIKA in the provinces of Bayankhongor, Gobi-Altai, and Zavkhan from 2019 to 2022. Given its success, there is a compelling argument for extending the implementation of this project to other provinces within Mongolia.

Moreover, addressing the issue of inadequate sanitation facilities in schools, particularly considering the impact on girls' education during menstrual periods, is crucial. The introduction and dissemination of the commendable practice initiated by the UNICEF—establishing "GIRL-FRIENDLY CLEAN ROOMS" in school dormitories—should be considered and replicated in various provinces and districts. This approach not only addresses immediate sanitary concerns but also contributes to fostering a conducive environment for girls' education and well-being.

2.3 Institutional arrangements on water, sanitation and hygiene

The WASH system in Mongolia, as detailed in Figure 7, collaborates with various entities to ensure its efficient operation. These include Public Utilities and the Engineering Infrastructure Policy Implementation

and Coordination Department affiliated with the Ministry of Construction and Urban Development. The system also works in tandem with the Public Utilities Division of the Construction Development Center and the Water Services Regulatory Commission (WSRC) of Mongolia.

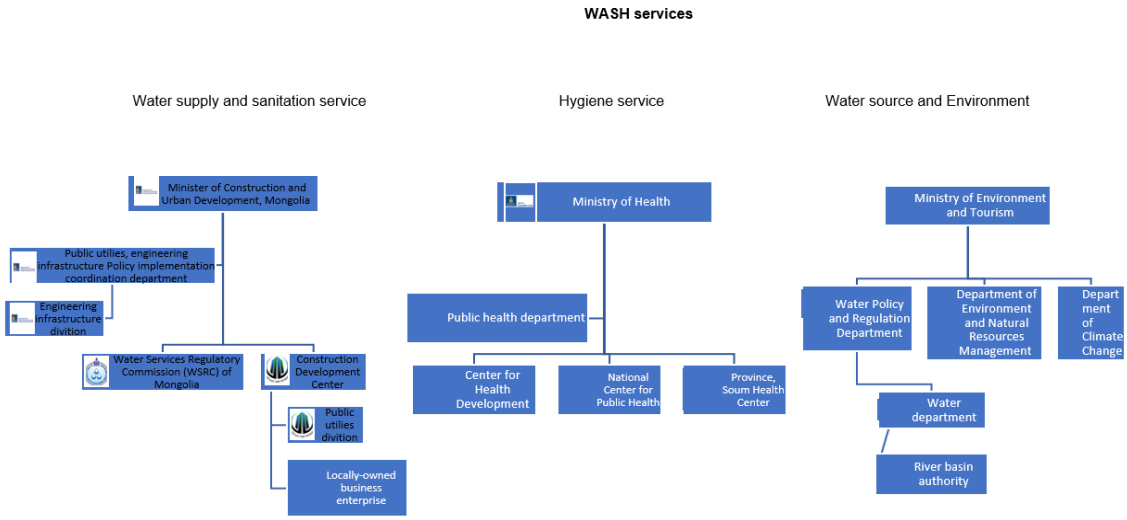


FIGURE 11. Institutional structure of the WASH sector in Mongolia

2.4 Climate change impact on water, sanitation and hygiene

In Mongolia's expansive rural landscape, home to over 60% of the nation's schools, the battle to secure consistent Water, Sanitation, and Hygiene (WASH) services is intensified by the scarcity of water sources. Compounding this challenge is the country's susceptibility to climate change, which threatens equitable and sustainable access to these essential services for children.

A comprehensive review was undertaken in collaboration with the UNICEF and Mongolian academic and governmental bodies. This review assessed the quality of drinking water in 56 deep wells across 20 provinces, with a particular focus on five provinces. Shockingly, only about 9% (5 out of 56) of the water points met the MNS0900:2018 standards for drinking water, exposing children to unsafe water and potential health risks like intestinal infections.

An alarming 74% of schools were reported to have basic access to clean drinking water, yet nearly a quarter (23%) lack basic handwashing facilities with soap and water. Furthermore, a 2022 survey conducted by the Ministry of Health and other agencies across 358 health centers found that only 40% had portable water supplies, 59% were not connected to the sewage system, and a staggering 90% depended on outdoor pit latrines.

These findings are concerning against the backdrop of climate change, which has increased the frequency and severity of natural disasters such as droughts and floods. Such events strain water and sanitation systems and can exacerbate environmental pollution, posing a grave risk to public health. Enhancing the resilience

of these systems is therefore not just a matter of infrastructure but of public safety and health. The UN's 2018 report[34] suggests that improvements in WASH services could save around 360,000 infants annually.

Additionally, studies from Sudan and Peru underscore the critical link between water availability and children's health. In Sudan, children with sufficient water showed 17% higher growth rates, while in Peru, a temperature rise of 10°C was associated with an 8% increase in diarrhea cases. In Mongolia, 34% of surveyed children admitted to drinking unboiled raw water, and 39% associated difficulties in accessing WASH services with climate-related natural disasters, illuminating the direct impact of climate change on the well-being of children and the urgency for adaptive measures in Mongolia's WASH policies.

2.3.1 Access to water, sanitation and hygiene across diverse regions in Mongolia

The conditions of water, sanitation, and hygiene in schools and kindergartens play a crucial role in positively impacting children's health and the overall quality of their learning experience. To comprehensively understand the implications of climate change on children, the collected news and data are systematically categorized by region. This classification reveals both direct correlations, such as the influence of climate change trends, and indirect correlations, including the exacerbation of children's diseases due to disruptions in access to services caused by climate change.

The study provides confirmation that climate change indeed has a tangible impact on children's access to water, sanitation, and hygiene services. In the survey, 2,845 children were interviewed about their experiences, and noteworthy findings emerged. Approximately 34% of the children reported consuming unboiled raw water, highlighting a potential risk to their health. Moreover, 39% (1,108 children) associated challenges in accessing water facilities, sanitation, and hygiene services with climate change-related natural disasters.

The findings also include insights into students' experiences with thirst during the school day across various regions, shedding light on the importance of ensuring adequate water availability in educational institutions. A consistent trend is observed, with the majority of students across all regions reporting feeling thirsty during hot weather, ranging from 57% to a significant 96%. Dornod stands out with an overwhelming 96% of students indicating thirst during hot days, signaling a pressing need for additional filters and necessary disinfection equipment installation or strategies in that particular region. While the 'Yes' response remains dominant in other regions, the 'Sometimes' category garners notable responses in areas like Khuvsgul (39%) and Nalaikh (29%), suggesting intermittent experiences of thirst, possibly influenced by varying heat intensities or the school's infrastructure. The 'No' response remains consistently low across all regions, reinforcing the conclusion that hot weather does have a pronounced effect on students' hydration needs. This underscores the critical importance of ensuring sufficient water availability in schools, especially during hotter days, to keep students hydrated and comfortable.

[34] Please add the references here

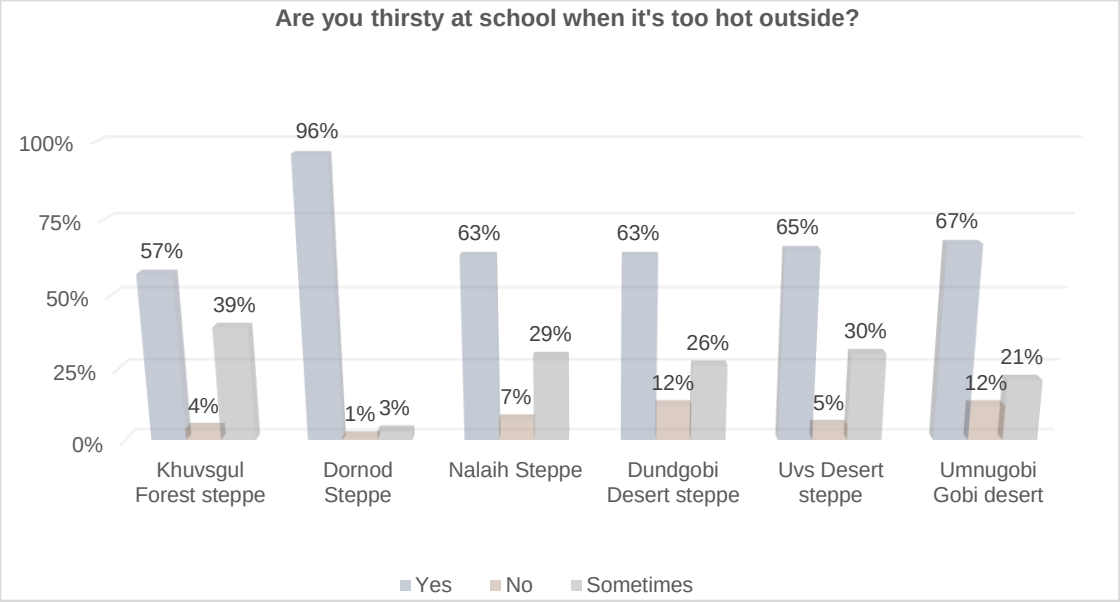


FIGURE 12. Student Thirst Levels at School During Hot Weather by Region

TABLE 10. Drinking water situation in the target areas

Geographical location	Sources of drinking water were flooded by torrential rains and flash floods	Deep wells freeze in winter	Deep wells are covered by snow and cannot get water	Deep wells are covered by tornadoes and sandstorms	Are children's toilets at risk of flooding, roof droplets and drainage due to flooding	Is there a risk that a child's toilet will collapse in storms, snowstorms and strong winds	Does clean toilet water and dirty water freeze inside the winter season
Forest steppe	1	4	1		3	3	9
Steppe	9	6	8	4	15	14	16
Desert steppe		2		1	10	11	17
Gobi desert		4	1		7	11	18

The chart titled "Do deep wells freeze in winter?" depicts responses from various institutions across five regions. Overall, there seems to be a mixed trend regarding whether deep wells freeze during winter, with noticeable differences based on both region and institution type.

In regions like Dornod and Dundgobi, schools predominantly report that their wells don't freeze, while school dormitories in these areas indicate the opposite, suggesting freezing is more prevalent. The

contrasting responses within the same regions could be attributed to differences in well construction, maintenance, or location-specific factors.

Uvs stands out as a region where schools majorly face freezing challenges, while kindergartens are relatively less affected. Khuvsgul displays a general trend of non-freezing wells, except for school dormitories which lean slightly towards the freezing side. Umnugobi, on the other hand, presents a balanced view, with most institutions indicating limited freezing concerns except for school dormitories, which display an even split between freezing and non-freezing responses.

The varied responses between kindergartens, schools, school dormitories, and health centers within the same regions highlight the significance of localized factors and perhaps differences in usage patterns, infrastructure quality, and maintenance practices.

In conclusion, while some regions and institutions grapple with the challenge of freezing deep wells in winter, others seem better equipped to handle the cold. The discrepancies within regions underscore the need for region-specific interventions and best practices to ensure a consistent water supply during the colder months.

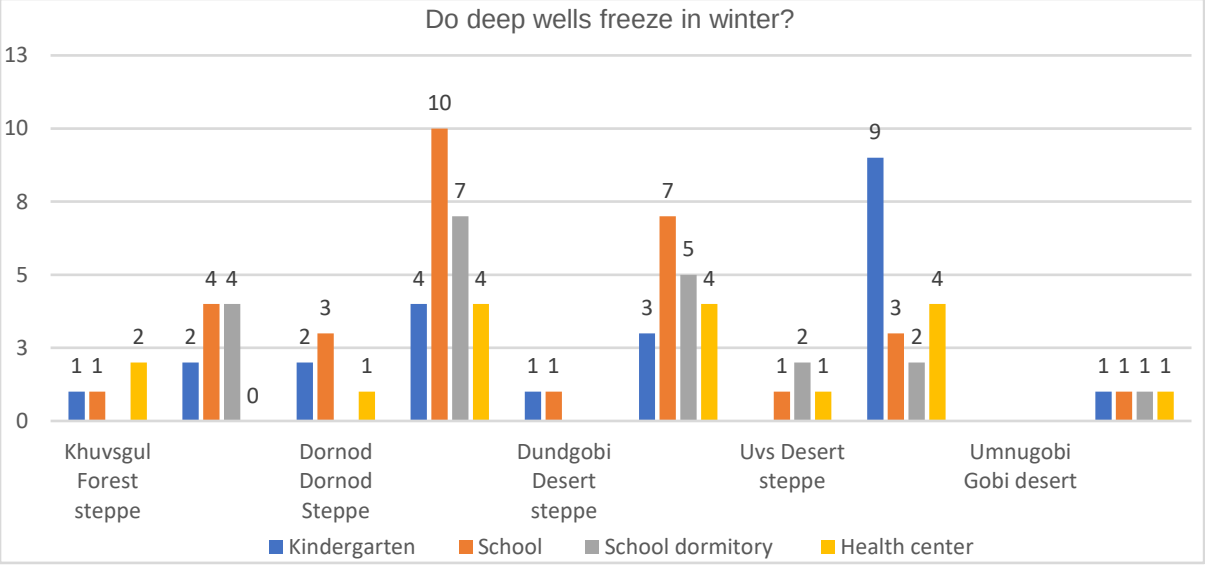


FIGURE 13. Do deep wells freeze in winter?

The chart (Fig. 14)examines water consumption patterns during periods of extreme heat across different institutions, namely kindergartens, schools, school dormitories, and health centers in various regions.

From a bird's-eye view, schools tend to report the most consistent increase in water consumption during hot weather across all regions, highlighting the likely intensified water needs of larger groups of students. Dornod and Uvs, for instance, show significant increases in water usage in schools during these periods.

Kindergartens and health centers display mixed responses, with occasional rises in water consumption in some regions like Dornod and Dundgobi but less so in others such as Khuvsgul and Umnugobi.

School dormitories, interestingly, showcase a more balanced distribution between consistent, occasional, and no increase in water consumption, pointing towards potentially varying infrastructural or management practices.

In essence, while extreme heat does influence water consumption patterns, schools seem to be the most affected institutions across the board, emphasizing the need for region-specific water management and conservation strategies during temperature spikes.

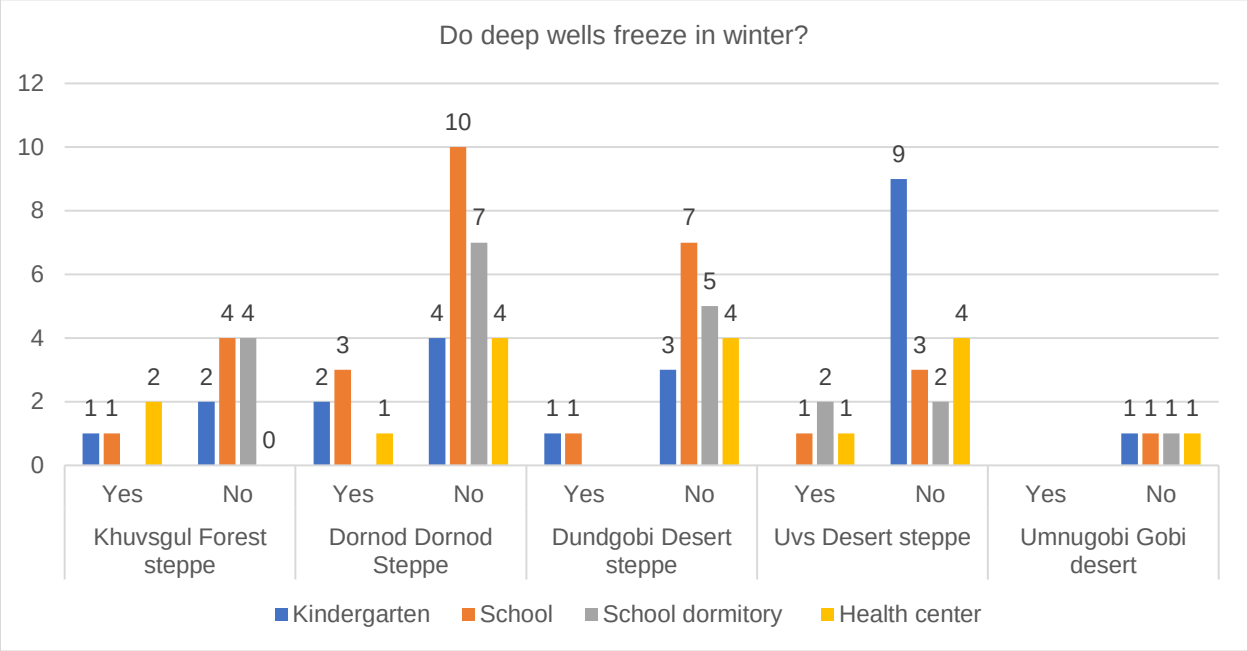


FIGURE 14. Does kindergarten, school water consumption increase during extreme heat? Impact of extreme heat on water consumption

Are children's toilets at risk of flooding, roof droplets and drainage due to flooding? The provided chart explores the vulnerabilities of children's toilets across different institutions, namely kindergartens, schools, school dormitories, and health centers, within the regions of Dornod and Umnugobi. It examines the potential risks of these facilities freezing, experiencing roof collapses, or sustaining damages due to flooding. From an overarching perspective, Dornod consistently exhibits higher levels of vulnerability across all institutions compared to Umnugobi. Kindergartens in Dornod appear to be the most at risk, closely followed by schools. The school dormitories and health centers in this region also display concerns, but not as pronounced as educational establishments. Contrastingly, Umnugobi presents a mixed picture. The health centers in this region seem to be more at risk compared to Dornod, whereas schools and kindergartens have relatively lower vulnerability levels. School dormitories in Umnugobi, however, exhibit a risk factor that aligns more closely with their Dornod counterparts. In summary, while both regions face challenges in ensuring the structural safety of children's toilets, Dornod's educational institutions, especially kindergartens and schools, emerge as primary areas of concern. It becomes evident that focused attention and resources might be necessary for these particular establishments in Dornod to mitigate potential hazards and ensure the welfare of the children.

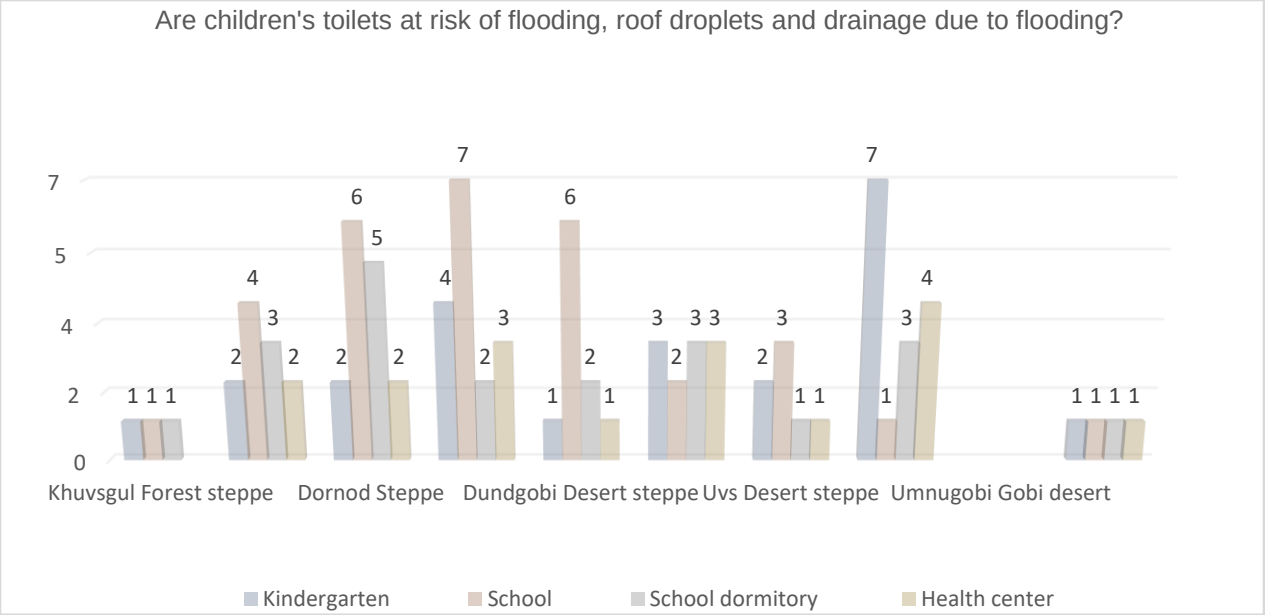


FIGURE 15. Are children's toilets at risk of flooding, roof droplets and drainage due to flooding?

Is there a risk that a child's toilet will collapse in storms, snowstorms and strong winds?

The chart in question presents data on the perceived risks associated with children's toilets in various institutions, such as kindergartens, schools, school dormitories, and health centers, across multiple regions including Dornod, Dundgobi, Uvs, Khuvsgul, and Umnugobi. The data evaluates concerns about the potential for these toilets to collapse during severe weather events like storms, snowstorms, and strong winds.

At a glance, the region of Dornod displays considerable apprehension, with schools manifesting the most significant concerns about toilet collapse, followed closely by kindergartens and school dormitories. In Dundgobi, the apprehensions are spread more evenly across the institutions, but kindergartens stand out as a primary area of concern. The Uvs region shows health centers as having the most significant perceived risk, with schools following suit. Khuvsgul seems to have a balanced view of risk across all institutions, whereas Umnugobi leans towards school dormitories as the principal area of concern, albeit the numbers are relatively low.

In a comprehensive analysis, while each region has its unique risk profile, the data suggests that schools, followed by kindergartens, often emerge as the institutions where the most significant concerns reside regarding toilet collapse during extreme weather. It is crucial for policymakers and regional administrators to consider these perceptions, whether rooted in factual data or not, when planning infrastructural upgrades or safety measures to ensure the well-being of the children.

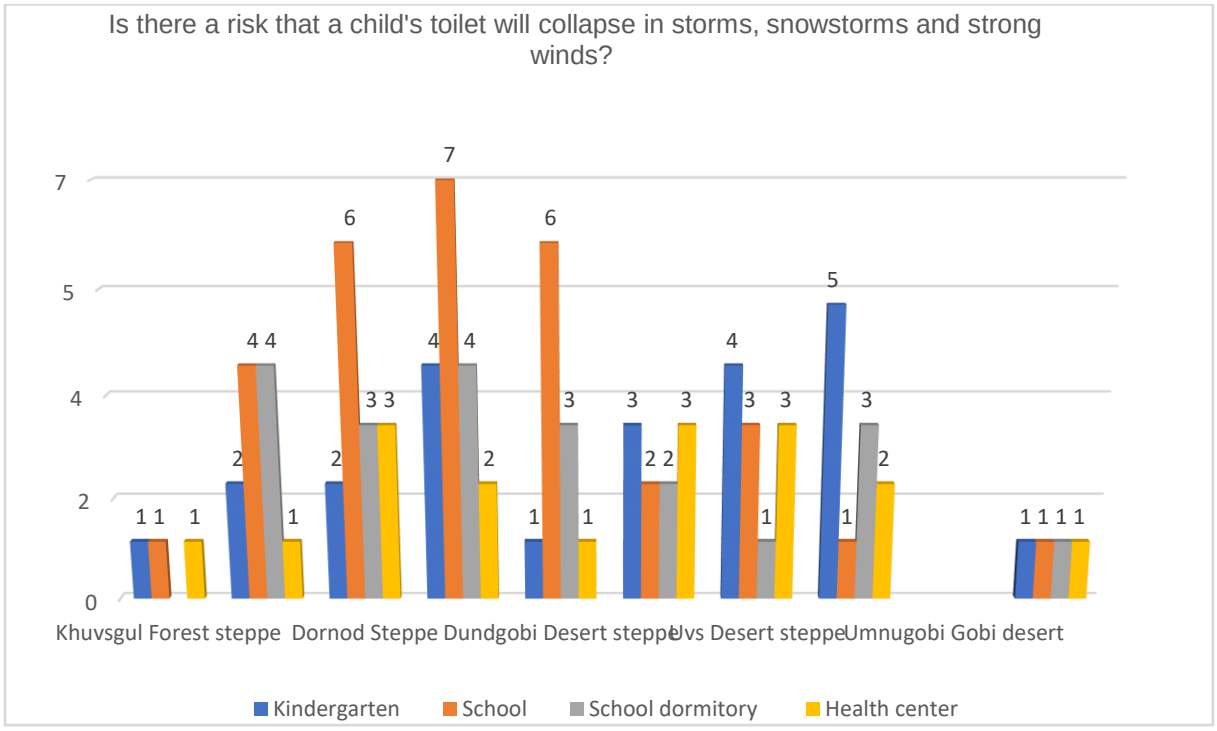


FIGURE 16. The risk that a child's toilet will collapse in storms, snowstorms and strong winds

Does clean toilet water and dirty water freeze inside the winter season? The chart illustrates concerns about the freezing of clean toilet water and dirty water within facilities, such as kindergartens, schools, school dormitories, and health centers, during the winter season across various regions: Dornod, Dundgobi, Uvs, Khuvsgul, and Umnugobi.

Based on the survey findings, the region of Uvs presents a strikingly high level of affirmation in kindergartens that clean and dirty water does freeze, whereas the other facilities in this region mostly suggest otherwise. Dornod displays a generalized concern across institutions, with schools showing the highest level of agreement. In Dundgobi, there's a substantial agreement that water freezes in schools, followed by kindergartens and school dormitories. The trend in Khuvsgul and Umnugobi is more evenly spread, but still, there are evident concerns in kindergartens and schools.

Overall, the data emphasizes a pervasive concern about water freezing in toilets, predominantly in kindergartens and schools across the regions. The most prominent observations are the unanimous agreement in Uvs's kindergartens and the general consensus in schools in Dornod and Dundgobi. Such issues not only hinder proper sanitation but can also pose health risks. Stakeholders and decision-makers should be alerted to these findings to implement measures ensuring adequate sanitation facilities during harsh winter months, prioritizing regions and institutions with the most pressing concerns.

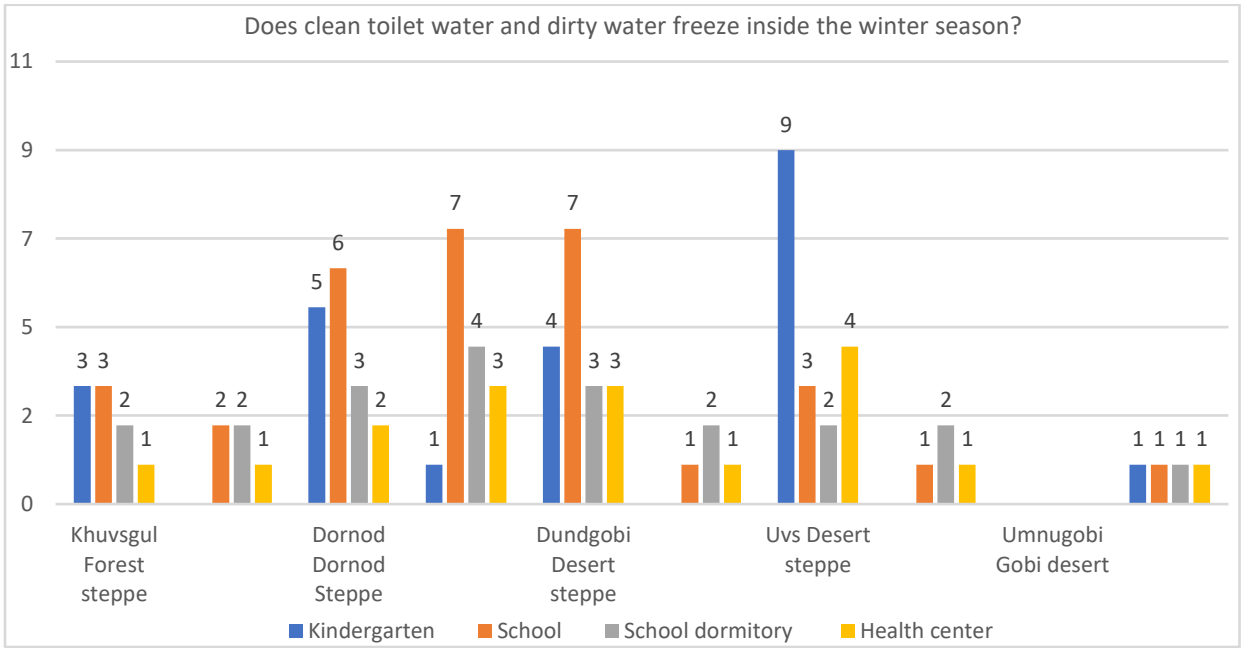


FIGURE 17. The clean toilet water and dirty water freeze inside the winter season

The chart (Fig. 18) showcases data concerning the presence of a climate change-centered water and sanitation safety plan across various institutions, including kindergartens, schools, school dormitories, and health centers in different regions: Dornod, Dundgobi, Uvs, Khuvsgul, and Umnugobi.

A quick overview reveals that the responses are quite varied across regions and institutions. In Dornod, schools seem to predominantly lack such a plan, while kindergartens and dormitories show a more balanced distribution between affirmatives and negatives. Dundgobi depicts a stark contrast where a significant majority of schools affirm the absence of a plan, while the kindergartens and dormitories share mixed responses. Uvs stands out with its kindergartens almost unanimously having a safety plan, contrasting sharply with the schools in the same region. Khuvsgul presents a more uniform distribution across all institutions, though schools marginally tilt towards not having a plan. Umnugobi exhibits a trend where the majority of institutions, especially schools and dormitories, lack such a plan.

To encapsulate, while there's evident variability across regions and institutions, a prevailing trend emerges: a considerable number of schools, irrespective of the region, do not have a climate change-oriented water and sanitation safety plan in place. This finding underscores a potential vulnerability, especially given the increasing challenges posed by climate change. It emphasizes the need for a more concerted effort to integrate climate considerations into sanitation and water safety planning, particularly in educational institutions, to ensure the well-being and safety of students and staff.

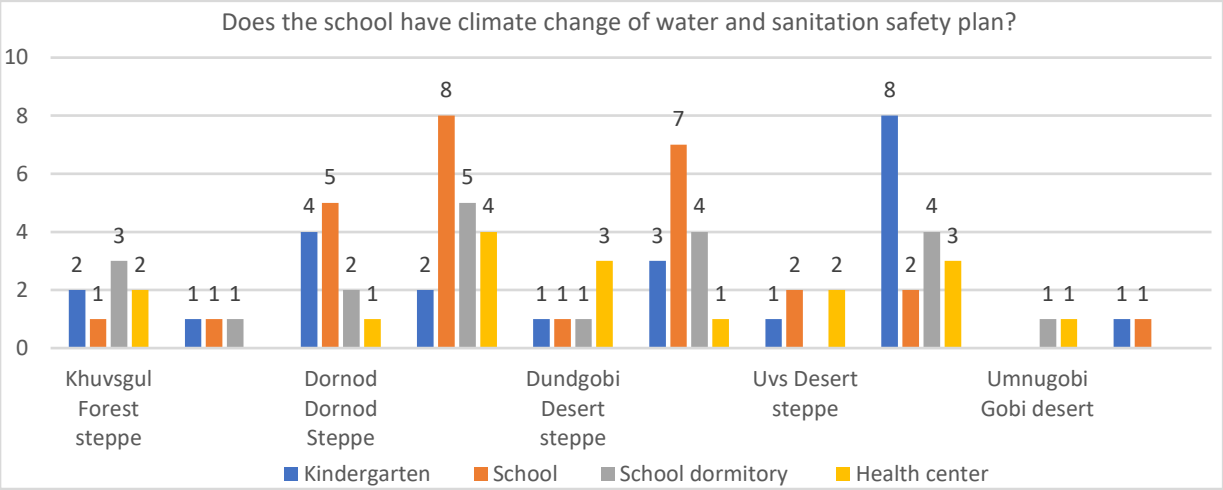


FIGURE 18. The school have climate change of water and sanitation safety plan

The survey reveals significant challenges in the sanitation infrastructure of the surveyed areas, with 26 percent of sub-districts lacking pit latrines entirely. Additionally, 31.6 percent of sub-districts have an average of 51 percent of pit latrines at risk of damage from heavy rain and flash floods, while a substantial majority, 63 percent of sub-districts, face the dual threat of heavy rain and flash floods. This heightened risk not only endangers the structural integrity of sanitation facilities but also poses a threat of soil and water pollution, increasing the potential for the spread of intestinal infectious diseases. Urgent interventions are necessary to address these vulnerabilities, emphasizing the establishment of secure and resilient sanitation infrastructure to mitigate risks associated with adverse weather conditions and minimize the broader health and environmental consequences.

2.3.2 Children's diseases due to climate change

The association between climate change and children's health remains notably underexplored. Section 3.9.2 of the Sustainable Development Goals specifically emphasizes the measurement of substandard water, sanitation, and hygiene conditions by assessing the incidence of infectious diseases within the intestinal population. An alarming statistic underscores the significance of this relationship, as 88% of diarrheal diseases are linked to unreliable water supply, sanitation, and hygiene conditions. Furthermore, the prevalence of dysentery varies across regions, with factors such as local features, topography, and weather conditions influencing its occurrence in humid, very cool, humid cool, and dry cool regions. Notably, viral hepatitis and dysentery in children aged 0-16 exhibit correlations with weather parameters such as air temperature, air pressure, wind speed, and precipitation. From the survey of 2845 children, it is evident that 25 percent were suffering from intestinal infections, 34 percent consumed unboiled raw water, and approximately 70 percent expressed thirst and difficulty accessing water at school due to climate change. These findings underscore the tangible impact of climate change on children's access to essential water, sanitation, and hygiene services, emphasizing the urgent need for further research and comprehensive interventions.

The number of reported disasters in Mongolia was 5123 in 2019, 3977 in 2020, 4053 in 2021, and 4299 in 2022. While the frequency of object fires had the highest occurrence of all disasters in 2022, the area of burned forests and grasslands occupied a larger area compared to previous years. There were 91 strong snow and yellow dust storms, 35 heavy rains and floods, and 39 earthquakes.[35]

[35] ENVIRONMENTAL PUBLIC HEALTH SURVEILLANCE 2022 REPORT Ulaanbaatar, Mongolia 2023

TABLE 11. Disasters and losses, 2019-2022[36]

Disasters and losses	2019	2020	2021	2022
Number of occurrences of disasters	5.123	3.977	4.053	4.299
Forest and steppe fires /number/	121	147	65	179
Burnt forests and steppe /million ha/	0.3	20.64	20.64	26.3
Object fire /number/	4.301	3.036	2.671	3.075
Heavy snow and yellow dust storm /number/	56	51	91	56
Danger of heavy rains and floods /number/	35		72	35
Earthquake /number/	39	56	295	39
Exterminated and destroyed livestock and animals /thousands of heads/			163.7	8.553
People who died due to disaster /number/	207	243	319	247
The amount of damage caused by the disaster /billion tugrics/	35.8	31.32	25.8	33.2

In the future, scientists and researchers have found that while the amount of precipitation is expected to remain relatively stable, there will be a slight increase in river flow. However, this will be offset by an increase in evaporation, causing a loss of water balance in the river basin and a trend toward drier conditions.

Among the 19 sub-districts included in the survey, findings indicate a concerning trend where water sources for herder households in 11 sub-districts have dried up, primarily attributed to drought and aridity. This impact is notably pronounced in geographical areas characterized by plains and steppes. The drying up of water sources poses a significant challenge for herder communities, particularly in these regions, underscoring the urgency of addressing water scarcity issues and implementing adaptive strategies to mitigate the adverse effects of climate-related challenges such as drought and dryness.

[36] National Statistics committee, 2022

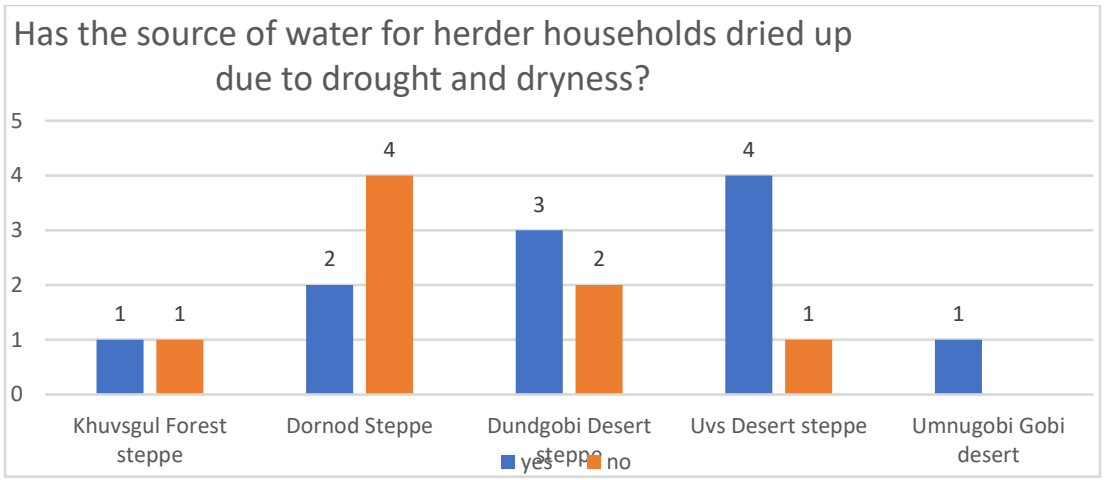


FIGURE 19. Has the source of water for herder households dried up due to drought and dryness?

Overview. Samples were taken from 74 points in Ulaanbaatar every year in May and October, and the level of soil pollution was determined according to MNS 3297:91 standard "Nature Protection. Soil. Assessment of safe indicators of urban soil hygiene and contamination". By the hygiene assessment comparing contamination level of soil bacteriological analysis in 72 points of the residential area of the Capital city in 2022, it is more polluted in the spring and autumn seasons.[37]

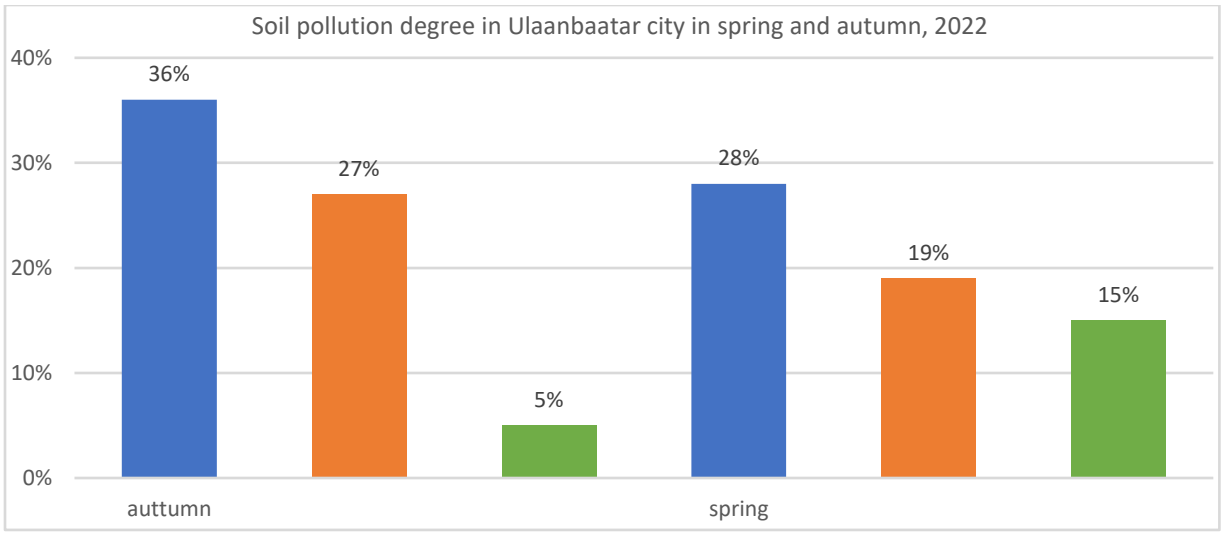


FIGURE 20. Soil pollution degree in Ulaanbaatar city in spring and autumn, 2022

[37] ENVIRONMENTAL PUBLIC HEALTH SURVEILLANCE 2022 REPORT Ulaanbaatar, Mongolia 2023

Over the past decade, an average of 6,497.5 cases of intestinal infectious diseases per 10,000 population have been recorded nationwide, with the majority of cases being dysentery, hand, foot and mouth disease, and hepatitis A virus.[38]

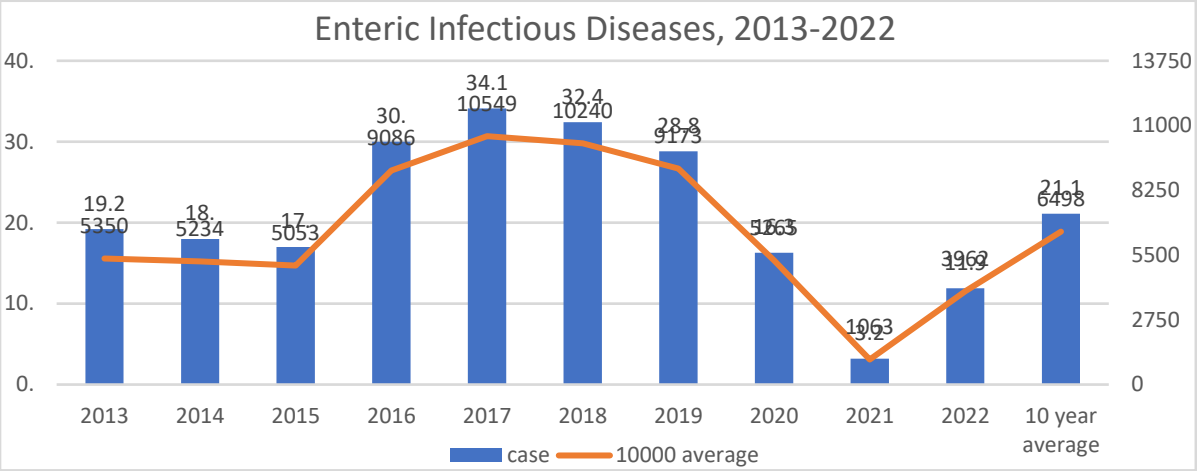


FIGURE 21. Enteric Infectious Diseases, 2013-2022

When we look at the regional differences in the incidence of intestinal infectious diseases, we find that Ulaanbaatar city had a rate of 4.3 cases per 10,000 people, which is higher than the national average. Similarly, the eastern region had a rate of 5.3 cases, also higher than the national average. On the other hand, the western and non-Khangai regions had an even higher rate of 6.6 cases, while the central region had a lower rate of 2.5 cases per 10,000 people.[39]

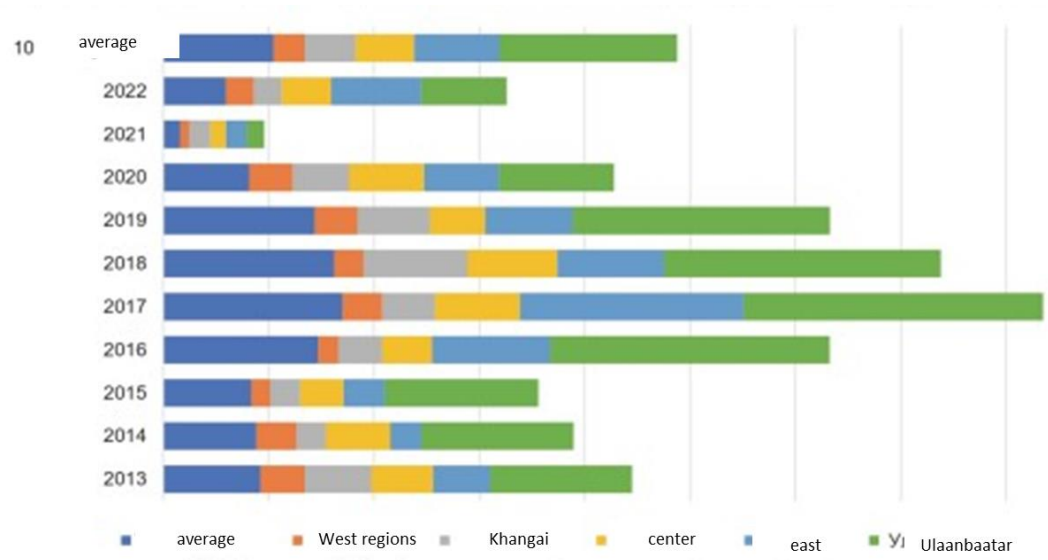


FIGURE 22. Enteric Infectious Diseases, 2013-2022

[38] Center for health development, WHO, 2022
[39] Center for health development, WHO, 2022

TABLE 12. Enteric Infectious Diseases, 2018-2022[40]

Statistics	Regions	2018	2019	2020	2021	2022
Hepatitis A	State results	475	527	353	131	221
	Forest steppe	12	12	9	1	8
	Steppe	4	8	7	3	2
	Desert steppe	11	2	2	3	2
	Desert steppe	12	15	19	10	3
	Gobi desert	10	5	1	0	5
	Ulaanbaatar city	299	235	184	64	127
Dysentery,	State results	6265	5438	2630	732	1725
	Forest steppe	130	87	59	32	33
	Steppe	76	74	29	21	38
	Desert steppe	4	3	3	1	3
	Desert steppe	45	60	27	11	16
	Gobi desert	23	29	19	9	28
	Ulaanbaatar city	5214	4616	1978	458	1324
Hand, foot and mouth disease,	State results	2876	2147	2097	137	1847
	Forest steppe	33	6	65	3	11
	Steppe	209	116	140	28	178
	Desert steppe	84	5	41	5	28
	Desert steppe	1	5	47	2	13
	Gobi desert	66	43	50	6	90
	Ulaanbaatar city	1679	1508	977	17	1021

[40] Center for health development, WHO, 2022

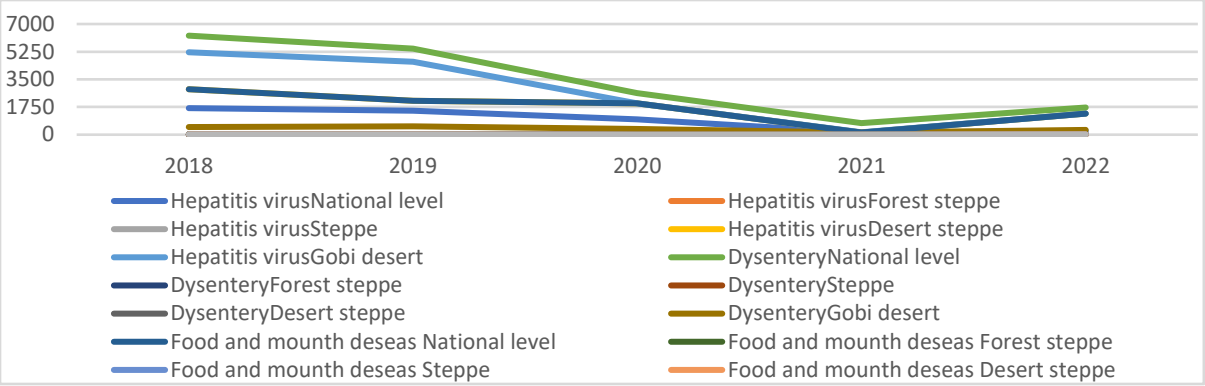


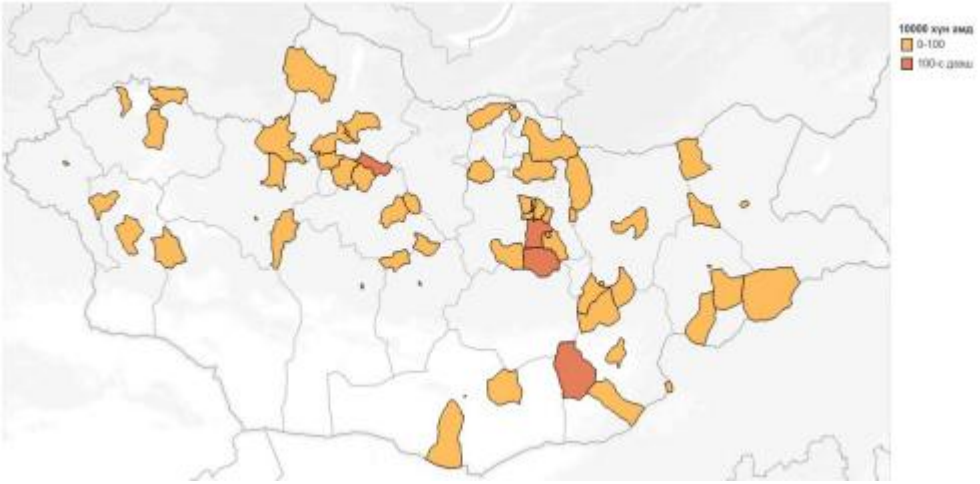
FIGURE 23. Disease by eco regions

In 2022, a total of 1,725 cases of dysentery were reported nationwide. This translates to a rate of 5.0 cases per 10,000 people, making up 43.5% of all intestinal infectious diseases. Compared to the average of the last 10 years, there was an increase of 4.9 cases per 10,000 people. Additionally, when compared to the previous year, there was a significant increase of 2.7 cases per 10,000 people, totaling 993 more cases.[41]

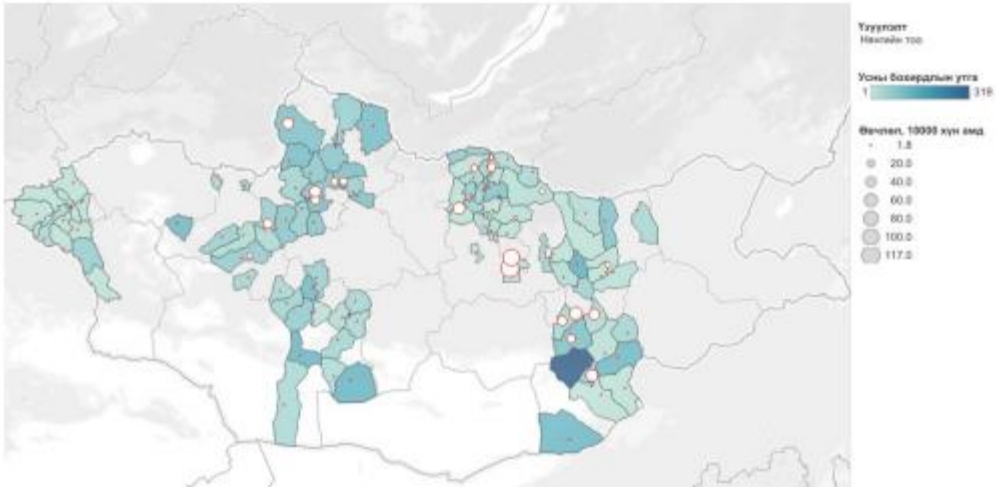
Intestinal infectious diseases related to drinking water and soil pollution are grouped together as dysentery, salmonellosis, diarrhea, hand, foot and mouth disease, acute hepatitis A (A00, A01, A03, A04, A06-A09 by ICD10 classification). A total of 3,962 cases of 6 types of intestinal infectious diseases were registered in 2022which is an increase of 2,899 cases compared to the same period of the previous year. 46.6% of all intestinal infections registered nationwide are hand, foot and mouth disease, 43.5% are dysentery, 5.7% are salmonellosis, 2.1% are diarrheal infections, 1.7% are bacterial food poisoning, and 0.4% are viral hepatitis A. When comparing intestinal infectious diseases by regions, Ulaanbaatar city has 4.3 cases per 10,000 population, and the eastern region has 5.3 cases higher than the national average and the western and Khangay regions have 6.6 cases, respectively and central region has and 2.5 cases lower than the national average, respectively. In 2022, 36.6 cases per 10,000 population of intestinal infectious diseases among children under 5 years of age were registered in 56 Soums of 15 Provinces (17.4% of total Soums). 79.2% of intestinal infectious diseases among children under 5 years of age were registered in Ulaanbaatar. When the cases in 2022 were compared to those of previous year (18.5 per 10,000 population in 2021), the rate has doubled. Deaths due to other food poisoning caused by bacteria were not registered nationwide, while 1 death due to infectious gastroenteritis and diarrhea occurred in Ulaanbaatar. [42]

[41] National statistics office of Mongolia, 2022

[42] ENVIRONMENTAL PUBLIC HEALTH SURVEILLANCE 2022 REPORT Ulaanbaatar, Mongolia 2023



MAP 4. Intestinal infectious diseases of children under 5 years of age, by soums, per 10,000 population,2022



MAP 5. Number of bacteria in drinking water and intestinal infectious diseases in children under 5 years of age (per 10,000 population), by districts and soums, 2022

The number of bacteria in drinking water, bacteria of the intestinal group, and pathogens of the intestinal group are shown and compared with the intestinal group diseases among children under 5 years of age by geographical locations.[43]

[43] ENVIRONMENTAL PUBLIC HEALTH SURVEILLANCE 2022 REPORT Ulaanbaatar, Mongolia 2023

Intestinal infectious diseases among children under 5 years of age were registered the highest in July of 2018, August of 2019, February of 2020, December of 2021, and May of 2022, respectively.

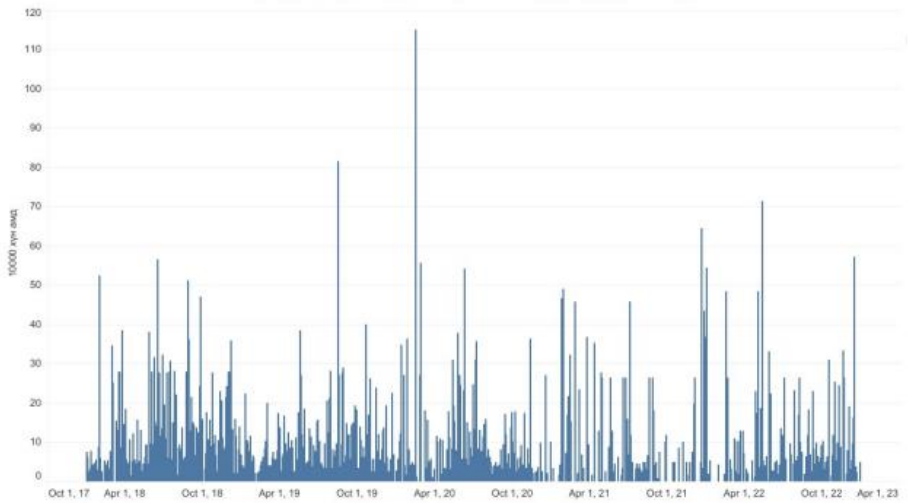


FIGURE 24. Daily registered intestinal infectious diseases of children under 5 years of age in Mongolia, per 10,000 population, 2018-2022

Climate change has led to an increase in the frequency and intensity of natural disasters, impacting the availability of natural resources, elevating environmental pollution levels, and contributing to the contamination of drinking water sources. This situation is compounded by flooded pit latrines, water scarcity disrupting hygiene and sanitation practices, and subsequently, an increase in intestinal infectious diseases. Given these challenges, it is imperative to prioritize the protection of children's health by adapting to climate change and fostering healthy and safe living and learning environments in kindergartens, schools, and homes. Central to this effort is the improvement of water supply, sanitation, and hygiene conditions, underscoring the critical need for concerted attention and targeted interventions to ensure the well-being of children in the face of climate-induced adversities.

CHAPTER 3. CLIMATE CHANGE EFFECT ON EDUCATION

3.1 Main policies on education

UNICEF undertook multiple analyses in 2017 on the impacts of climate change. They found that 60% of children in Mongolia are profoundly affected by extreme winter conditions, or "Dzud". Two prominent studies delved into the ramifications of these extreme winters on children's health and education.[44]

The first research, focusing on the catastrophic winter of 2009/10, analyzed the health implications for children under 7. It revealed that of the 10,000 children studied, 45% residing in districts severely impacted by the Dzud exhibited compromised health, a rate 20% higher than their peers in less affected regions.

The second research, involving a sample of 5,000 students, found that 35% of school-aged individuals in the hard-hit districts were significantly less likely to complete mandatory education relative to their counterparts in lesser-affected districts, where completion rates stood at 80%. These conclusions were consistent for both the 1999-2002 and the 2009/2010 Dzuds, with dropout rates increasing by 15% following such climatic events.

For a middle-income nation like Mongolia, where 95% of children have access to tuition-free basic education, these statistics are alarming. Factors like extreme winters, which in 2018 accounted for an estimated 20% increase in school absenteeism, play a significant role in disrupting Mongolia's education sector.

The Convention against Discrimination in Education, adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization in 1960, serves as a comprehensive framework prohibiting discrimination in education based on various factors. However, it notably lacks specific content addressing education related to climate change. Mongolia's national security concept, outlined in Article 3.5, incorporates environmental security as a crucial component of national security. This involves maintaining environmental balance, safeguarding water resources, mitigating the adverse effects of climate change and land degradation, and preventing biodiversity loss. The concept emphasizes the reduction of environmental pollution, natural hazards, and disasters as foundational for ensuring both a healthy human existence and environmental safety. Furthermore, the Government of Mongolia's New Revival Policy Action Program includes the Green Revival goal, aligned with global development trends, aiming to preserve traditional national customs of nature conservation and establish a standard model for green development. This initiative prioritizes environmental safety to provide optimal conditions for the healthy and secure living of the population, concurrently working towards national goals of mitigating climate change, desertification, and land degradation.

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TABLE 13. Policy analysis on education

International Convention	Legal environment	Government policy	Regulation-Biolo
Convention against Discrimination in Education (1960) https://legalinfo.mn/mn/detail?lawId=1186	General Law on Education (2023)	Vision-2050 (2020)	Regulation of Information systems in the field of education and the creation and regulation of databases
	law on pre-school and general education (2023)	New Revival Policy (2021)	
	Law on Support of Teacher Development (2018)		
	Law on disaster prevention (2017)		

The newly approved Education Package Law of 2023 introduces significant reforms aimed at enhancing the educational landscape in Mongolia. Firstly, it shifts the focus from formal to non-formal education, recognizing individuals' ability to learn and master skills in real-life environments, streamlining processes, and providing a legal framework for obtaining certificates based on self-evaluated skills. Secondly, the law addresses the digital divide in education, leveraging electronic technology to bridge the gap between urban and rural areas, ensuring equitable access, and promoting skill development for children and young people during their free time. Thirdly, it emphasizes English as the primary foreign language of study. Fourthly, the law aims to create equal opportunities for learners with different needs, improving the legal framework for funding, programs, environment, and materials. Fifthly, it includes provisions for teacher training, system reform, and restrictions on additional work for teachers. Sixthly, the law proposes a shift in sector funding to a performance-based system[45].

As the Education Team implements these reforms,

- the goals include aligning educational objectives with development needs, ensuring equal learning opportunities for all Mongolians
- guaranteeing the right to lifelong learning
- facilitating continuous teacher development
- strengthening capacity-based management,
- introducing funding based on quality results, and performance
- Additionally, the Ministry of the sector announces the establishment of an independent electronic education system, transcending the constraints of space and time[46].

[45] https://legalinfo.mn/mn/detail/12458
[46] https://legalinfo.mn/mn/detail?lawId=16759959012931

3.2 Initiatives on education

Prior to delving into the introduction of various initiatives within the education sector in Mongolia, it's crucial to offer an overview of the current landscape. A significant point of concern is the evident lack of comprehensive coverage of topics like sustainable development in the education system. Despite the existence of numerous projects focused on education, Water, Sanitation, and Hygiene (WASH) services and child protection, a prominent observation is that a majority of these initiatives have not adequately accounted for the impact of climate change on children or the importance of Education for Sustainable Development (ESD). These efforts can be categorized into three distinct parts: Initiatives in Education, including ESD; Initiatives in WASH services; and Initiatives in other sectors.

Sustainable development education: As the education sector undergoes expansion in terms of infrastructure and inclusivity, there's a pressing need to further integrate Education for Sustainable Development (ESD). Anticipating that the number of new school enrollments will grow by 56% by 2024 and 71% by 2030, the focus shouldn't solely be on access but also on enhancing the substance of education. A glaring gap in the current landscape is the lack of projects concentrating on climate change education or understanding its implications for children. ESD not only addresses climate change but also equips students with the necessary knowledge, skills, values, and attitudes required to lead sustainable and responsible lives. Mongolia, with its unique environmental and cultural landscape, stands to benefit immensely from the incorporation of ESD principles in the educational framework.

Education reform: The strategic planning for Mongolia's education sector has seen successive iterations, ensuring that the curriculum and teaching methodologies evolve with the times. The most recent master plans and long-term policies, such as "Vision-2050", aim at:

- Creating equal opportunities for everyone to obtain quality education and reforming the inclusive system.
- Regularly updating the curriculum content at all levels with focus areas such as patriotism, respect for Mongolian tradition and culture, and the development of personal and scientific research skills.
- Implementing flexible training methods and continuous development opportunities for educators.
- Embracing the digital transformation of education in tandem with technological advancements.

The ongoing challenge remains to fully incorporate Education for Sustainable Development (ESD) principles across all these facets of educational planning and implementation. This will ensure students are equipped to navigate the global challenges of sustainability while being deeply aware of the local Mongolian context and the broader implications of their actions.

Furthermore, the organization of educational governance and management has witnessed optimization, with an emphasis on decentralization and localization. The formation of an independent national-level system of governance and management for professional and higher education institutions reflects this shift. Aligning with population growth and ensuring equal access to education services, there has been a significant focus on increasing school capacity, expanding open education services, and creating adaptive learning environments. Yet, the goal remains to also infuse these environments with ESD principles to ensure a holistic education for Mongolian students.

Lastly, the emphasis on both internal and external quality assurance at all educational levels ensures that standards are met and maintained. It's imperative that these standards also reflect the importance of sustainable development, preparing students not just for academic success, but for responsible and sustainable living in the future.

"Enabling Equity to Advance Learning" Project (2021-2025):

The chief objective of this project is to bolster both access and the quality of learning by employing inclusive strategies. It encompasses three distinct components: "Inclusive Education", "School Lunch Program", and "Blended Education". The "Inclusive Education" segment targets 18 schools spanning two Ulaanbaatar districts (Khan-Uul and Sukhbaatar) and four rural provinces, benefiting 4,693 mainstream teachers via training workshops. The school lunch initiative is set to be piloted across 45 schools, while the blended learning segment will be introduced in 50 target schools.

“Introducing a Systematic Support Model for Illiterate Herder Parents to Improve the Learning and Wellbeing of Children with Disabilities” Project (2022-2023):

This project prioritizes children with disabilities in rural areas like Uvurkhangai and Khovd provinces, ensuring they receive adequate parental and caregiver support, furthering their educational and wellbeing rights.

“Education Quality Reform” Program (2015-2022):

Spearheaded by the Ministry of Education and Culture, the initiative focuses on refining the educational quality across elementary schools. It emphasizes enhanced learning outcomes by fortifying classroom teaching methodologies.

“Education for Sustainable Development-II” (2019-2022):

This program endeavors to augment national comprehension of Education for Sustainable Development (ESD). Its sights are set on 30 secondary schools across selected regions, including certain Ulaanbaatar districts.

"Project to Improve the Quality and Availability of Education during Economic Difficulties" (2018-2021):

This initiative centers on teacher training in elementary schools, curriculum enhancement, and infrastructural improvements. It also identifies and addresses training needs for institutional management.

“Ulaanbaatar Elementary School Construction” Project (2018-2020):

Primarily a construction initiative, it covers elementary schools in select Ulaanbaatar districts. The Japanese government has extended grant support for this project.

“General Education School Building Construction” Project (2018-2020):

Focused on the construction of a primary school building in specific Songinokhairkhan districts of UB city.

“Project to Improve Health, Education, and Social Security Services for Children with Special Needs” (2015-2019):

This initiative formulates diagnosis and support models for children with disabilities. It selects specific regions and schools as model locations to implement and test these models.

The tapestry of projects implemented in Mongolia seeks to address educational challenges from various angles. With a keen emphasis on accessibility, quality, and inclusivity, these endeavors range from promoting inclusive education, refining pedagogical approaches, integrating sustainable development into curricula, investing in infrastructural developments, to fortifying teacher training. Together, they paint a vivid picture of Mongolia's commitment to crafting a comprehensive and inclusive educational landscape.

However, the initiatives presented are seemingly focused only on enhancing the quality, inclusivity, and accessibility of education in Mongolia. While they are commendable in their own right, their direct relevance to climate adaptation varies. Programs like "Education for Sustainable Development-II" inherently align with climate adaptation, while others, such as construction projects, could be integrated with adaptation principles if they adopt climate-resilient building designs.

1. It would be beneficial if future educational initiatives in Mongolia (and elsewhere) explicitly incorporate climate change adaptation into their objectives, ensuring that the next generation is not only well-educated but also equipped to handle the multifaceted challenges posed by a changing climate.

At the national level, the Sustainable Development Education-2 project in Mongolia aims to deepen the understanding of sustainable development, enhance ESD activities, and foster cross-sectoral collaboration. The project involves mapping cooperative initiatives across various sectors and organizations to promote ESD at all levels. Notably, a voluntary club, comprising local students, has successfully initiated waste separation at the source in schools and homes. However, the challenge lies in the subsequent disposal of the sorted waste, which ends up in general landfills after being crushed and buried in Soum and Provinces. Recognizing the need for improved coordination, there is a call to align projects and programs focused on children's environmental awareness and sustainable development education. This alignment is crucial for enhancing the capacity to address climate change impacts, emphasizing adaptation, and mitigating potential risks. In the education sector, ongoing initiatives encompass inclusive education, a school lunch program, combined training, the creation of an education model for diagnosing and supporting children with special needs, and the enhancement of literacy education for herder parents of children with special needs. Despite numerous construction, expansion, and renovation projects for kindergartens and schools, the absence of considerations for renewable energy, water conservation, and climate change-induced natural disaster resilience in building designs is notable and calls for inclusion.

3.4 Institutional structure one education

The Ministry of Education and Science serves as Mongolia's primary governing body for matters concerning education and science. It is responsible for a wide array of functions, including setting educational levels, crafting the academic calendar, approving textbooks for secondary education, organizing state entrance examinations, providing support to regional educational entities, and granting special licenses for the establishment of higher education institutions. Affiliated with the Ministry are several key educational entities, such as the General Department of Education, the National Institute of Educational Research, the National Council for Educational Accreditation, the Education Loan Fund, the Center for Educational Assessment, and the Educational Information Technology Center, as depicted in Figure 8, which showcases the organizational structure for education in Mongolia.

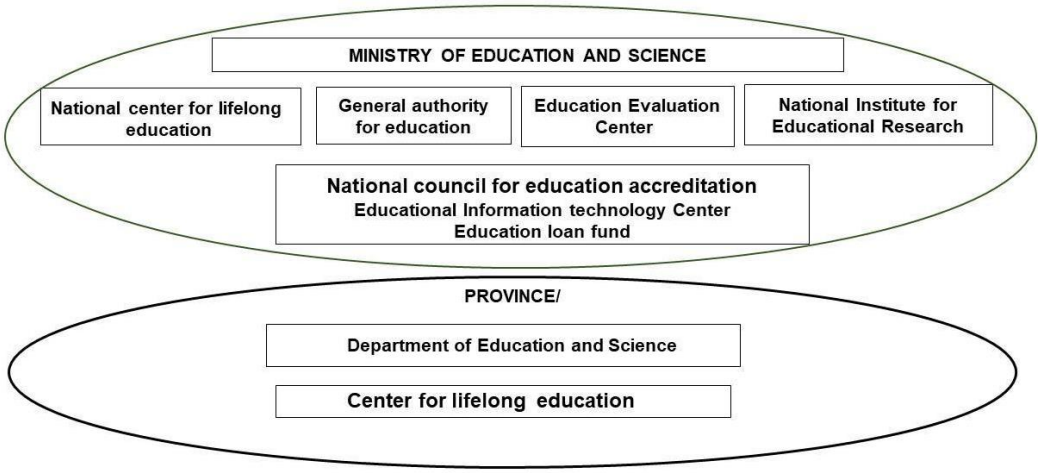

FIGURE 25. The institutional structure of education sector in Mongolia

The landscape of Education and WASH is shaped by a confluence of stakeholders, each bringing their unique expertise, perspective, and approach to the table.

In the domains of Education and Water, Sanitation, and Hygiene (WASH), a multitude of stakeholders operate synergistically to ensure the delivery of effective services and achieve desired outcomes. These stakeholders range from governmental entities and educational institutions to non-governmental organizations and community members. Their roles and responsibilities are crucial not just within their primary domains, but also in overlapping areas and other interrelated sectors. The following table, "Stakeholder Groups and Their Roles," delineates the key stakeholders involved in the realms of Education, WASH, and other interconnected sectors. It offers a comprehensive overview of each stakeholder's core functions and interactions, shedding light on the collaborative ecosystem that underpins the successful implementation of Education and WASH initiatives.

3.4 Climate change impact on education

Mongolian nomadic herders' farming practices are intricately linked to the characteristics of their regions and the natural and climatic parameters of the microenvironment. The actions of herdsman parents, including the preparation of fodder for animals, addressing weather-related disasters like rain, floods, and snowfall, as well as their migration patterns, significantly influence their children's learning experiences. Recognizing the escalating impact of climate change, studies have delved into the varying numbers and frequencies of disasters such as droughts and floods on children's education. Additionally, investigations have been conducted to understand the influence of school buildings on the educational outcomes of children, acknowledging the distinctiveness across natural areas.

3.4.1 Dzud effect on the education sector

Mongolia, characterized by its extreme climate, faces a significant challenge of drought, particularly following dry summers with minimal rainfall. These sudden conditions have notable impacts on the education sector and students in the region.

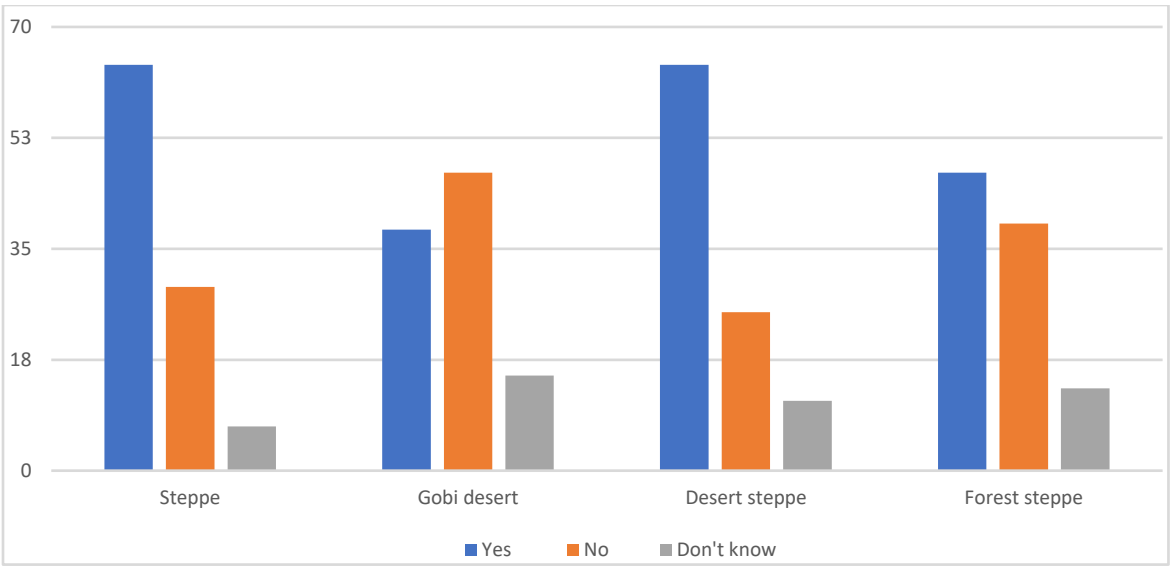

FIGURE 26. In recent years, due to sudden heavy snowfall and storms, have the roads been blocked, causing difficulties for students to come to school?

The study underscores the parallel increase in the frequency of natural disasters attributable to climate change. Events like heavy snowfalls and storms, which block and render roads impassable, pose challenges for students commuting to and from school. While the impact is relatively minor in the Gobi desert region, certain difficulties arise in forested areas. However, students in the steppe and barren regions face significantly greater challenges, as these conditions make transportation to school very difficult.

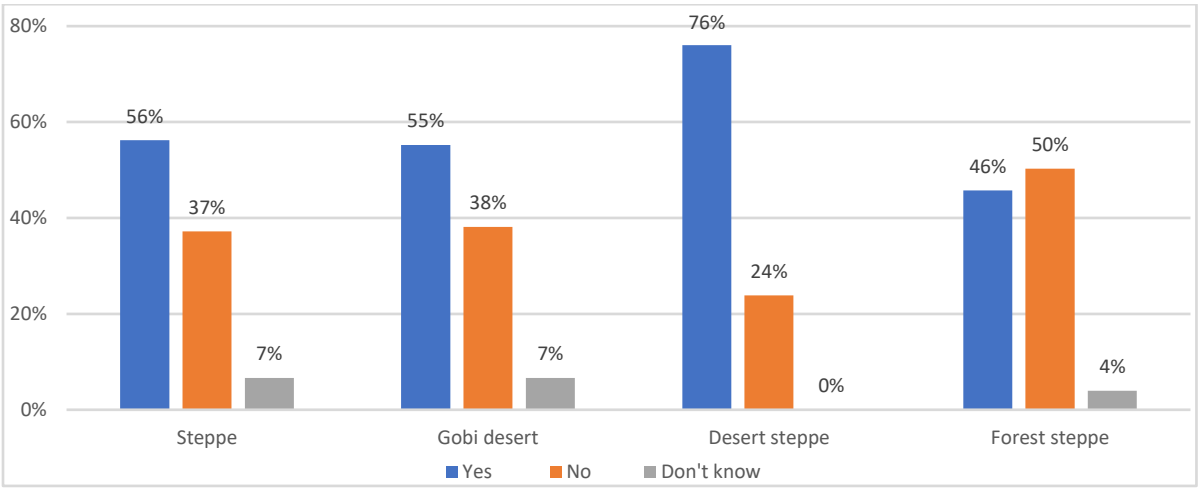

FIGURE 27. Did the decrease in livelihood of herder families due to the death of livestock due to sudden, sudden heavy snowfall and storms negatively affect the students' learning?

The study highlights that the loss of livestock and reduced livelihoods among herders, caused by the influence of Dzud (severe winter conditions), has a discernible impact on student learning. The pressure is notably highest in the barren steppe zone, but negative consequences are also observed in the forest steppe and desert zones. These findings were validated through group discussions with parents and teachers. The

observed trend suggests a potential interrelation between environmental factors in the study area, economic stability, and the academic outcomes of students.

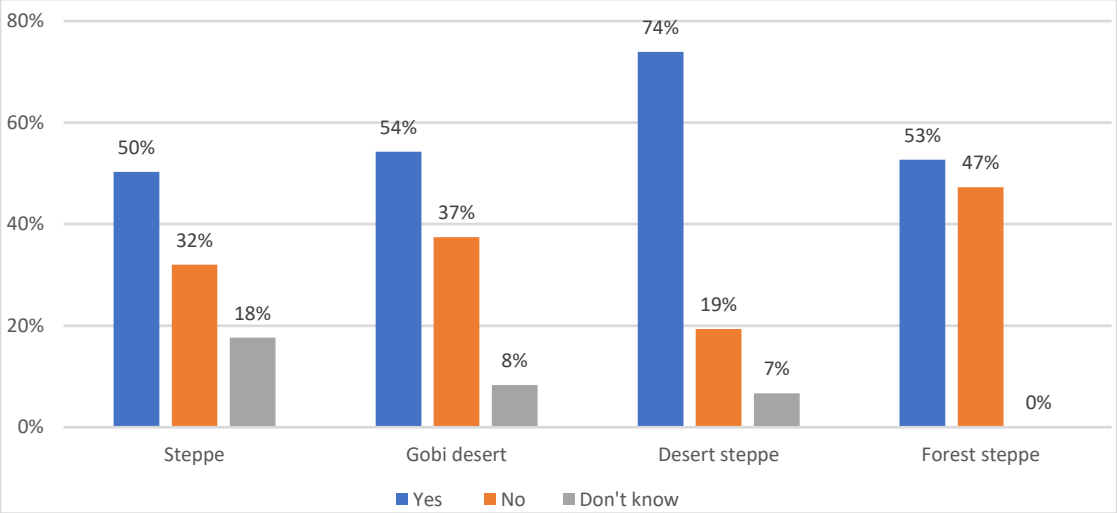

FIGURE 28. Have any children you know dropped out of school after a sudden, heavy snow or blizzard?

The chart illustrates that poverty can be a significant factor contributing to student dropout rates across various regions. Specifically, a notable incidence of school dropout was reported, especially in the Gobi desert region, following sudden heavy snow and rain. Group interviews with teachers, social workers, parents, and guardians further validated these findings. While the importance of education for children's future was acknowledged by parents, it was emphasized that herders who had lost their livelihoods faced a challenging decision, potentially impacting their ability to prioritize education for their children.

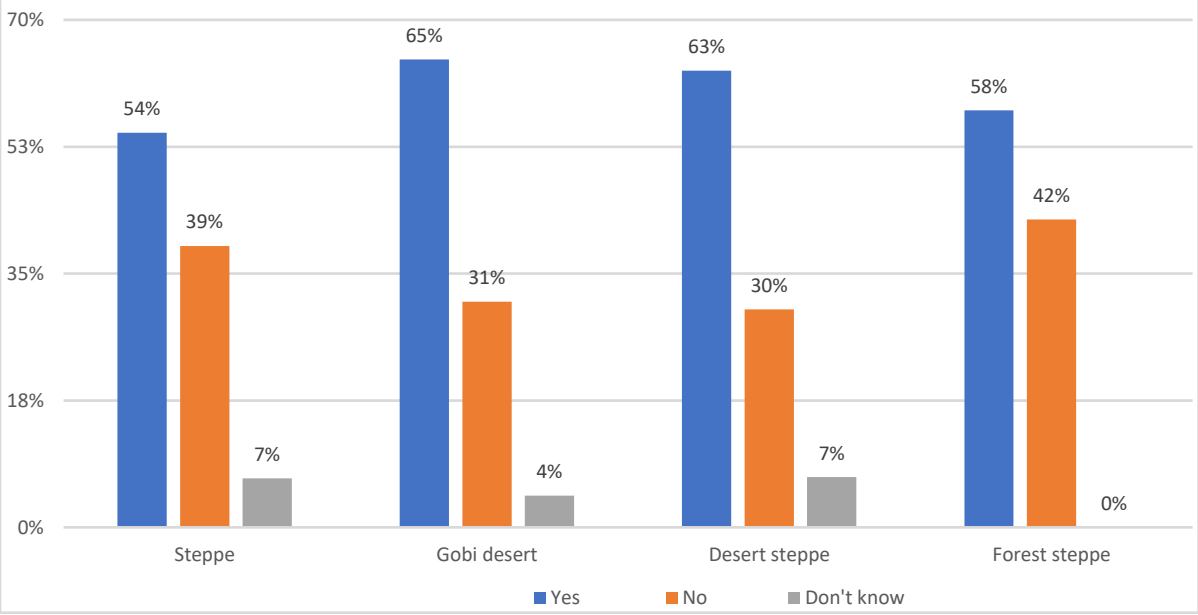

FIGURE 29. Does the death of animals due to drought cause emotional distress for children?

The survey revealed that over half of the students expressed distress over animal deaths due to Dzud across different regions. In group interviews, male children emphasized their strong emotional connection to their

herds expressing concern about potential losses. Teacher group interviews further substantiated these findings, indicating that emotional changes in students are observed based on their engagement with animal husbandry.

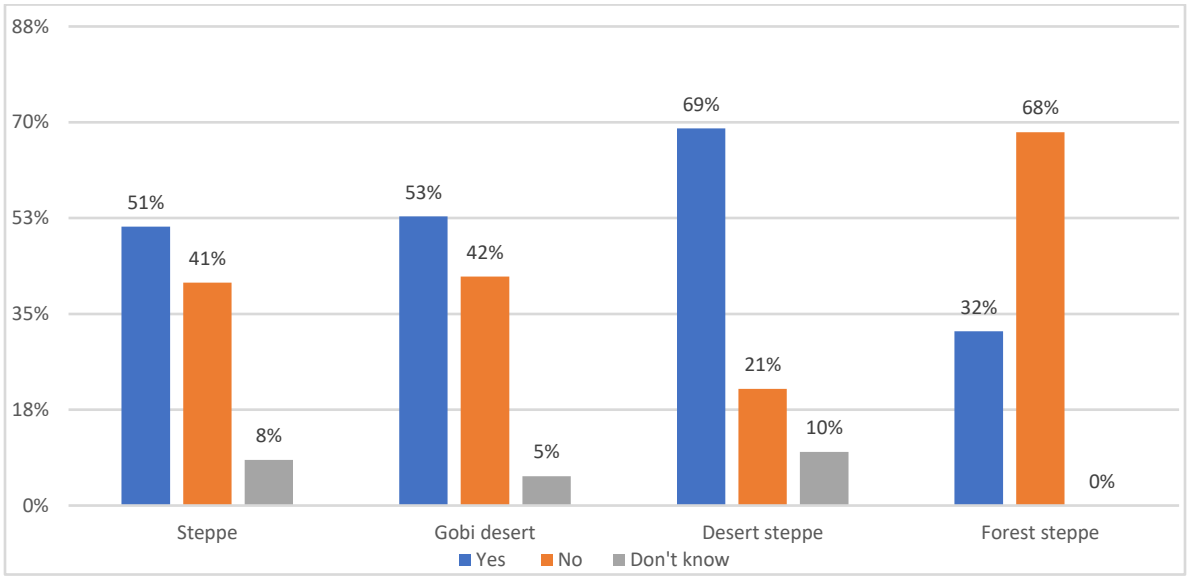

FIGURE 30. Does the migration of students increase due to the increase in the frequency of Dzud and the migration of herders across the province?

Dzud conditions prompt herders to engage in extensive movement across regions, desert steppe, and Gobi desert areas throughout the province. Consequently, students often relocate between schools as they follow their parents during these migrations

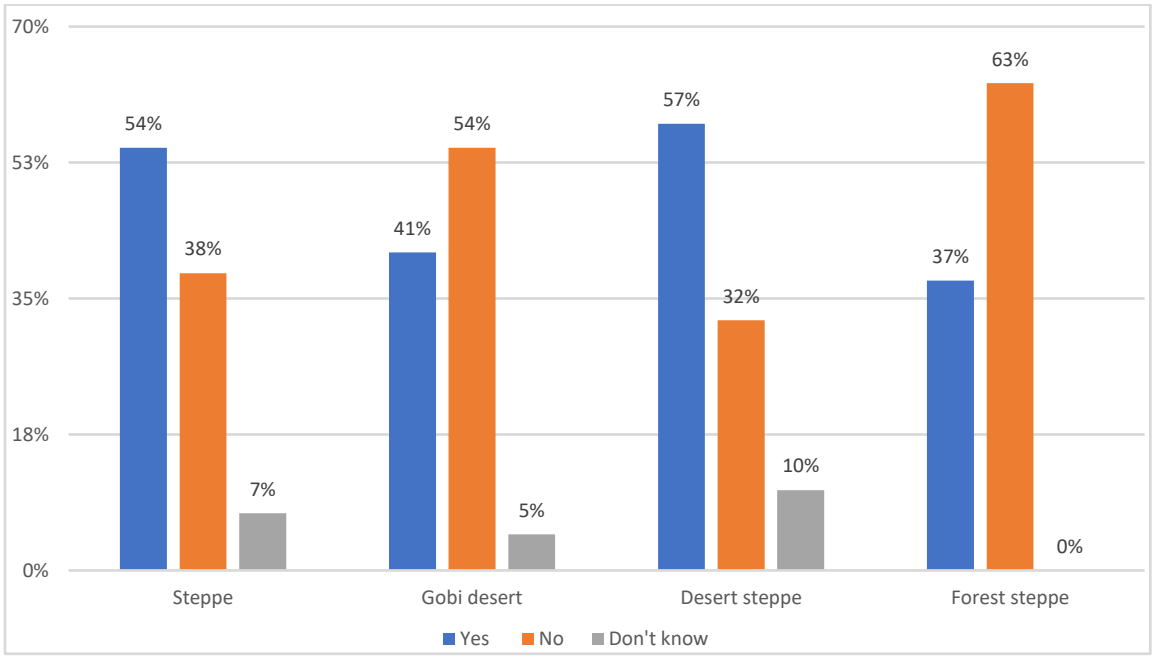

FIGURE 31. Does the increase in the frequency of Dzud in your area cause students to be late for school?

The increased frequency of Dzud (harsh winter) serves as a reason for students in the fields and desert steppe and steppe regions being late for classes. Parents attribute this tardiness to the heightened demands for children's assistance in livestock care and childcare, particularly during challenging Dzud periods. In the academic year 2022-2023, a total of 746.4 thousand children are enrolled in general education schools, with 381.6 thousand children studying in rural areas, constituting 51.1 percent. In rural areas, 35 percent, or 132.6 thousand children, come from pastoral families[47].

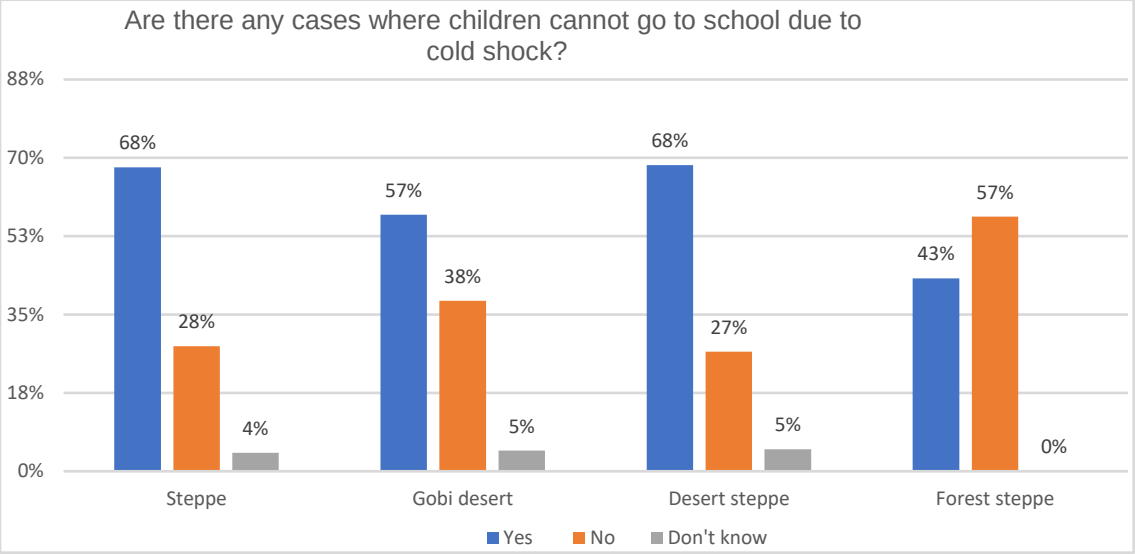

FIGURE 32. Are there any cases where children cannot go to school due to cold shock?

Rural students, particularly those from herding families, bear the brunt of the educational consequences of Dzud. The cold weather poses challenges for these children in commuting to and from school, resulting in tardiness. Additionally, they may face disruptions due to the migration patterns of their herding parents, experience emotional distress, and, in severe cases, drop out of school. The vulnerability to Dzud is notably high for students in desert steppe areas, significant in steppe and Gobi regions, but comparatively lower for those in forest steppe areas.

3.4.3 Drought effect on the education

[47] https://cdn.greensoft.mn/uploads/users/2649/files/Statistics/Education_and_Science_Yearbook_2023.pdf

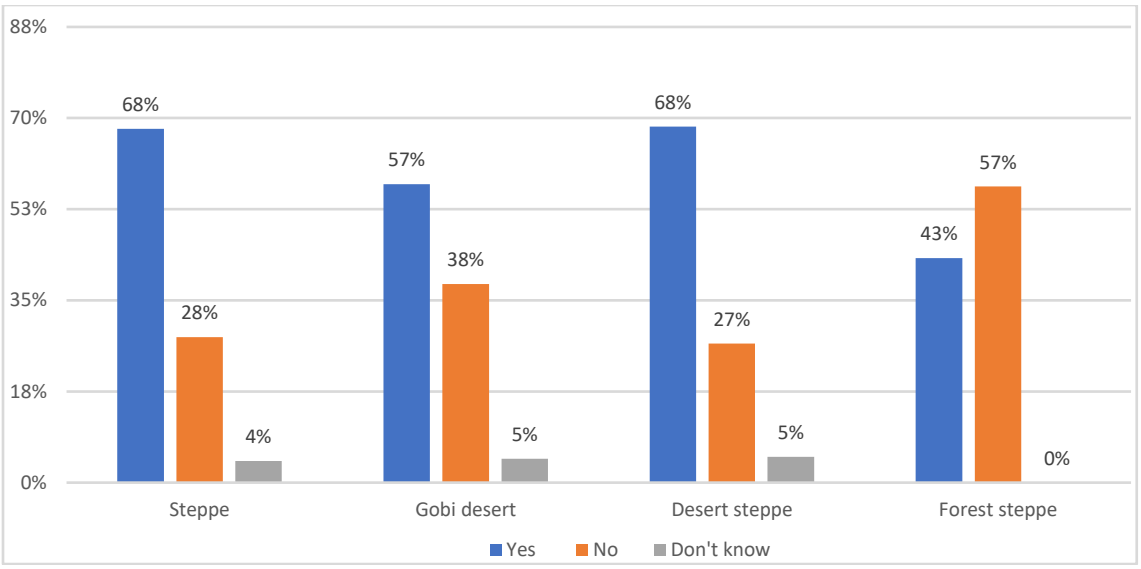

FIGURE 33. Is it possible that due to increased frequency of droughts, herdsmen are forced to camp far away and children drop out of school?

The rising frequency of droughts in the steppes is leading to a notable trend of children dropping out of school, aligning with the migratory patterns of their pastoralist parents seeking new grazing areas, especially in barren fields affected by the aforementioned droughts. Provides a detailed breakdown of students dropping out across various regions, age groups, gender, and the perceptions of different adults.

In terms of regional distribution, the highest number of students dropping out is observed in "desert steppe with 68% affirmatives, followed by steppe regions displays a response with 64 % saying "Yes. Among adults, teachers are the most informed about students dropping out, with affirming the situation. Social workers are also aware, with affirmatives.

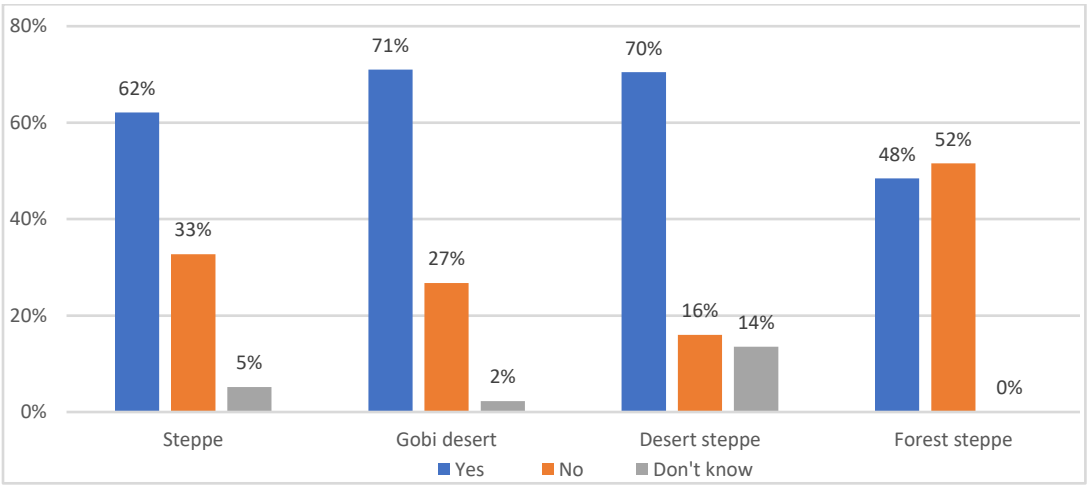

FIGURE 34. Due to the harsh weather and increasing frequency of droughts, the herdsmen tend to camp far away, and the time spent together with the family is shortened, while the children are not able to receive learning support from their guardians whenever they wan

The persistent drought affecting the desert steppes, steppes, and Gobi desert regions has compelled herders to undertake extensive migrations across provinces with their livestock. In this scenario, children face a challenging decision: either stay under the care of a familiar relative and pursue their education or transfer to a new location. Opting to stay means being separated from parents for an extended period, lacking their support, while transferring may disrupt their learning environment. The educational impact of drought is enduring, as herding families, to safeguard their livelihood source, engage in prolonged migrations of six months or even more across different regions in search of suitable pasture. Overall, this table underscores the perceived consequences of increased drought on families across different segments of the population. The data suggests that these environmental changes are influencing the day-to-day lives of many, particularly in certain regions and among specific age groups of students.

3.4.4 Flooding effect on the education

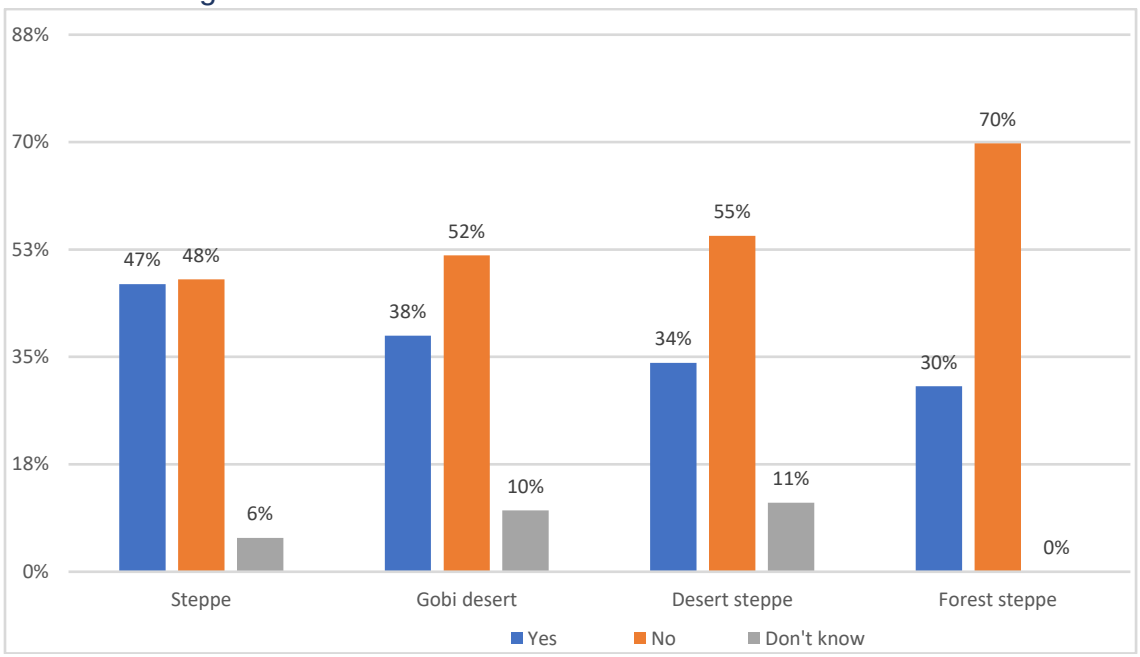

FIGURE 35. Has there ever been a case of a child being killed or injured due to a flood disaster?

Study participants highlighted instances where children's lives were endangered or lost due to floods. Notably, there is no information about children being exposed to floods while studying within the school environment. However, the risk escalates during the summer holidays.

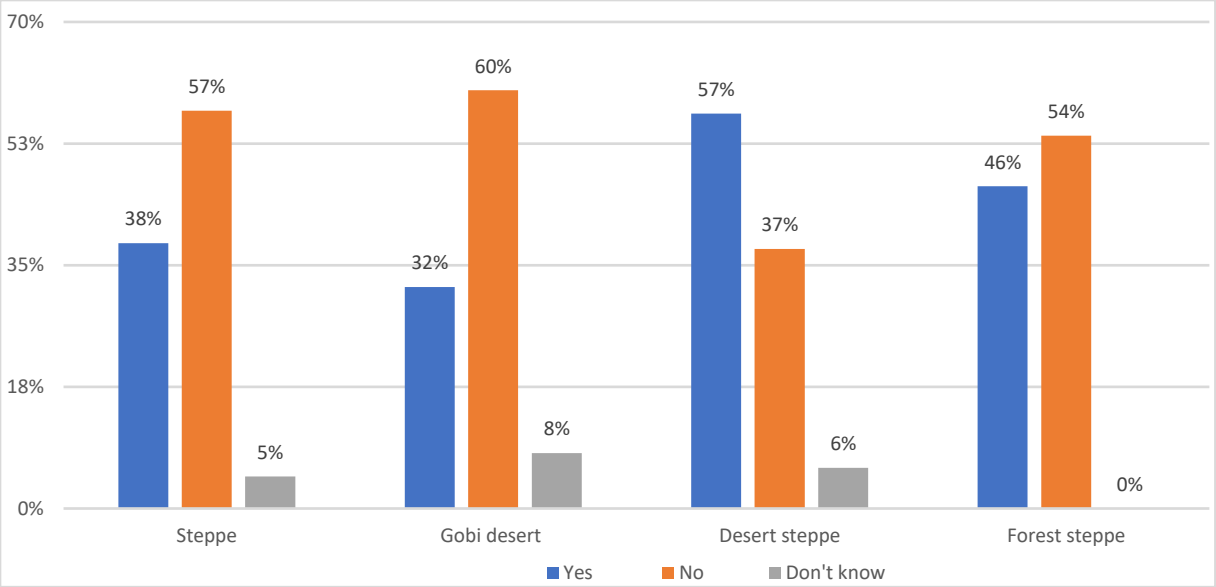

FIGURE 36. Has there ever been a difficult situation for children to come and go to school due to the blockage of the river crossing or damage to the road due to the flood disaster?

Flooding causes road damage, significantly exacerbating travel issues, particularly in forested areas. Despite the general decrease in precipitation and increased aridity in the desert region, short-term heavy rains still pose a threat by damaging roads and passes, thereby compromising travel conditions.

3.4.5 Climate change impact on education infrastructure

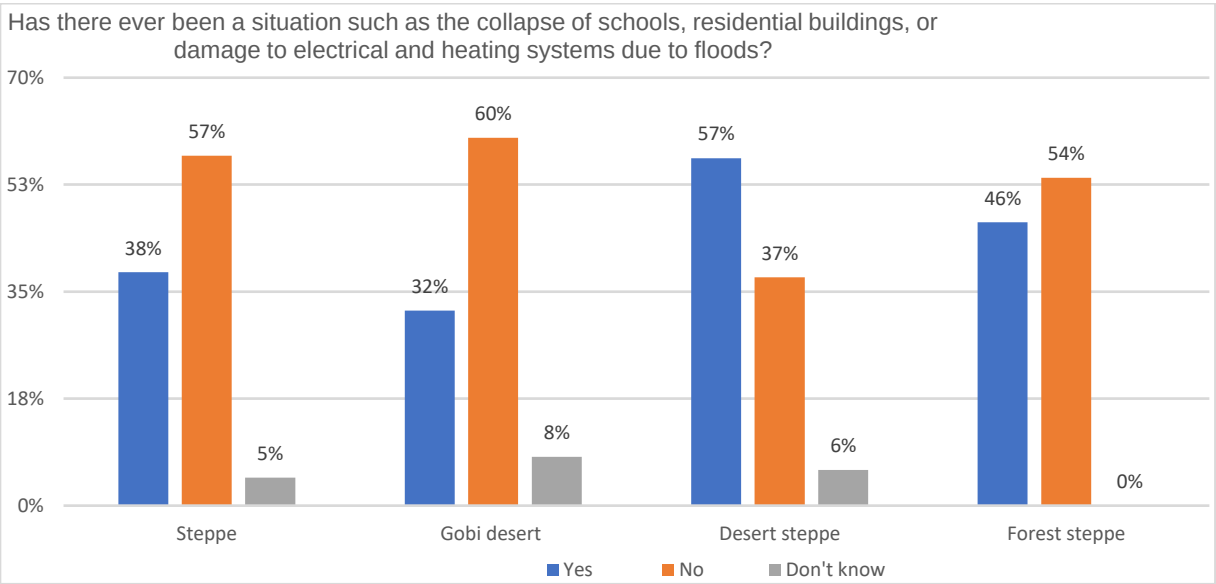

FIGURE 37. Has there ever been a situation such as the collapse of schools, residential buildings, or damage to electrical and heating systems due to floods?

Insufficient fuel reserves lead to sudden cold shocks and heating system failures, causing discomfort for students studying in desert areas.

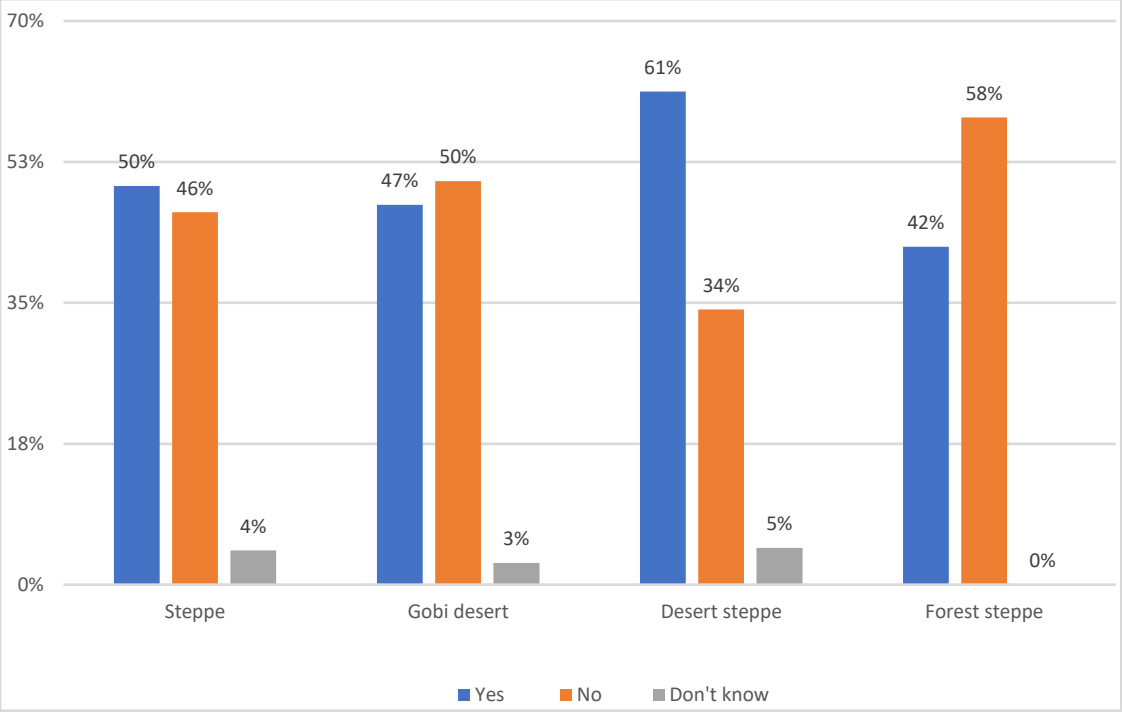

FIGURE 38. Does the heating of the school fail due to lack of preparation for sudden cold shock and lack of fuel reserves, causing uncomfortable conditions in the children's learning environment?

Floods pose a threat to school infrastructure, leading to the collapse of buildings and damage to electrical and heating systems, with documented incidents in steppe, Gobi, and forest steppe regions.

3.4.6 Education curriculum on climate change

The study scrutinized the contents of 5 standards, 25 curricula, and 22 textbooks pertaining to 5 natural science subjects in general education schools, specifically focusing on adaptation to climate change and mitigation of natural disaster risks.

TABLE 14. The detailed list of teaching materials was analyzed for insights and implications

№	Subjects	level	Standards	Curriculum by Grades	Textbooks
1.	Human and Nature	Primary	Natural Analysis	Human and nature 4	Human and nature I
				Human and nature 5	Human and nature II
				Human and nature 6	Human and nature III
2.	Geography	Middle	Geographical Education Standard	Geography 7	Geography I
				Geography 8	Geography II
				Geography 9	Geography III

		High		Geography 10	Geography IV
				Geography 11	Geography V
				Geography 12	
3.	Chemistry	Middle	Chemistry Education Standard	Chemistry 8	Chemistry I
				Chemistry 9	Chemistry II
		High		Chemistry 10	Chemistry III
				Chemistry 11	Chemistry IV
4.	Biology	Middle	Biological Education Standard	Biology 7	Biology I
				Biology 8	Biology II
				Biology 9	Biology III
		High		Biology 10	Biology IV
				Biology 11	Biology V
				Biology 12	
5.	Physics	Middle	Physical Education Standard	Physics 7	Physics I
				Physics 8	Physics II
		High		Physics 9	Physics III
				Physics 10	Physics IV
				Physics 11	Physics V
				Physics 12	

The study suggests that the current contents of textbooks and curricula may not adequately address climate change and its regional impact, although the concept of sustainable development is relatively well incorporated. However, the findings highlight the potential to enhance the curriculum by incorporating local case studies, particularly focusing on climate change, its effects, and adaptation strategies. For instance, group interviews with parents and guardians revealed that the nomadic herders' farming practices are closely tied to regional and microenvironmental features, influencing students' learning. An example cited was the delayed start of hay harvesting in the forest steppes, coinciding with the school year, leading to high school students' tardiness due to responsibilities in helping with haying and caring for younger siblings. The study proposes the implementation of adaptive and flexible management by local education authorities as a solution to address such challenges.

CHAPTER 4. CLIMATE CHANGE IMPACT ON HEALTH

4.1 Main policies on energy and health

The following laws are in force in Mongolia regarding energy. It includes: Renewable energy law (2007.1.11), Law on energy conservation (2015.11.16), Law on energy (2001.02.01), Law on payment of electricity, thermal energy and coal (2007.1.16). These laws regulate relations related to the production, supply, distribution and transmission of energy, the construction of energy structures, the use and conservation of energy etc.

In the long-term development policy of Mongolia "VISION-2050"(Objective 4.2), in clauses as follows, it is stated that 4.2.34. Expand the capacity of thermal power plants to ensure reliable, safe, and stable energy, and build new power plants to fully meet domestic needs, 4.2.35. An intelligent integrated system with infrastructure based on advanced technology will be built by building vertical and horizontal main axis electricity transmission lines of Mongolia's integrated energy system, 4.2.36. Reduce dependence on imported energy by building a source of regulation of the integrated energy system, 4.2.37. The installed capacity of renewable energy will be increased to 30 percent, and 10 percent of the outflow of rivers and streams will be used for the energy of rivers and streams will be used for energy production and other needs, 4.2.38. It will be used for local heat supply based on modern advanced technology of renewable energy sources, 4.2.39. In order to improve the quality and availability of heat supply in cities, soums, and settlements, heat sources and heat pipelines will be expanded and upgraded, 4.2.40. The initiative of the integrated Asian energy grid will be implemented in cooperation with the countries of Northeast Asia, 4.2.41. Innovation, advanced techniques and smart technologies will be introduced in the energy sector, and financial independence, efficiency and savings policies will be implemented 4.2.42. Sun, wind, water, biomass, liquid and gas fuels, geothermal heat, fuel cells and other sources will be used in accordance with the power balance of sources, respectively.

In Child rights law (2016.02.15), article 7.1 states that Children have the right to be protected from crime, violation, violence, physical punishment, emotional stress, neglect, and any form of exploitation in all social environments. But there are no provisions on child protection and safety related to climate change.

4.2 Initiatives on energy and health

These initiatives underscore a commitment to shielding children from various harms while promoting societal development and resilience, necessitating integrated approaches to address both immediate and climate-related challenges.

1. Power plant project in 10 provinces, 2019-2024, financed by Government of Korea. The implementation of this project will reduce air and environmental pollution and greenhouse gas emissions in these provinces. According to technical and economic analysis, SO3 will be reduced by 10times, NO3 by 3 times, and particles by 120 times.

2. A project to increase the efficiency of heat supply in Ulaanbaatar, 2020-2025, financed by World bank. During the project, increase the capacity of the centralized heating supply pipeline and extend the network to selected areas of the district of Ulaanbaatar city.

3. Erdeneburen hydroelectric station project, 2022-2027, financed by Government of China. With the implementation of this project, the Western provinces will get rid of their dependence on imported

electricity and have a reliable source of renewable energy that is beneficial to the economy, does not harm the environment, and will be provided with 100% domestic sources.

4. Impact of air pollution on Maternal and child health project, 2018-2023, implemented by UNICEF. During the project “Agaar neg” platform is established and CHIP heating package is produced. And air quality mapping is done throughout Mongolia.

5. Clean air project is implemented between 2012-2019 in Ulaanbaatar, financed by World bank. During the project, stoves are distributed to ger area households, “insulation campaign” is organized and during the campaign households’ houses, kindergarten and schools’ heat-insulated. The Mongolian government will continue to implement this project from 2020.

6. National program to reduce air and environmental pollution is adopted on July 03, 2017 by resolution of Government of Mongolia. Also, action plan to implement the program is adopted by decree of MET.

7. "Strengthening the Child Protection System in Mongolia" Project (2018-2022): With a broader goal, this project aimed to enhance Mongolia's child protection system and services. It empowered joint child protection teams at the community level and raised public awareness about child protection issues.

8. Child lunch program was starting by Government decree#196 in 2006. The National program to support school food production and services is approved on June 01, 2020.

4.3 Climate Change Impact on Energy and Health

4.3.1 Child respiratory diseases

The escalating frequency of windstorms and persistent dryness has led to a surge in yellow dust levels across the region. Annually commencing in February, yellow dust storms have become a recurring issue. The proliferation of weeds adds to the problem, exacerbating allergies among children. Allergies triggered by various sources, including wild plants, post-flood dust, mining activities, tourist foot traffic, and coal smoke, have become commonplace. Symptoms such as nasal congestion, itchy throat, coughing, sneezing, and a runny nose are prevalent. Skin irritations, itchiness, redness, and tearing are also frequent among children. Notably, urban children are more susceptible to allergies compared to their rural counterparts, with six out of ten children experiencing allergy-related symptoms.

Certain areas face distinctive challenges. For instance, in Nalaikh district, the proximity of a slaughterhouse, Orgio chicken farm, and garbage dump to residential areas results in a continuous odor of chicken droppings, animal slaughter, and burning garbage. Yellow dust generated by brick factories, briquette production, and cement plants combines with white yellow dust carried by spring and autumn winds, affecting air quality in various regions.

Air pollution is a critical concern in densely populated areas like Ulaanbaatar and province centers, where coal is extensively used for heating households and offices. This pollution contributes to a surge in respiratory illnesses. Even after recovering from common colds, children frequently experience lingering

symptoms such as prolonged coughing and recurrent fever. School doctors report instances of children falling ill, recovering for a week, attending school, and then relapsing, often with sore throats.

Indoor air quality is another pressing issue, particularly in urban areas such as Ulaanbaatar and Nalaikh district. Poor housing conditions expose children to indoor air pollution, compounded by the reluctance to open windows due to yellow dust and smoke. Stuffy noses and headaches upon waking are common among children during winter, exacerbated by overcrowded classrooms that limit ventilation. This results in oxygen deficiency due to indoor air pollution.

TABLE 15. Air pollution and respiratory diseases

Region	Variation	2021											
		1	2	3	4	5	6	7	8	9	10	11	12
Forest steppe	(NO2) mg/m^3	0.024	0.022	0.021	0.017	0.019	0.017	0.013		0.016	0.020	0.024	0.026
	(SO2) mg/m^3	0.017	0.017	0.010	0.005	0.004	0.003	0.002		0.004	0.006	0.014	0.014
	Dust (PM10) mg/m^3	0.132	0.019	0.129	0.049	0.045	0.018	0.019	0.025	0.033	0.093	0.160	0.152
	Respiratory diseases	527	514	727	379	376	256	332	424	391	488	548	665
Gobi-desert	(NO2) mg/m^3	0.065	0.048	0.035	0.029	0.022	0.022	0.020	0.029	0.029	0.041	0.054	0.058
	(SO2) mg/m^3	0.032	0.029	0.021	0.005	0.004	0.006	0.003	0.003	0.004	0.016	0.092	0.091
	Dust (PM10) mg/m^3	0.541	0.356	0.289	0.081	0.043	0.049		0.028	0.048	0.080	0.159	
	Respiratory diseases	1045	1239	4284	3370	4044	2137	857	834	1407	1686	2868	2225

Respiratory diseases among children are one type of the evidence of the direct impact of dust and air pollution caused by climate change-related dryness on children's health. For example, in a desert region, in November, December and January, when coal is used the most, Nitrogen dioxide in the air is the highest at 0.032-0.092mg/m ^{3}, Sulfur gas 0.054-0.064 mg/m ^{3}, Dust (PM10) 0,289-0.541 мg/м^3 in January, February and March, respectively. Getting dusty level is high in those months indicating less precipitation and less snow cover during the winter months. In November, December, January, February and March with the above pollution, the number of respiratory diseases among the children is the highest, ranging from 2868 to 4287. It can be seen from this that as the amount of pollution in the air increases, respiratory diseases of children also increase. And, in forest steppe region, Nitrogen dioxide in the air is the highest 0.022-0.026mg/m ^{3}, Sulfur gas 0.014-0.017 mg/m ^{3}, Getting dusty (PM10) 0,132-0.160 мg/м^3 in November, December, January and February, respectively. In November, December, January, February and March with the above pollution, the number of respiratory diseases among the children is the highest, ranging from 514 to 727. Compare the desert region with forest steppe region, the air pollution and respiratory diseases among the children caused by it are more in desert region.

4.3.2 Child safety

Mongolia has witnessed an alarming increase in windstorms, posing a heightened risk to the well-being of herders' children. These adverse weather conditions, particularly prevalent during spring and winter vacations, expose young individuals to perilous situations. Teenagers, actively engaged in supporting their families with livestock care, often find themselves lost in the midst of windstorms. This unfortunate scenario results in freezing of their ears, cheeks, and hands. A glimmer of hope emerges from Matad soum of Dornod province, where a search and rescue operation successfully located two lost children amidst a storm.

Adding to the complexity, there are herder children who find themselves thrust into the role of household heads due to harsh environmental conditions such as severe droughts and unforgiving winters. When parents undertake long journeys to distant provinces and soums with their livestock in search of sustenance, these children are left to care for their siblings. Returning from school to find a cold and food-deprived home has become a stark reality for them, eroding the comforts of everyday life. Balancing the demands of their livestock with the needs of their children becomes a formidable challenge for herders, often resulting in unsupervised children.

Also, mining is a dominant occupation within many soums and provinces, compelling most residents to engage in this industry. Consequently, parents are frequently absent for extended periods of 14-30 days, leaving their children in the role of household heads. This phenomenon is particularly pronounced in Gurvantes and Tsogttsetsii soums of Umnugobi province and Dornod province. In Gurvantes soum, Umnugobi province alone, 43 household-headed children shoulder the responsibilities of their younger siblings, grappling with the challenges of nighttime fear, cold nights without heating, and the burden of managing a household single-handedly.

The scorching summer heat introduces yet another set of risks. Children, seeking respite from the heat, frequently venture to rivers and lakes for cooling off through swimming and diving. Tragically, such pursuits sometimes turn fatal. The year 2022 saw two boys drowning in the Kherlen river, while a staggering 23.2% of the total 85 individuals who lost their lives in water-related accidents were children. By July 2023, 26.6% of the 45 lives lost in water accidents were children.

The year 2023 brought new challenges, as heavy rains and mountain floods claimed the lives of 15 individuals, including 2 children. The threat of natural disasters amplifies the vulnerability of children during changing climate patterns.

Children hailing from both urban and local remote areas often grapple with fears stemming from encounters with wild animals like wild dogs. The challenge of facing windstorms on their way to school adds to their difficulties, often resulting in freezing hands and feet.

A particularly concerning situation unfolds for children whose families reside near the 4th railway crossing in Nalaikh district. These young students have to navigate the railway crossings on their route to school. In the morning, the railway cars are positioned on the tracks, prompting children to crawl beneath them. Tragically, there have been instances of children being struck by moving wagons during such precarious maneuvers.

4.3.3 Nutritional Challenges Amid Changing Conditions

The winter of 2022-2023 marked a significant loss for herders as the aftermath of a harsh summer drought and severe winter led to substantial livestock casualties. This loss, amounting to 50 percent of baby animals for most herders, has dire implications for children's nutrition. The scarcity of meat due to reduced livestock, along with mother animals' insufficient milk production, results in delayed availability of milk and dairy products in the market, directly impacting children's nutritional intake.

Escalating meat prices and its scarcity have compounded the issue, leaving many households unable to afford the necessary daily meat consumption. The same scarcity and elevated costs of dairy products further deteriorate children's nutrition. For children of herders, harsh winters and springs prompt herders to venture far for their animals' sustenance. This separation from parents, coupled with financial strain from expending resources on fodder, leads to limited access to food. The financial squeeze also restricts children from purchasing their preferred and essential foods.

Also, moreover, children from child-headed households and vulnerable families experience subpar nutrition. For children living in school dormitories, access to varied and nutritious meals contrasts with their home environment. However, children in child-headed households often arrive at school without having had breakfast, underscoring disparities in nutrition. Current lunch program, catering to grades 1-5, also a proactive approach by parents towards younger children's nutrition is good. However, the abrupt transition to middle school at grade 6 brings about significant changes, including multiple teachers, lack of lunch provision, and diminished parental attention. This sudden shift often leads to psychological disturbances among 6th graders.

The economic burden is evident in rising costs. For example, the cost of oats surged from 6,000 MNT to 15,000 MNT in the winter of 2022-2023. Similarly, hay prices escalated from 150,000 MNT to 400,000-500,000 MNT. Beyond livestock challenges, changes in natural resources exacerbate the situation. Drought and dryness have dampened the productivity of land and resources, affecting wild fruits, pignolia, and mushroom yields. Residents of the Gobi-desert region, who rely on preserved leeks for both consumption and income, are witnessing a decline in this practice. Similarly, residents of the forest steppe region, accustomed to relying on fruits for winter consumption, are experiencing reduced yields.

The timing of natural growth is also disrupted by the delayed onset of warmer weather. Wild fruits and vegetables struggle to thrive due to unseasonably slow warming, affecting availability for consumption. This nexus of challenges underscores the pressing need for proactive measures to ensure children's nutritional needs are met amidst evolving environmental conditions.

Case:1
Our household members used to earn a certain amount of income by picking nuts, fruits and onions and selling them. And, throughout the winter we used to use wild fruits, nuts and onions for kids' nutrition. But, in the last 5 years, I cannot reserve it for food because natural resources are reduced.

The escalation of wind storms has cast a shadow on the cashmere and wool industries, unleashing a cascade of challenges. The intrusion of sand, earth, and grass into animal skins, wool, and cashmere fibers during these storms is an unsettling reality. Approximately 2 kilograms of this mixture sink into the backs of each sheep or goat, negatively impacting the quality and value of their produce. As a result, the market price of wool and cashmere has dwindled, exerting a direct toll on household income, and subsequently, access to food and essential supplies for children's schooling.

The decrease in cashmere yield is closely tied to the overall health of livestock animals. The diminished fatness of these animals contributes to reduced cashmere output. During periods of drought and Dzud, when grass becomes scarce, herders are compelled to seek distant grazing areas for their cattle. This pursuit demands additional fuel consumption for vehicles and motorcycles, amounting to an extra cost of 10 liters of fuel per day for herder households.

In Dornod province, the incidence of large fires has significantly impacted natural resources and wildlife, directly affecting household sustenance. The aftermath of these fires has disrupted bee-farming, eradicating suitable areas for honey collection. Notably, in Khalkhgol soum of Dornod province, a staggering 90

percent of land was affected by spring 2023 fires, resulting in substantial bee losses due to an exceptionally cold winter.

In general, extended autumns are favorable for beekeeping, granting more time for honey collection.

Oil spills from mining activities in Dornod province have had dire consequences on local fauna. These spills have not only poisoned animals but also triggered sickness, contributing to the soaring meat prices. These intricate interconnections underscore the far-reaching effects of environmental shifts on various aspects of life, warranting comprehensive strategies for mitigation and adaptation.

4.3.4 Psychological Strain Amid Environmental Challenges

The harshness of winter and spring, coupled with forceful winds, casts a shadow on the mental well-being of herder children. During these seasons, their concern for the safety of their parents and livestock takes a toll, leaving them psychologically unsettled and distracted from their studies. The loss of beloved animals, especially, triggers profound emotional responses, leading to tears and a deep sense of loss. The strong bond between herder children and their animals magnifies the impact of these losses, reflecting the gravity of these emotional struggles.

Homesickness emerges as a prevalent phenomenon, stemming from the prolonged absence of parents tending to livestock in distant areas. The inability to contact parents due to remote locations or changed pastures adds to this distress. In regions heavily impacted by mining activities, the narrowing of livestock pastures forces herders to camp far away for extended periods, incurring elevated commuting costs.

As the economic strain deepens due to livestock losses, tension and anger often arise among herding families, leading to deteriorating relationships between parents. This deterioration, in turn, casts a shadow on the psychological well-being of their children.

Environmental disasters have also exacerbated psychological challenges. Strong windstorms in 2021 and 2022, resulting in the collapse and displacement of homes, have left families homeless and children grappling with worry and anxiety. In 2023, a wildfire in Khalkh gol soum of Dornod province rendered approximately 20 families homeless, contributing to a nationwide count of 32 affected families. The shock of losing their homes and the ensuing homelessness inflicts profound psychological pain on children, intensifying their emotional struggles during these trying times.

4.3.5 Energy Challenges

In the expanse of remote ger areas, infrastructure shortcomings pose safety concerns for children's journeys to and from school. In contexts like New Nalaikh subdistrict of Nalaikh district, roadways and lighting remain unresolved, compelling children to navigate distant routes. Moreover, certain areas, such as the 4th khoroo of Nalaikh district, grapple with the absence of electricity, further exacerbating the challenges faced by residents.

Recent years have seen the adoption of improved briquettes for household heating. However, these briquettes come with downsides like excessive soot, ash powder, and distinct odors. Tragically, in Nalaikh district during the winter of 2022-2023, two suffocation incidents involving children were linked to these briquettes.

Discussions with community members revealed that many school classrooms in soum experience cold conditions during winter. Frost-laden walls and icy windows are common, particularly in buildings with aging wooden windows that allow chilly drafts. These factors contribute to significant heat loss, prompting children to attend classes clad in outerwear to stave off the cold.

Energy consumption patterns also raise concerns. Instances where a single heating boiler serves multiple institutions like schools, kindergartens, government administration buildings, and hospitals result in a hefty demand for coal, averaging around 300-400 tons annually. Additionally, over 200 vehicles burn firewood to heat facilities in soums, compounding the environmental and logistical challenges.

Addressing these energy-related hurdles is vital not only to enhance living conditions for families but also to create a conducive educational environment for children in these remote regions.

PICTURE 1. Heating boiler of the school, Dornod provinces' Bayandun soum school

PICTURE 2. Heating boiler of the school in Khuvsgul province's, Galt soum

In Mongolia, a significant proportion, around 20 percent, of the total energy supply is sourced from neighboring countries, primarily Russia and China. For instance, electricity supply to regions like Davst

and Zuungobi soums in Uvs province is reliant on Russia, while Gurvantes soum in Umnugobi province is powered by China. Unfortunately, unanticipated power outages are frequent occurrences, causing disruptions in daily life.

The impact of these energy dependencies becomes more apparent during wind storms. Recent years have witnessed an escalation in power interruptions due to electrical damage caused by these storms. However, Dornod province stands as an exception with its self-sustained power plant, catering to the energy needs of both Dornod and Sukhbaatar province.

In Davst soum of Uvs province, a unique phenomenon unfolds from November to January, where dense fog blankets the lake, rendering the sun invisible to residents in the soum center during this period. The ensuing longer duration of cold spring storms results in heightened wood and coal consumption, adding to the financial burden of household heating.

Mitigating energy dependency vulnerabilities and fortifying infrastructure against climate-induced disruptions are paramount for ensuring stable energy supply and safeguarding the well-being of our communities.

4.3.6 Health and energy use in schools survey

In the context of modern society, the intersection of health and energy usage is a critical domain that significantly influences the well-being of communities. The availability and efficiency of energy sources, particularly in educational institutions, play a pivotal role in shaping the overall health and learning environment. As we navigate the challenges of energy demand, environmental impact, and public health concerns, understanding the intricate relationship between health and energy usage in schools is of paramount importance.

This survey is dedicated to comprehensively exploring the dynamics of health and energy utilization within educational settings across the regions. By closely examining how energy sources, heating methods, and infrastructure affect the well-being of students, educators, and staff, we aim to uncover valuable insights that can inform decisions and drive positive change.

Throughout this study, we have engaged with parents, teachers, and students to investigate the prevailing energy sources and consumption patterns in schools. Our focus also extends to examining the consequences of these energy practices on indoor air quality, student health, and overall learning experiences. Moreover, we assess the condition of infrastructure, including heating systems and facility maintenance, to better understand how these elements collectively impact the health and learning environments.

The data amassed from these interviews serves as the foundation for identifying areas of improvement, highlighting successful initiatives, and formulating actionable recommendations. By collaborating with local stakeholders, educational authorities, and community members, our goal is to propose strategies that foster healthier energy practices while enhancing the learning atmosphere.

In essence, this survey seeks to shed light on the integral connection between health and energy use within schools across the regions. By equipping schools and communities with insightful data, we aspire to promote sustainable energy practices that contribute to improved health outcomes, enhanced educational experiences, and a brighter future for students and educators alike.

TABLE 16. Presence of a Water Program in Eco clubs

Regions	Yes	No	Total	Percentage of "Yes"	Percentage of "No"
Forest steppe	3	7	10	30%	70%
Steppe	6	1	7	86%	14%
Desert steppe	2	4	6	33%	67%

The data in "Table 14. Presence of a Water Program in Eco clubs" gives insights into the adoption of water programs in Eco clubs across various Provinces. A noticeable trend from the data is that the adoption rate varies significantly across these regions.

Dornod stands out with a high adoption rate, where a commanding 86% of its Eco clubs have integrated the water program. This suggests a significant emphasis on water conservation or related activities in the region, making it an exemplary model for other Provinces.

Conversely, Dundgobi and Khuvsgul show a more conservative approach, with only 33% and 30% of their Eco clubs, respectively, adopting the water program. It's worth noting that more than two-thirds of the clubs in these regions have yet to integrate this initiative, pointing to possible challenges or other priorities taking precedence in these areas.

Interestingly, there is no data available for Nalaikh, Umnugobi, and Uvs. This absence could suggest that the water program might be in its nascent stages in these regions, or perhaps there are other regional factors influencing this.

In summary, while some regions like steppe are leading in the adoption of water programs in their Eco clubs, others like Dundgobi and Khuvsgul lag behind. This disparity underscores the need for a deeper understanding of regional challenges, resources, and priorities to drive a more uniform and widespread adoption of such programs.

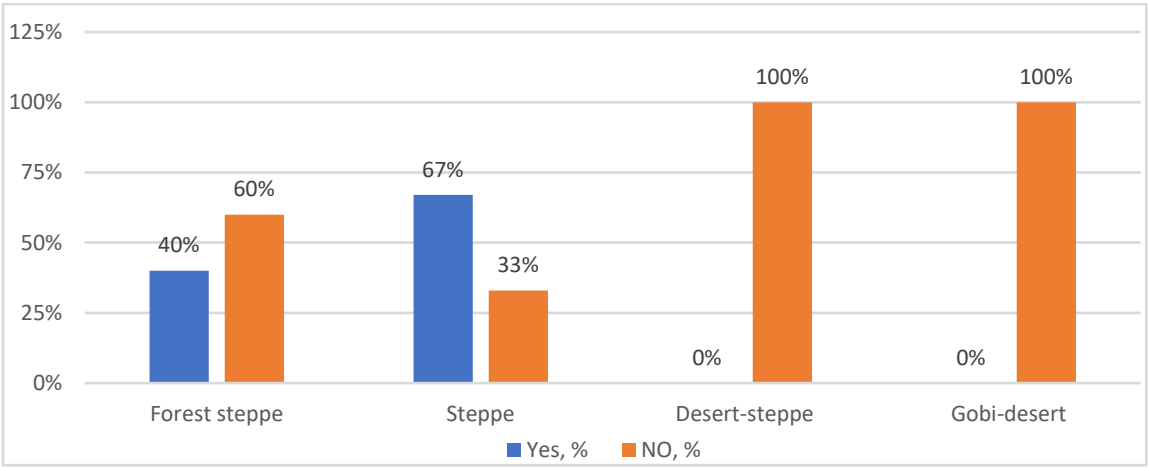

FIGURE 39. Presence or absence of independent heating boilers in schools across regions

The figure provides an overview of the distribution of independent heating boilers in schools across various Provinces (regions). Observing the overall trend, there is a notable disparity in the distribution of these heating systems. In the Dornod region, a majority (67%) of schools are equipped with independent heating boilers, signifying a balanced distribution between schools with and without these facilities. On the

contrary, in Dundgobi and Uvs, the absence of such boilers is stark, with 100% of the schools lacking them. Umnugobi similarly reflects this trend with its sole school not having a boiler. Khuvsgul presents a more balanced scenario with 40% of schools possessing boilers. Unfortunately, data for the Nalaikh region is absent, making it challenging to gauge its standing in this context. In summation, while some regions exhibit a fair distribution of schools with heating boilers, others display a complete absence, highlighting an uneven distribution of this essential facility across the regions.

TABLE 17. Distance of Heating Boilers from School

Distance from School	Description	Response Count	Percentage (%)
Forest steppe	Tap water runs out quickly	1	50%
	Tap water runs out quickly	1	50%
	Inside the school, designated stove room	2	100%
Steppe	20-30 meters	1	25%
	2 meters (4 heating boilers)	1	25%
	50 meters (7 heating boilers)	1	25%
	Connect with facility	1	25%
Desert-steppe	Connect with facility	1	100%

The data from Table 17 provides insights into the proximity of heating boilers to schools across different regions. A discernible trend is the variation in the placement of these boilers relative to the educational institutions. In the Dornod region, there's a noticeable diversity in boiler placement. The boilers are either positioned close (2 meters), moderately distant (20-30 meters), quite far (50 meters), or directly connected to the school. Each of these configurations accounts for a quarter of the total responses, suggesting a heterogeneous approach to boiler placement in this region.

Dundgobi, in stark contrast, displays a uniform approach. Here, the heating boiler is consistently integrated directly with the school facility, representing the entirety of the response count. This might indicate a preference or standard for having the heating systems in close proximity to ensure optimal heating.

Concurrently, there's a clear trend in Khuvsgul of situating boilers inside the school premises, specifically in a designated stove room. This indicates a preference for centralization and immediate access to the heating system.

In summary, the placement of heating boilers in proximity to schools varies across regions, with some favoring direct integration or close placement and others exhibiting a mix of near and far placements. This variability might reflect regional infrastructural differences, preferences, or specific challenges faced by each Province.

TABLE 18. Impact of Boiler Fumes on Health

Impact of Boiler Fumes	Air Pollution	Sometimes	Don't Know	Affects	Affecting	Does Not Affect	When No Wind, Smell Coal Fumes	Yes	Yes, Throat Is Dry	Harmful to Human Health	Ashes Are Thrown Openly	Affects Health
Forest- steppe		1		1			1	1		1		4
Steppe	1		1	1			1	2		6		6
Desert-steppe				1			1	1	1	4	1	4

Table 18 offers a comprehensive view of the perceived health and environmental impacts of boiler fumes across different Provinces (regions). A prominent trend emerging from the data is the widespread concern about the direct health effects of these fumes. Many respondents across all regions reported experiencing specific symptoms like a dry throat, suggesting a tangible impact on respiratory health. The link between boiler fumes and general health concerns is accentuated by a significant number of respondents in the Dornod region, who explicitly labeled these fumes as harmful to human health.

Another consistent observation is the environmental impact. A considerable number of respondents, especially in Dornod and Dundgobi, expressed concerns about the open disposal of ashes, which potentially exacerbates air pollution and health concerns. This environmental angle is further reinforced by those who associate boiler fumes directly with air pollution, though this sentiment is more prevalent in Dornod and Khuvsgul.

Interestingly, some respondents from all three Provinces pointed out that the absence of wind makes the smell of coal fumes more noticeable, suggesting that certain weather conditions might intensify the experience of pollution.

A few individuals indicated uncertainty or ambivalence about the impact of boiler fumes, highlighting that not everyone might be aware of or convinced about their potential harmful effects.

In summary, while there's a dominant apprehension about the health and environmental impacts of boiler fumes, the degree of concern and the nature of experiences vary across regions. The data underscores the pressing need for interventions, be it in the form of public awareness campaigns or infrastructural improvements to mitigate these effects.

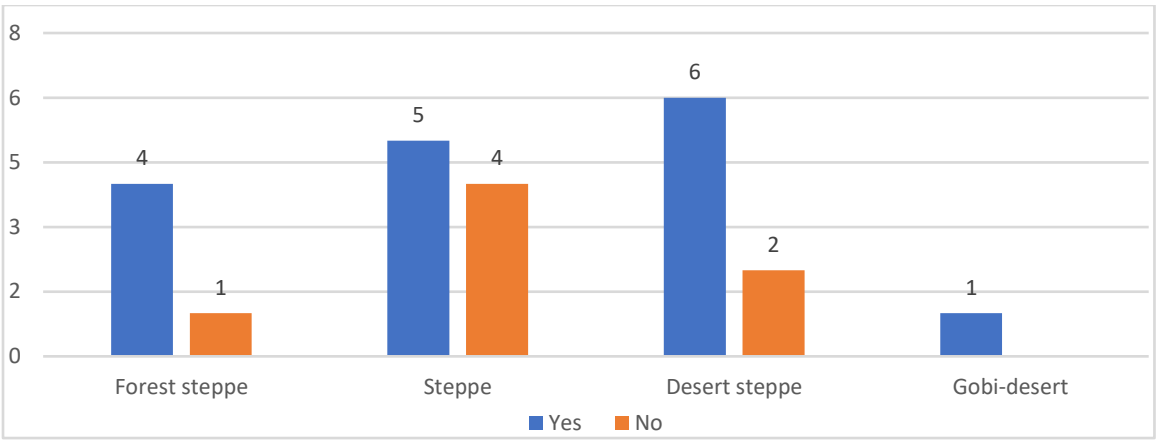

FIGURE 40. Heat Loss in School and Dormitory Building

Figure 40 sheds light on the prevalent issue of heat loss within school and dormitory buildings across various Provinces (regions). A clear trend that emerges from the data is that a majority of the institutions across different regions grapple with the challenge of heat loss. Dornod presents a nearly even split, suggesting that while many institutions face heat inefficiencies, a significant portion seems to manage it effectively. In contrast, Dundgobi showcases a pronounced inclination towards institutions experiencing heat loss, signaling a potential widespread issue in the region.

The data for Nalaikh remains absent, leaving a gap in understanding the region's status. Umnugobi and Uvs, though having limited data points, reveal that the surveyed institutions predominantly suffer from heat loss, hinting at possible infrastructural or systemic challenges in these regions. Khuvsgul, mirroring Dundgobi's trend, exhibits a higher number of institutions dealing with heat inefficiencies compared to those that don't.

Collectively, the data underscores a pervasive trend of heat loss in educational buildings across the surveyed regions. This consistent pattern suggests potential inadequacies in building insulation, outdated heating systems, or possibly structural challenges in the buildings themselves. Addressing these inefficiencies becomes paramount, especially in regions where students' learning environments might be compromised due to uncomfortable thermal conditions. Enhancing building practices, adopting modern insulation techniques, and updating heating systems might be necessary interventions to rectify these prevalent challenges.

TABLE 19. Power Cuts at Schools

Regions	Sometimes	Sometimes breaks	Lots of interruption	No interrupted	Yes	Yes sometimes	Smoke	No	
Forest steppe	2		2		1			5	
Steppe	1		1	1			3	6	
Desert-steppe		1	1	2	2		1	7	

Table 19 portrays the occurrence and nature of power cuts at schools across several Provinces (regions). A palpable trend emerging from the data is the notable prevalence of power interruptions across the surveyed regions. Dornod and Khuvsgul appear to be particularly impacted, with multiple institutions reporting varied frequencies of power cuts, from occasional disruptions to "lots of interruptions". The fact that some institutions in these Provinces confirmed the occurrence of power cuts without specifying their nature or frequency underscores the commonality of the issue.

Dundgobi also faces challenges, albeit with fewer institutions indicating severe disruptions. However, the presence of power cuts, even if only occasionally, can still be disruptive to the learning process. The lack of data for Nalaikh leaves its situation ambiguous, and remarkably, Umnugobi appears to be an outlier with no reported power cut issues.

Another aspect worth noting is the mention of "smoke" in Dornod during power cuts. This specific observation could indicate potential equipment malfunctions or other related concerns, suggesting not just interruptions in power but also potential safety issues.

In essence, the data reveals a predominant challenge of power stability across the surveyed schools in most regions. This trend emphasizes the necessity for enhancing electrical infrastructure or considering alternative power solutions to ensure a consistent and conducive learning environment.

TABLE 20. Frequency of Power Consumption in Case of Electricity Interruption

Regions	unexpected will not withstand interruptions and overloads	With stock motor	It automatically drops during the peak of the day	Also, whenever a natural phenomenon occurs, the electricity is cut off for 1-2 days	There is always electrical damage in the soum	It is repaired once a month	1-2 times a month	1-2 times a month and the electrical connection is outdated	Once a month	Uncertain	Occasionally	3-5 days in spring and summer	During the spring wind, there are frequent power outages	Interrupts during network operation
Forest steppe	-	1	-	-	-	1	-	-	-	-	-	-	1	-
Steppe	1	-	1	1	1	-	1	-	1	1	-1	-	1	-
Desert-steppe	1	-	1	1	-	1	1	1	1	-	-	1	-	1

Table 20 offers insights into the intricacies of power consumption interruptions experienced across different regions. A salient trend that surfaces is the vulnerability of several regions to power interruptions due to varied reasons, both infrastructural and environmental.

The majority of regions like steppe and Desert steppe report issues stemming from unexpected power loads, indicating potential challenges in the infrastructure's ability to handle sudden spikes in power demand. Automatic reductions in power during peak times, particularly noted in Dornod and Dundgobi, suggest systemic inadequacies or safety measures to prevent overloads. Environmental challenges, such as natural

phenomena, also emerge as significant disruptors, causing power outages for extended periods, notably in Dornod and Dundgobi.

Maintenance and infrastructural updates seem to be a recurring theme, with several regions citing monthly repairs due to electrical damages or interruptions due to outdated electrical connections. This is evident in steppe and desert steppe. Such frequent maintenance intervals point towards an aging infrastructure in dire need of modernization.

Seasonal variations, especially during spring, appear to exacerbate power interruptions. This trend is particularly evident in steppe, desert steppe and forest steppe, suggesting potential challenges in handling seasonal shifts in power demand or weather-related disruptions.

In contrast, gobi-desert stands out with minimal reported interruptions.

In essence, the data paints a picture of a power infrastructure across the regions that, while functional, grapples with multiple challenges ranging from outdated systems to environmental factors. Addressing these concerns would be pivotal in ensuring consistent power supply and, by extension, smoother operations of institutions like schools.

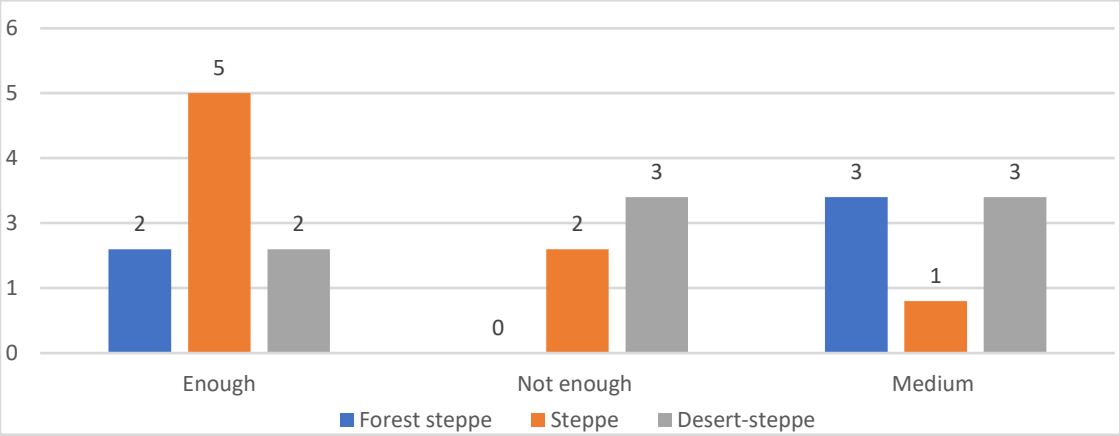

FIGURE 41. Availability of Centralized Heating System in Your Soum Center

Table 41 offers insights into the sufficiency of centralized heating systems across different regions. A discernible trend that emerges from the data is the variability in the perceived adequacy of these systems.

Steppe region stands out as a region where the majority of institutions believe the centralized heating system is sufficient, suggesting a relatively well-functioning infrastructure in place. Conversely, in desert steppe, there appears to be a prevailing sentiment of insufficiency, with a higher number of institutions expressing that the heating is "Not enough."

Desert steppe and forest steppe present a more balanced picture, with institutions spread across the "Enough" and "Medium" categories. This might indicate that while the heating systems in these regions are generally operational, there is room for improvement in terms of efficiency and coverage.

The gobi-desert region seems to lack institutions with a centralized heating system, based on the zero indication for the "Medium" category.

In essence, the data paints a nuanced picture of the centralized heating systems across regions. While some regions seem to benefit from efficient systems, others face challenges in providing consistent and adequate warmth. The presence of a "Medium" satisfaction level across several regions underscores potential areas

of improvement, emphasizing the need for consistent maintenance, upgrades, and potential expansion of these heating systems. Ensuring optimal warmth is pivotal, especially in educational settings, to foster a conducive environment for learning and overall well-being.

CONCLUSIONS

Mongolia, with its unique continental climate and socioeconomic structure, faces significant challenges due to climate change. As temperatures have risen by approximately 2.2°C over the past century, its impacts are felt across sectors. With nearly 30% of the population under 14 years old, children — the most vulnerable segment — are disproportionately affected.

On a socio-economic front, these climatic shifts and the ensuing increase in Dzud events threaten Mongolia's pastoral-dependent economy. The large-scale loss of livestock translates to dwindling income, food scarcity, and for many Mongolians, a disintegration of their traditional way of life. This could catalyze urban migration, placing undue stress on urban infrastructures.

There's a conspicuous absence of strategies in Mongolia's policy landscape addressing children's unique climate vulnerabilities. However, certain undertakings are bridging this gap. For instance, the "Children's Solutions on Climate Change" program, propelled by UNICEF Mongolia in partnership with the Swiss Committee for UNICEF, fosters youth leadership in climate and environmental matters[48].

It becomes evident that Mongolia's diverse regions are experiencing shifting drought patterns, underscoring the pervasive influence of climate change. Some regions are enduring escalating drought conditions, while others show relatively consistent patterns.

Overall, the observed storm patterns across these Mongolian regions, when viewed through the lens of climate change, underscore the altered and often intensified weather events. These changes, whether they're in the form of increased storm occurrences, shifting seasonal patterns, or heightened unpredictability, echo the global narrative of the profound and complex impacts of climate change on local weather systems.

As we observed many respondents were unaware of the processes driving climate change and the role of drivers and main factors that have in causing climate change. Although many respondents knew that climate change is primarily driven by human activities, they lacked a basic understanding of its causes and effects. So there is a big need for an awareness-raising campaign built on high-level reliable information sources and easy readable common language.

Water, Sanitation, and Hygiene (WASH)

This study unequivocally demonstrates the profound impact of climate change on children's access to water, sanitation, and hygiene services. Consequently, it underscores the imperative to ensure that every child has access to safe drinking water, handwashing facilities, laundry services, cleaning amenities, and reliable sanitation facilities. The research draws several crucial conclusions:

1. Despite existing government policy documents and laws related to water, sanitation, and hygiene services, the regulations specifically addressing children's needs, adaptation to climate change, and mitigation of negative impacts are inadequately reflected, leading to poor implementation.
2. The study emphasizes every child's right to live and learn in a healthy and safe environment, asserting the positive influence of water, sanitation, and hygiene conditions on children's health and

[48] FAO, 2018, Paris Agreement

educational quality. However, it reveals that the current conditions in local schools and kindergartens fall below the appropriate level, with progress being slow.

3. Climate change intensifies the frequency of sudden natural disasters, causing damage to water supply and sanitation facilities, environmental pollution, and the spread of water-borne intestinal infectious diseases. The figures indicate a probable increase in such occurrences.

4. Scientists predict the melting of ice and snow cover feeding water sources, resulting in a loss of the water balance in river basins and increased aridity. A concerning 77% of Mongolia's territory has been decertified and degraded, with 362 rivers, streams, lakes, reservoirs, springs, and wells drying up by 2022. The research highlights the drying up of water sources in 11 out of 19 target areas, necessitating measures to prevent, reduce, and adapt to climate change and environmental hazards.

5. The primary consequences of climate change's adverse effects include water, soil, and air pollution leading to diarrheal diseases, with some parts of the country experiencing catastrophic pollution levels negatively impacting human health.

6. Over the past decade, research indicates a rise in the incidence of intestinal infectious diseases in Mongolia. Moreover, 39% of the surveyed children face challenges accessing water, sanitation, and hygiene services due to climate change and natural disasters, 25% have suffered from intestinal infections, and 34% consume untreated raw water.

7. In 26% of the targeted 19 sub-districts, there are no pit latrines, and 60% of the pit latrines in 6 sub-districts are at risk of being flooded, posing threats of soil and water pollution and the spread of infectious diseases.

8. Drinking water quality research reveals that 91% of the 56 deep wells and water points in the 5 target provinces fail to meet the MNS0900:2018 drinking water standards. Children using water not meeting these standards is identified as a cause of intestinal infections and other underlying diseases, adversely affecting children's health.

9. The survey shows that 78% of kindergartens, schools, and health centers in 20 sums of the 5 provinces targeted lack plans to provide children with water, sanitation, and hygiene services during climate change or natural disasters, emphasizing the urgent need for public policy and political commitment to enhance public health, emergency response, and climate change adaptation.

Education

Climate change has led to an escalation in the frequency of disasters such as droughts, floods, and other environmental challenges, significantly impacting the education sector. The implications are particularly pronounced in various regions:

1. In rural areas, the closure and damage of roads due to disasters have resulted in delayed school attendance. Specifically, 64% of students in steppe and desert regions, as well as 54% in the Gobi desert region, and 41% in the desert region are affected. The increased frequency of Dzud, a winter weather phenomenon, has caused 54% of delays in the desert region, with 57% occurring in field areas.

2. A significant number of students (51%) in the steppe region, 53% in the Gobi desert region, and 69% in the barren steppe region report that climate-induced changes force herders to migrate across provinces, impacting their education. Additionally, 48% of students in forest regions note a lack of

parental care and support for those staying in boarding houses or with relatives, compared to 71% in the steppe, Gobi desert, and desert regions.

3. The aftermath of climate-related disasters results in more than 50% of students dropping out of school across regions. In the desert region, a staggering 74% of surveyed students are aware of such cases.

4. Students (61-74%) believe that the death of animals and the decrease in natural resources due to climate-related disasters contribute to depression among children. This indirect impact of climate change particularly affects the psychological well-being of students from pastoral families.

5. Infrastructural facilities, including school buildings, electrical systems, and heating systems, are at risk during strong winds, sudden floods, and yellow dust storms. Such vulnerabilities pose a serious threat to the continuity of education.

6. To mitigate the impact of climate change on education and promote sustainability, there is a need to enhance the curriculum. This involves incorporating content that reflects local characteristics and adaptive coping strategies to equip students with the knowledge and skills necessary to navigate the challenges posed by climate change.

Climate change, energy and health

1. In terms of energy, in the Long-term development policy of Mongolia "VISION-2050"(Objective 4.2), reflected clearly that Sun, wind, water, biomass, liquid and gas fuels, geothermal heat, fuel cells and other sources will be used in accordance with the power balance of sources etc.

2. According to findings, respiratory diseases among children are one type of evidence of the direct impact of dust and air pollution caused by climate change -related dryness on children's health. For example, in the gobi-desert region, in November, December and January, when coal is used the most, Nitrogen dioxide in the air is the highest 0.032-0.092mg/m ^{3}, Sulfur gas 0.054-0.064 mg/m ^{3}, Dust (PM10) 0,289-0.541 мg/м^3 in January, February and March, respectively. Getting dusty level is high in those months indicating less precipitation and less snow cover during the winter months. In November, December, January, February and March with the above pollution, the number of respiratory (asthma, bronchitis, sore throats and other respiratory diseases) diseases among the children is the highest, ranging from 2868 to 4287. It can be seen from this that as the amount of pollution in the air increases, respiratory diseases of children also increase.

- Heating loss is common especially in soum level. This highlights the need for better infrastructure to ensure efficient heating, especially in colder climates. There is a need for building renovations and energy-efficient improvements.
- An evident concern that emerges from the findings is the predominant dependence on coal for heating across most regions. This underscores the importance of adopting cleaner and more sustainable heating solutions to reduce environmental pollution and improve indoor air quality.
- The data also shed light on power supply issues, with power cuts affecting schools and daily activities in some regions. Interruptions in the power supply can disrupt heating systems.
- Certain areas face distinctive challenges. For instance, in Nalaikh district, the proximity of a slaughterhouse, Orgio chicken farm, and garbage dump to residential areas results in a continuous odor of chicken droppings, animal slaughter, and burning garbage. Yellow dust generated by brick

factories, briquette production, and cement plants combines with white-yellow dust carried by spring and autumn winds, affecting air quality in various regions.

3. Climate change risk to children, impacting their nutrition. There are herder children who into the role of household heads with responsibilities of their younger siblings due to harsh environmental conditions such as severe droughts and unforgiving winters when parents distant journey for livestock. Children in child-headed households and vulnerable families often arrive at school without having had breakfast. Current lunch program, catering to grades 1-5, also a proactive approach by parents towards younger children's nutrition is good.

4. Also, climate change risk to child safety already. For instance, the scorching summer heat introduces yet another set of risks. Children, seeking respite from the heat, frequently venture to rivers and lakes for cooling off through swimming and diving. Tragically, such pursuits sometimes turn fatal. Only, the year 2022, 23.2% of the total 85 individuals who lost their lives in water-related accidents were children.

RECOMMENDATIONS

It becomes evident that Mongolia's diverse regions are experiencing shifting drought patterns, underscoring the pervasive influence of climate change. Some regions are enduring escalating drought conditions, while others show relatively consistent patterns.

1. Effective monitoring and proactive interventions will be paramount to ensure sustainable water resource management and provide requisite support to communities grappling with these changing conditions.
2. Establishment of institutional and governance mechanisms on climate change; the development of climate change policy and integrated planning; climate change mitigation measures and incentives; adaptive responses and the building of resilience; research and capacity building; climate finance; and public participation.
3. Identify strategic climate change risks and support the mainstreaming of climate change considerations and actions to respond to these risks across relevant government policies, plans and strategies across all Ministries,
4. Enhance adaptive capacity by organising activities, projects and programmes that are aimed at reducing vulnerability and building resilience to climate change;

Water, Sanitation, and Hygiene (WASH)

After a considerable examination of the impact of climate change on children's water, sanitation, and hygiene, the following clear and actionable recommendations are put forth:

1. Enhance Legal Environment and Coordination: Improve the legal framework and foster inter-sectoral coordination and cooperation in the domain of water, sanitation, and hygiene to create a more effective and responsive system.

2. Align with Sustainable Development Goals and National Policies: Increase access to water, sanitation, and hygiene in kindergartens and schools, aligning efforts with the UN Sustainable Development Goals 2030, Mongolia's Vision 2050 policy documents, and other applicable laws, rules, and regulations.

3. Develop Comprehensive Financing Plans: Formulate long-term, medium-term, and short-term financing plans to ensure sustainable support for initiatives aimed at enhancing water, sanitation, and hygiene services for children.

4. Ensure Climate-Resilient Infrastructure: Safeguard children's health by guaranteeing that local kindergartens and schools in the province possess reliable water supply and sanitation facilities that are resistant to the impacts of climate change.

5. Adopt Appropriate Technologies: Select and implement suitable technological solutions to proactively prevent, mitigate, and adapt water supply and sanitation facilities to climate change and environmental hazards.

6. Build Personnel Capacity: Prepare personnel for the stable and reliable operation of regional and local infrastructure, emphasizing training and capacity building for effective maintenance.

7. Study Climate-Related Health Impacts: Undertake comprehensive studies to evaluate the relationship between climate change and the incidence and health implications of children's enteric diseases.

8. Develop Emergency Preparedness Plan: Create and implement a plan to provide children with essential water, sanitation, and hygiene services during climate change and natural disasters across all 21 provinces, adhering to the guidelines of the World Health Organization. These recommendations collectively aim to fortify the resilience of water, sanitation, and hygiene systems, ensuring the well-being of children in the face of climate-induced challenges.

Education

The findings from education research underscore the necessity for comprehensive strategies to address the intersection of climate change and children's education. The data illuminates the pervasive consequences of climate-related disruptions, posing challenges to accessing quality education and jeopardizing children's well-being. This emphasizes the critical need to fortify climate change resilience in educational infrastructure, integrate climate awareness into curricula, and foster community engagement.

As the impacts of climate change intensify, collaborative efforts among governments, educational institutions, NGOs, and communities become imperative to implement targeted measures safeguarding children's education. Prioritizing adaptation, mitigation, and capacity-building initiatives is crucial for establishing a more resilient education system, ensuring children's rights to learn, grow, and thrive while comprehending, responding to, and mitigating climate change.

- Climate-Resilient Infrastructure: Enhance the resilience of educational facilities through investments in climate-resilient infrastructure planning. This ensures that schools and kindergartens can endure extreme weather events like floods and storms without significant disruptions.

- Curriculum Review and Improvement: Collaborate with educators, climate experts, and curriculum developers to review and update educational content, reflecting current and future climate

challenges. Enrich the curriculum with local climate-related examples to ensure cross-curricular coherence.

- Research and Data Collection: Conduct regular data collection and analysis to monitor the impact of climate change on children's education. This approach enables the development and implementation of evidence-based policies and interventions to address emerging challenges.

Climate Change, Energy and Health

It is desirable to implement of the Long-term development policy of Mongolia "VISION-2050“ in timely and efficient manner.

1. The following measures should be intensified on energy.

- **Transition to Cleaner Energy Sources:** Encourage the gradual transition from coal and other polluting heating sources to cleaner alternatives, such as renewable energy systems (solar, wind, geothermal) or electric heating. This will help reduce air pollution, greenhouse gas emissions, and health risks.
- **Invest in Energy Efficiency:** Improve the energy efficiency of school buildings and residential areas by implementing insulation upgrades, sealing cracks in walls and windows, and modernizing heating systems. Energy-efficient buildings require less heating, which can lower costs and environmental impact.
- **Support Infrastructure Upgrades:** Allocate funds for infrastructure upgrades, including the installation of modern heating systems. Focus on centralizing heating systems and optimizing their efficiency.
- **Implement Air Quality Monitoring:** Set up air quality monitoring systems to track indoor and outdoor pollution levels. This data can inform policy decisions, help identify pollution hotspots, and measure the effectiveness of mitigation efforts.
- **Support Research and Innovation:** Invest in research and innovation to develop and promote new technologies and strategies for clean and efficient heating. This includes exploring locally available resources for alternative heating fuels.

2. With regard to schools, kindergarten, dormitories and hospital: Implement the indoor air quality management approach for kindergartens, schools, and hospitals through a combination of technical and behavior change interventions. Include in school health programs about the negative effects of air pollution, yellow dust, and weed, and how to protect yourself from them; and improve the knowledge and attitude of parents through children. Support the child's immunity by enriching children’s food with high-quality and vitamin-rich food. Improve the education of medical staff, and avoid prescribing antibiotics, especially for mild colds.

3. With regard to parents: Cleanse the lungs by taking the children to fresh air regularly, Support the children’s immunity by eating nutritious and vitamin-rich food, Support indoor air through planting flowers and plants at home and using an air purifier, Parents should improve their knowledge and education on how air pollution, weed and yellow dust affect children’s health and how to prevent them.

4. With regard to settlement area: The industries such as construction material production and meat processing plants needs to be exclusively separated from human settlement areas.

The abrupt transition to middle school at grade 6 brings about significant changes, including multiple teachers, lack of lunch provision, and diminished parental attention. This sudden shift often leads to psychological disturbances among 6th graders. Ideally, extending the lunch program to all grade levels

would be optimal. If this isn't feasible, prioritizing 6th graders' inclusion in the program would provide essential support.

To enhance parental attention and attitudes towards children, it is recommended to implement robust information and awareness campaigns. These campaigns would focus on cultivating parental attentiveness and nurturing positive parental attitudes toward their children.

ANNEX 1. Selection of provinces and soums that are able to represent the eco-region

Ecoregion	Province, soum
Desert steppe	Davst, Uvs
	Zuungobi, Uvs
	Naranbulag, Uvs
	Umnugobi, Uvs
	Khovd, Uvs
	Ulaangom, Uvs
	Khuld , Dundgobi
	Luus, Dundgobi
	Saintsagaan , Dundgobi
Forest steppe	Tsagaanuul, Khuvsgul
	Ulaanuul, Khuvsgul
	Alagerdene, Khuvsgul
	Galt , Khuvsgul
	Erdeneburen, Khuvsgul
	Murun , Khuvsgul
	Bayanuul, Dornod
	Bayandun, Dornod
Gobi Desert	Gurvantes, Umnugobi
Steppe	Matad , Dornod
	Khalkhgol, Dornod
	Khulunbuir, Dornod
	Kherlen , Dornod
	Adaatsag, Dundgobi
	Nalaikh

ANNEX 2. Data collection

№	Province/soum	**Survey**										Individuals Questionary		Group discussion									
		Students						Adults				Adult		Adult				Students					
		Primary		High		Junior		Parents		Teachers and officials		WASH related officials		Parents		Teacher and soil specialist		Primary		High		Junior	
		Target	Covered	Target	Covered	Target	Covered	Target	Covered	Target	Covered	Target	Covered	Target	Covered	Target	Covered	Target	Covered	Target	Covered	Target	Covered
Uvs province																							
1	Davst	17	15	13	10	0	0	6	10	5	4		39	6	6	5	3	4		4	8	4	8
2	Zuungobi	41	41	34	34	18	18	6	6	5	5		104	6	2	5	1	4	4	4	5	4	1
3	Naranbulag	50	48	35	35	14	10	6	2	5	3		98	6	4	5		4	4	4	3	4	1
4	Umnugobi	65	65	61	60	40	40	6	4	5	4		173	6	10	5	2	4	4	4	3	4	3
5	Khovd	40	40	33	33	13	12	6	4	5	4		93	6		5		4		4		4	
6	Ulaangom 1st school	219	219	160	160	123	120	6	6	5	5		510	6	1	5		4	2	4		4	
Total		432	428	336	332	208	200	36	32	30	25		1017	36	23	30	6	24	14	24	19	24	13
Khuvsgul province																							
7	Tsagaanuul	88	67	72	72	37	37	6		5			176	6		5		4	4	4	4	4	4
8	Alagerdene	20	20	25	20	16	16	6	6	5	5		67	6	5	5	5	4	4	4	4	4	4
9	Ulaanuul	44	44	42	42	60	60	6	6	5			152	6		5	4	4	4	4	4	4	4
10	Galt	71	71	57	57	38	38	6	6	5	5		177	6	5	5	5	4	4	4	4	4	4
11	Erdenebulan	48	24	32	25	19	19	6		5	5		73	6	6	5	6	4	4	4	4	4	4

12	Murun, Gurvanerdene school	128		86		50		6		5				6		5	2	4		4		4	
Total		399	226	314	216	220	170	36	18	30	15	0	645	36	16	30	22	24	20	24	20	24	20
Dornod province																							
13	Bayanuul	78	78	55	55	23	39	6	6	5	5		183	6	6	5	4	4	3	4	4	4	4
14	Bayandun	40	40	35	35	17	17	6	6	5	5		103	6		5		4	4	4	3	4	4
15	Matad	35	35	20	20	0	0	6	6	5	5		61	6		5		4		4		4	
16	Khalkhgol	43	44	25	25	11	12	6	6	5	5		92	6	6	5		4	4	4	2	4	3
17	Khulunbuir	29	29	17	23	0	0	6	6	5	5		63	6		5		4		4		4	
18	Kherlen , Khanuul	135	140	97	88	64	64	6	6	5	5		303	6	4	5	2	4		4		4	
Total		360	366	249	246	115	132	36	36	30	30	0	805	36	16	30	6	24	11	24	9	24	11
Dundgobi																							
19	Khuld	18	18	11	11	0	0	6	6	5	5		40	6	6	5	5	4	5	4	7	4	
20	Luus	12	10	10	10	0	0	6	6	5	5		31	6		5		4		4		4	
21	Adaatsag	33	33	17	17	0	0	6	6	5	5		61	6		5		4	3	4	3	4	6
22	Delgertsetseg	16	7	9	9			6		5			32	6	3	5		4		4		4	
23	Saintsagaan	0	10	38	38	33	33	6	6	5	5		92	6	6	5	6	4		4	3	4	3
	Gurvan tes	82	79	53	50	23	23	6		5	4		156	6	5	5	3	4		4		4	
Total		161	157	138	135	56	56	36	24	30	24	0	412	36	20	30	14	24	8	24	13	24	9
Umnugobi																							
25	Nalaikh, Erdmiin urguu, Ulaanbaatar	135		94		35		6		5				6		5		4		4		4	
Total		1487	1177	1131	929	634	558	150	110	125	94	0	2879	150	75	125	48	100	53	100	61	100	53
Target		3527										0		575									
Survived		2868										2879		290									

ANNEX 3. Monthly incidents of Yellow Dust Storms by region/province

Source: National agency for meteorology and environmental monitoring, Mongolia

Location	Year	Month	No. of Stormy Days	Key Observations
Dalanzadgad	2018	Jan-Apr	1 to 10 days	Peak in April. Decline towards year-end.
	2019	Apr-May	6 days	Fewer days, but peaks in these months.
	2020	May	4 days	Spread out occurrences throughout the year.
	2021	Mar	11 days	Major surge in March.
	2022	Apr	10 days	Notable peak in April.
Mandalgobi	2018	Mar-Apr	4 days	Consistent stormy days in these months.
	2019	Apr	5 days	Peak in April.
	2020	May	11 days	Atypical surge in May.
	2021	Mar	7 days	Decrease after this month.
	2022	-	1-2 days	Low occurrences.
Choibalsan	2018-2019	Apr	1 to 4 days	Low occurrences overall.
	2020	Apr	5 days	Peak in April.
	2021	Mar	4 days	Surge in March, then decrease.
Murun	2018	Mar	8 days	Significant peak in March.
	2019	Apr	5 days	Another peak in April.
	2020-2022	Feb-21	1 to 4 days	Generally low, except in Feb 2021.
Ulaangom	2018	May	5 days	Peak in May.
	2019	May	3 days	Consistent stormy days in May.
	2020	May	3 days	Another peak in May.
	2022	June	4 days	Notable peak in June.

ANNEX 4. Research team

Name	Scientific degree	Specialization	Tasks assigned	Position
Dashbal BURMAA	MSc	Ecologist	Overall management of the project	Team leader
Densambuu BULGAMAA	Ph.D.	Environment management	Climate changes	Team member
Batjargal ALTANTUUL	MSc	WASH	WASH	Team member
Nasmrai ZOLZAYA	MSc	Social science	Gender and child protection	Team member
Binderiya ODONCHIMEG	MSc	Education	Child education	Team member
Lumandas Cubelo EVELYN	MSc	Human ecology	International level of climate change	Team member

ANNEX 5. List of government policy

№	State policy document name and year of approval	Regulation	Legal opinions and comments
1	Annex to Resolution No. 48 of 2010 of the Great Khural of Mongolia MONGOLIA'S NATIONAL SECURITY PERCEPTION	3.5. Safety of the environment Maintaining the balance of the environment, protecting water resources, mitigating the negative effects of climate change and land degradation, preventing the loss of biological diversity, and reducing the risk of environmental pollution, natural hazards, and disasters are the basis for ensuring a healthy human existence and the safety of the environment. and. 3.5.2. Reducing the consequences of climate change and land degradation 3.5.2.1. Adaptation to climate change and desertification, policy determination to mitigate negative consequences, capacity building, creation of a national structure to coordinate the implementation of the policy, wide use of international financial mechanisms for the implementation of activities, and measures to ensure the participation of all parties.	n this document, it is stated that climate change is the basis for ensuring the healthy existence of people and the safety of the environment. It is reasonable to say that it is a state policy that conforms to the content of the norm. Specifically, there is a policy to create conditions for living in a healthy and safe environment by reducing the negative consequences of climate change. In addition, it is a legally significant policy document that aims to implement the policy and implement it as a policy in Mongolia starting from 2010 to determine the state policy to adapt to climate change and take relevant measures.
2	2011 of the Great Khural of Mongolia Appendix to Resolution No. 10 FOREIGN POLICY VIEWS OF MONGOLIA	On the other hand, the rate and level of development of countries are increasingly different, and unemployment and poverty are not decreasing in countries with weak and fragile economies. Attempts to acquire nuclear weapons continue in some countries and regions, and tensions are not easing. In addition, threats and challenges such as climate change, environmental degradation, international terrorism, human and drug trafficking, and the spread of highly infectious diseases will increase. - supporting efforts of the international community to adapt to climate change, reduce its negative consequences, protect the environment from degradation, and prevent the spread of acute infectious diseases.	More than 10 years ago, the issue of adaptation to climate change was identified at the state policy level in Mongolia's foreign policy concept, and it has become the basic source of measures to be taken in current state policy documents. Therefore, it is necessary to conduct a legal analysis of the current government policy documents, so the regulations on adaptation to climate change have been analyzed based on the following sources.
3	DECISION OF CONGRESS OF MONGOLIA May 13, 2020 Number 52 APPROVAL OF THE LONG-TERM DEVELOPMENT POLICY OF MONGOLIA "VISION-2050"	LONG-TERM DEVELOPMENT POLICY OF MONGOLIA, according to Appendix No. 2050 of Resolution No. 52 of 2020 of the Great Khural of Mongolia ACTIVITIES TO BE IMPLEMENTED IN 2021-2030 WITHIN THE FRAMEWORK OF THE LONG-TERM DEVELOPMENT POLICY OF MONGOLIA "VISION-2050", according to Appendix No. 3 "VISION-2050" LONG-TERM DEVELOPMENT POLICY OF MONGOLIA CONTROL-ANALYSIS AND EVALUATION CRITERIA INDICATORS AND ACHIEVEMENT LEVELS, respectively approved and the document is valid.	In each of these documents, how policies aimed at adapting to climate change are reflected in the issues of children's living, learning, and living in a healthy and safe environment, and legal conclusions and explanations were made.
4	Appendix 1 of Resolution No. 52 of 2020 of the Great Khural of Mongolia "VISION-2050" LONG-TERM DEVELOPMENT POLICY OF MONGOLIA	Low-carbon, productive and inclusive green development Goal 6.4 Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change. 3. Strengthen the ability to adapt and withstand climate change and reduce potential risks. Phase II (2031-2040): Fostering smart consumption, productive manufacturing, and increasing domestic and external sources of green climate finance. 1. Eco-friendly, intelligent use with less waste, and productive production will be developed to increase resource savings and returns. 2. Within the framework of the new agreement on climate change, the national emissions of greenhouse gases will be reduced and carbon absorption will be increased. 3. The national program to reduce the negative	In this policy document, the issue of adaptation to climate change is included as a group and measures to be taken in stages until 2040 and 2050 are significant as a document of the state's basic policy. In this policy document, the goals for the phased implementation of adaptation to climate change are the provisions related to the creation of healthy and safe living conditions for the children we are talking about. In other words, it can be considered that the child is not a matter of regulation differently from other subjects, but it applies to the entire population, and therefore to all foreign and domestic people living in the territory of Mongolia. This is because

		consequences of climate change and reduce the risk of disasters will be updated and implemented. Phase III (2041-2050): A period of continuous strengthening of the capacity to adapt to climate change and improvement of sustainable production and consumption. 1.Promote environmentally friendly sustainable production and smart consumption and spread the idea of green development. 2. Measures to reduce climate change will be implemented and the gap between greenhouse gas emissions and absorption will be zero. Sustainable agricultureObjective 8.3. Agriculture will be developed as a leading economic sector that is environmentally friendly, adapted to climate change, able to bear risks, meets social development trends, needs and requirements, has responsible, high productivity, and sustainable production. Phase I (2021-2030): Intensification of resource utilization and economic circulation of agricultural production, transition from quantity to quality and productivity. 1. Adhering to the principles of green economy in agricultural production, we will strengthen the ability to adapt to climate change and bear risk, and develop a smart system based on insurance, registration, and information. Modern solution Stages of goal implementation and results Phase I (2021-2030): The period of providing healthy and safe living conditions for citizens and creating responsible and economical consumption. 1. The value of the ecosystem will be determined and the sustainable management of natural resources adapted to climate change will be established. 6. Strengthen the ability to overcome the negative effects of climate change, early detection of disasters, and resilience. Phase III (2041-2050): A period of low greenhouse gas emissions and environmental balance. 1. Reduce greenhouse gas emissions to the lowest level. 2. A system capable of overcoming climate change will be improved. Mongolian nomadic civilization Phase I (2021-2030): A time to preserve the nomadic heritage and spread customs and traditions. 4. Children's cultural heritage and development center will be established. Family Phase I (2021-2030): Family-friendly policies are implemented and the population is stable a period of promoting growth and human development. 2. Increase the participation of parents in supporting children's development, talent, skills, technical thinking, and social maturity. Health Phase I (2021-2030): A period of reform of the health care quality and access system. 9. Factors affecting preventable maternal and child mortality have been reduced, and the mortality rate of mothers, infants and children under 5 years has decreased. Genealogy of Mongolian people 3.Prevents blood clots and improves early diagnosis of children with genetic diseases and birth defects. 3. To prevent the birth of children with genetic diseases and mental disabilities, and to develop a system of clinical and genetic control. People-centered city Phase I (2021-2030): A time to improve the quality and accessibility of social infrastructure and increase citizen participation. 1. Increase the capacity and accessibility of social service institutions (schools, kindergartens, health, physical education, sports organizations, youth development centers, child protection centers, orphanages, etc.)	the long-term policy document of the public policy is the basic policy of adaptation to climate change. The policy of adapting to climate change until 2030 has been included by making the principles of green economy a management. It is an agricultural policy to adapt to climate change. In 2021-2030, the issue of ensuring healthy and safe living conditions for citizens has been made a policy, although about 20% of the time to achieve this goal has passed, but it can be concluded that the policy implemented in this regard is still unclear. Because it is an expression of the lack of a legal source that states that a favorable legal environment for citizens, including future generations, to live in a healthy and safe environment has begun to form. In the period from 2041 to 2050, the goal of reducing greenhouse gas emissions to the lowest level and improving the system with the capacity to overcome climate change is included, which means that the system for adapting to climate change has been created before 2041. In this policy document, one of the important policies aimed at ensuring children's rights is to establish a child development center in 2030 and to increase the participation of parents in supporting children's development, talents, skills, technical thinking, and social maturity. However, there is a lack of policy integration with climate change adaptation. Several important issues related to children's health are covered, but the policy is not considered in a coherent manner in terms of how to adapt to climate change. It is important to increase the number of schools, kindergartens, health, physical education and sports organizations, youth development centers and child protection centers directly related to children's rights. However, the policy of how to adapt to climate change, which is a pressing issue today, has been neglected.
5	Appendix No. 2 of Resolution No. 52 of 2020 of the Great Khural of Mongolia ACTIVITIES TO BE IMPLEMENTED IN 2021-2030 WITHIN THE LONG-TERM	Low-carbon, productive and inclusive green development Goal 6.4 Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change. 3. Strengthen the ability to adapt and withstand climate chang Objective 6.4. Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate	In 2011, Parliament Resolution No. 02 on "Approving the National Climate Change Program" was approved, but in 2021, the Act was invalidated by Parliament Resolution No. 89. Measures to implement this repealed legal act in two main phases until 2021 include strengthening national capacity to mitigate and adapt to

	DEVELOPMENT POLICY OF MONGOLIA "VISION-2050"	change. 6.4.11. The national program for adaptation to climate change will be approved and implemented. 6.4.12. Investigate and form the insurance system for risks caused by climate change. 6.4.17. Implement green projects and programs to develop renewable energy, reduce greenhouse gas emissions, reduce waste, and increase the efficiency of resource use through the United Nations Green Climate Fund and other international financial methods. Modern solution 9.2.5. Create a forest ecosystem that is resistant to urban climate change, implement sustainable management of forest protection, and introduce a payment system for ecosystem services in stages. 9.2.8. Create a forest ecosystem resistant to climate change and implement sustainable management of forest protection and restoration based on new scientific and technological achievements. Target 9.2. It will create a healthy and safe living environment for citizens, maintain ecosystem balance, and become a city with a pleasant living environment with green technology that emits less greenhouse gases. Actions to be taken within the scope of the objectives 9.2.1. To establish the value and ecological capacity of the ecosystem of cities and towns, to assess the vulnerability and risk of climate change, to develop a comprehensive management system for disaster risk reduction, and to establish green zone ecological corridors. Health Phase I (2021-2030): A period of reform of the health care quality and access system. 9. Factors affecting preventable maternal and child mortality have been reduced, and the mortality rate of mothers, infants and children under 5 years has decreas 2.2.31. In order to teach the population to have a healthy life and acquire good life habits from childhood, healthy life habits will be included in the pre-school and general education programs. 2.2.32. The environment and conditions for children to learn good health and physical habits in their free time should be created outside the home and in the school environment. Objective 2.3. Active and creative citizens and families will be nurtured by supporting sustainable population growth. Actions to be taken within the scope of the objectives 2.3.1. Family-friendly employment and social security policies and programs will be implemented that support the birth of the population. 2.3.2.Strengthening the system of child rights, development and protection, implementing social security policies that are friendly to children and families, with equal opportunities, and multi-ethnic families ensuring equal rights and safety of children from families with disabilities, migrants, vulnerable and at-risk groups. 2.3.3. Based on a comprehensive study of Mongolian human development, the government implements policies and programs to protect the rights of the population, families, children, youth, workers, the elderly, people with disabilities, and migrants, to provide equal basic social services, and to support employment. , improve inter-sectoral policy coordination. Low-carbon, productive and inclusive green development Goal 6.4 Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change. 3. Strengthen the ability to adapt and withstand climate chang Objective 6.4. Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change. Actions to be taken within the scope of the objectives 6.4.1.Environmentally friendly, economical use and efficient advanced green technology will be supported by economic incentives. 6.4.2. Create and implement legal regulations for eco-payments aimed at reducing waste generation and putting waste into economic circulation. 6.4.3. Support and develop environmentally friendly and economical green ideas, attitudes and practices, such as sustainable green cities,	climate change, creating a legal framework, structure, organization, and management system, increasing public participation, implementation of possible measures to adapt to climate change and the sustainable implementation of activities to reduce the growth of greenhouse gas emissions will be started, but the issue of analyzing the implementation of the program has legal significance. Because on the basis of it, the reasons for the insufficient implementation are clarified and the issues that need to be implemented it is necessary to make it a state policy. It is commendable that the policy to improve the protection of forests resistant to climate change will be implemented in stages, but it is not clear what method and form it will be implemented. In addition, the policy emphasizing forest protection management is lacking in the fact that it neglects the coordination with the forest use policy. The provision "to create a healthy and safe environment for citizens to live in, to maintain the balance of the ecosystem, and to create a city with a pleasant living environment with green technology with low greenhouse gas emissions" is a legally significant policy aimed at creating a comfortable environment for children to live in a healthy and safe environment. However, it is important to clarify the way to implement it. These policies, which reflect children's health, are important for ensuring the rights of the next generation, such as education and health protection. policy. However, there is a lack of government policies to combine these issues with climate change adaptation. Therefore, it was concluded that there is an urgent need to clarify the issue of making children's health and education a state policy in order to adapt to climate change. As part of the child development policy, it is envisaged to create an environment for rural and low-income target groups in order to provide equal pre-school education, and to rely on their participation by empowering parents and caregivers. However, it is important to make child development a public policy, as it has not been integrated with climate change adaptation policies. In this policy, the implementation of family-friendly employment and social protection policies and programs, based on a comprehensive study of Mongolian human development, the government will protect the rights of the population, families, children, youth, workers, the elderly, people with disabilities, and migrants, and provide basic social services equally. , labor The implementation of employment promotion policies and programs is based on the legal possibility of dual regulation of climate change adaptation policies in the program. It has become a comprehensive policy aimed at mitigating climate change. However, it is reasonable to say that the policy of harmonizing the adaptation capacity of today's children and future generations to climate change has been abandoned. Therefore, the issue of how to adapt to climate change in terms of children's living, learning and living in a healthy and

		green buildings, green lifestyles, and resource conservation. 6.4.4. To reduce pollution and waste, to introduce environmentally friendly advanced techniques and technologies that save resources, and to support clean production and economical consumption with economic incentives. 6.4.5.Environmental Management MNS ISO14000 package standard introduction and green certification system will be supported and intensified, and correct production and consumption practices will be created. 6.4.6. State procurement will be gradually transferred to green procurement and a system will be created to support the private sector. 6.4.7. Implement the Paris Agreement, ensure the implementation of Mongolia's Defined Contribution (NDC) document, develop renewable energy, and develop energy, agriculture, construction, transportation, industry, and waste sectors. reduce greenhouse gas emissions. 6.4.8. Increase the absorption of greenhouse gases by afforestation, protection of peat bogs, rehabilitation of damaged areas, protection of plant cover and vegetation. 6.4.9. The ability to measure, calculate, inventory, estimate, and report greenhouse gas emissions of industries will be strengthened and digitized. 6.4.10. In the construction industry, domestic industries producing green and energy-efficient products will be supported and developed. 6.4.11. The national program for adaptation to climate change will be approved and implemented. 6.4.12. Investigate and form the insurance system for risks caused by climate change. 6.4.13.Strengthen the capability of early reporting and warning of dangerous natural and weather phenomena, and establish radar stations in at least five locations. 6.4.14. Environmentally friendly green projects and activities Establish and develop a joint national green financial system of the public and private sectors to finance the operation. 6.4.15. Strengthen the sustainable financial system that is friendly to the environment, introduce the principles of sustainable business in the economic and social sectors, and increase the environmental and social responsibility of enterprises. 6.4.16. The national green financial system (green bank, green bond, green exchange, green insurance) will be launched at a new stage to develop environmentally friendly sustainable production, cultivate and spread smart consumption, and finance environmentally and socially friendly projects and activities. 6.4.17. Implement green projects and programs to develop renewable energy, reduce greenhouse gas emissions, reduce waste, and increase the efficiency of resource use through the United Nations Green Climate Fund and other international financial methods. 6.4.18. Create and develop an electronic system for registration, movement control, registration and information of toxic and dangerous chemical substances. 6.4.19. To standardize the sorting of waste at the source, to establish a plant that does not have any harmful effects on the environment for recycling and energy production. 6.4.20. In Ulaanbaatar city, regional centers and other cities and towns, standard landfill facilities for centralized waste points and facilities for temporary storage and disposal of hazardous waste will be established in stages. 6.4.21.Environmentally friendly disposal and recycling of solid waste from the construction, road, and transportation industries will be supported and developed. 6.4.22. Expand and build new waste water treatment facilities and increase the number of people provided with standard sanitary facilities. 6.4.23. Implementation of a pilot project for environmentally friendly disposal of sludge from treatment facilities and household sanitation facilities, and dissemination of good practices.	safe environment should be made a state policy when implementing the relevant provisions..

6	Appendix No. 3 of Resolution No. 52 of 2020 of the Great Khural of Mongolia "VISION-2050" MONGOLIA'S LONG-TERM DEVELOPMENT POLICY MONITORING-ANALYSIS, EVALUATION CRITERIA AND ACHIEVEMENT LEVEL		
	Appendix 1 of Resolution No. 106 of 2021 of the Great Khural of Mongolia NEW RECOVERY POLICY		
7	Appendix No. 2 of Resolution No. 106 of 2021 of the Great Khural of Mongolia ACTION PROGRAM FOR THE FIRST PHASE OF IMPLEMENTING THE "NEW RECOVERY POLICY"	Five. Revival of green development 5.1. In order to make a significant contribution to mitigating climate change, the "Billion Trees" national movement will be effectively launched and a legal and legal environment will be created to support citizens, enterprises, and organizations. Objective 5.4. When implementing the policy of economic and industrialization revival, preserve the national traditional customs of nature protection and determine the standard model of green development in accordance with the global development trend. 5.4.1. To ensure the safety of the environment and to create healthy and safe living conditions for the population, implement environmental monitoring, analysis and evaluation in a sophisticated manner 5.4.2.Implementation of the national goal of mitigating climate change, reducing desertification and land degradation	It can be concluded that the implementation of the "Billion Trees" measure has been successful at the national level. However, the implementation of tree planting based on natural and social science research is highly related to the concept of creating favorable conditions for the environment for future generations, so decision makers should implement policies based on natural and social science.
	Appendix No. 3 of Resolution No. 106 of 2021 of the Great Khural of Mongolia " LIST OF DEVELOPMENT PROJECTS FOR THE IMPLEMENTATION OF THE ACTION PROGRAM OF THE NEW RECOVERY POLICY	FIVE. REVIVAL OF GREEN DEVELOPMENT 5.1. In order to make a significant contribution to mitigating climate change, the "Billion Trees" national movement will be effectively launched and a legal and legal environment will be created to support citizens, ent Climate change mitigation projects based on environmentally friendly advanced technologies /"Terbum Mod" national movement, project to establish a centralized eco-facility for general and hazardous waste/	It is possible to implement a project to create a centralized waste eco-facility that has already been implemented.

ANNEX 6. List of international policy

№	State policy document name and year of approval	Regulation	Legal opinions and comments
1	Annex to Resolution No. 48 of 2010 of the Great Khural of Mongolia MONGOLIA'S NATIONAL SECURITY PERCEPTION	3.5. Safety of the environment Maintaining the balance of the environment, protecting water resources, mitigating the negative effects of climate change and land degradation, preventing the loss of biological diversity, and reducing the risk of environmental pollution, natural hazards, and disasters are the basis for ensuring a healthy human existence and the safety of the environment. and. 3.5.2. Reducing the consequences of climate change and land degradation 3.5.2.1. Adaptation to climate change and desertification, policy determination to mitigate negative consequences, capacity building, creation of a national structure to coordinate the implementation of the policy, wide use of international financial mechanisms for the implementation of activities, and measures to ensure the participation of all parties.	n this document, it is stated that climate change is the basis for ensuring the healthy existence of people and the safety of the environment. It is reasonable to say that it is a state policy that conforms to the content of the norm. Specifically, there is a policy to create conditions for living in a healthy and safe environment by reducing the negative consequences of climate change. In addition, it is a legally significant policy document that aims to implement the policy and implement it as a policy in Mongolia starting from 2010 to determine the state policy to adapt to climate change and take relevant measures.
2	2011 of the Great Khural of Mongolia Appendix to Resolution No. 10 FOREIGN POLICY VIEWS OF MONGOLIA	On the other hand, the rate and level of development of countries are increasingly different, and unemployment and poverty are not decreasing in countries with weak and fragile economies. Attempts to acquire nuclear weapons continue in some countries and regions, and tensions are not easing. In addition, threats and challenges such as climate change, environmental degradation, international terrorism, human and drug trafficking, and the spread of highly infectious diseases will increase. - supporting efforts of the international community to adapt to climate change, reduce its negative consequences, protect the environment from degradation, and prevent the spread of acute infectious diseases.	More than 10 years ago, the issue of adaptation to climate change was identified at the state policy level in Mongolia's foreign policy concept, and it has become the basic source of measures to be taken in current state policy documents. Therefore, it is necessary to conduct a legal analysis of the current government policy documents, so the regulations on adaptation to climate change have been analyzed based on the following sources.
3	DECISION OF CONGRESS OF MONGOLIA May 13, 2020 Number 52 APPROVAL OF THE LONG-TERM DEVELOPMENT POLICY OF MONGOLIA "VISION-2050"	LONG-TERM DEVELOPMENT POLICY OF MONGOLIA, according to Appendix No. 2050 of Resolution No. 52 of 2020 of the Great Khural of Mongolia ACTIVITIES TO BE IMPLEMENTED IN 2021-2030 WITHIN THE FRAMEWORK OF THE LONG-TERM DEVELOPMENT POLICY OF MONGOLIA "VISION-2050", according to Appendix No. 3 "VISION-2050" LONG-TERM DEVELOPMENT POLICY OF MONGOLIA CONTROL-ANALYSIS AND EVALUATION CRITERIA INDICATORS AND ACHIEVEMENT LEVELS, respectively approved and the document is valid.	In each of these documents, how policies aimed at adapting to climate change are reflected in the issues of children's living, learning, and living in a healthy and safe environment, and legal conclusions and explanations were made.
4	Appendix 1 of Resolution No. 52 of 2020 of the Great Khural of Mongolia "VISION-2050" LONG-TERM DEVELOPMENT POLICY OF MONGOLIA	Low-carbon, productive and inclusive green development Goal 6.4 Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change. 3. Strengthen the ability to adapt and withstand climate change and reduce potential risks. Phase II (2031-2040): Fostering smart consumption, productive manufacturing, and increasing domestic and external sources of green climate finance. 1. Eco-friendly, intelligent use with less waste, and productive production will be developed to increase resource savings and returns. 2. Within the framework of the new agreement on climate	In this policy document, the issue of adaptation to climate change is included as a group and measures to be taken in stages until 2040 and 2050 are significant as a document of the state's basic policy. In this policy document, the goals for the phased implementation of adaptation to climate change are the provisions related to the creation of healthy and safe living conditions for the children we are talking about. In other words, it can be considered that the child is not a matter of regulation differently from other subjects, but it

		change, the national emissions of greenhouse gases will be reduced and carbon absorption will be increased. 3. The national program to reduce the negative consequences of climate change and reduce the risk of disasters will be updated and implemented. Phase III (2041-2050): A period of continuous strengthening of the capacity to adapt to climate change and improvement of sustainable production and consumption. 1.Promote environmentally friendly sustainable production and smart consumption and spread the idea of green development. 2. Measures to reduce climate change will be implemented and the gap between greenhouse gas emissions and absorption will be zero. Sustainable agricultureObjective 8.3. Agriculture will be developed as a leading economic sector that is environmentally friendly, adapted to climate change, able to bear risks, meets social development trends, needs and requirements, has responsible, high productivity, and sustainable production. Phase I (2021-2030): Intensification of resource utilization and economic circulation of agricultural production, transition from quantity to quality and productivity. 1. Adhering to the principles of green economy in agricultural production, we will strengthen the ability to adapt to climate change and bear risk, and develop a smart system based on insurance, registration, and information. Modern solution Stages of goal implementation and results Phase I (2021-2030): The period of providing healthy and safe living conditions for citizens and creating responsible and economical consumption. 1. The value of the ecosystem will be determined and the sustainable management of natural resources adapted to climate change will be established. 6. Strengthen the ability to overcome the negative effects of climate change, early detection of disasters, and resilience. Phase III (2041-2050): A period of low greenhouse gas emissions and environmental balance. 1. Reduce greenhouse gas emissions to the lowest level. 2. A system capable of overcoming climate change will be improved. Mongolian nomadic civilization Phase I (2021-2030): A time to preserve the nomadic heritage and spread customs and traditions. 4. Children's cultural heritage and development center will be established. Family Phase I (2021-2030): Family-friendly policies are implemented and the population is stable a period of promoting growth and human development. 2. Increase the participation of parents in supporting children's development, talent, skills, technical thinking, and social maturity. Health Phase I (2021-2030): A period of reform of the health care quality and access system. 9. Factors affecting preventable maternal and child mortality have been reduced, and the mortality rate of mothers, infants and children under 5 years has decreased. Genealogy of Mongolian people 3.Prevents blood clots and improves early diagnosis of children with genetic diseases and birth defects. 3. To prevent the birth of children with genetic diseases and mental disabilities, and to develop a system of clinical and genetic control. People-centered city Phase I (2021-2030): A time to improve the quality and accessibility of social infrastructure and increase citizen participation. 1. Increase the capacity and accessibility of social service institutions (schools, kindergartens, health, physical education, sports organizations, youth development centers, child protection centers, orphanages, etc.)	applies to the entire population, and therefore to all foreign and domestic people living in the territory of Mongolia. This is because the long-term policy document of the public policy is the basic policy of adaptation to climate change. The policy of adapting to climate change until 2030 has been included by making the principles of green economy a management. It is an agricultural policy to adapt to climate change. In 2021-2030, the issue of ensuring healthy and safe living conditions for citizens has been made a policy, although about 20% of the time to achieve this goal has passed, but it can be concluded that the policy implemented in this regard is still unclear. Because it is an expression of the lack of a legal source that states that a favorable legal environment for citizens, including future generations, to live in a healthy and safe environment has begun to form. In the period from 2041 to 2050, the goal of reducing greenhouse gas emissions to the lowest level and improving the system with the capacity to overcome climate change is included, which means that the system for adapting to climate change has been created before 2041. In this policy document, one of the important policies aimed at ensuring children's rights is to establish a child development center in 2030 and to increase the participation of parents in supporting children's development, talents, skills, technical thinking, and social maturity. However, there is a lack of policy integration with climate change adaptation. Several important issues related to children's health are covered, but the policy is not considered in a coherent manner in terms of how to adapt to climate change. It is important to increase the number of schools, kindergartens, health, physical education and sports organizations, youth development centers and child protection centers directly related to children's rights. However, the policy of how to adapt to climate change, which is a pressing issue today, has been neglected.
5	Appendix No. 2 of Resolution No. 52 of 2020 of the Great Khural of Mongolia ACTIVITIES TO BE	Low-carbon, productive and inclusive green development Goal 6.4 Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change. 3. Strengthen the ability to adapt	In 2011, Parliament Resolution No. 02 on "Approving the National Climate Change Program" was approved, but in 2021, the Act was invalidated by Parliament Resolution No. 89. Measures to

	IMPLEMENTED IN 2021-2030 WITHIN THE LONG-TERM DEVELOPMENT POLICY OF MONGOLIA "VISION-2050"	and withstand climate chang Objective 6.4. Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change. 6.4.11. The national program for adaptation to climate change will be approved and implemented. 6.4.12. Investigate and form the insurance system for risks caused by climate change. 6.4.17. Implement green projects and programs to develop renewable energy, reduce greenhouse gas emissions, reduce waste, and increase the efficiency of resource use through the United Nations Green Climate Fund and other international financial methods. Modern solution 9.2.5. Create a forest ecosystem that is resistant to urban climate change, implement sustainable management of forest protection, and introduce a payment system for ecosystem services in stages. 9.2.8. Create a forest ecosystem resistant to climate change and implement sustainable management of forest protection and restoration based on new scientific and technological achievements. Target 9.2. It will create a healthy and safe living environment for citizens, maintain ecosystem balance, and become a city with a pleasant living environment with green technology that emits less greenhouse gases. Actions to be taken within the scope of the objectives 9.2.1. To establish the value and ecological capacity of the ecosystem of cities and towns, to assess the vulnerability and risk of climate change, to develop a comprehensive management system for disaster risk reduction, and to establish green zone ecological corridors. Health Phase I (2021-2030): A period of reform of the health care quality and access system. 9. Factors affecting preventable maternal and child mortality have been reduced, and the mortality rate of mothers, infants and children under 5 years has decreas 2.2.31. In order to teach the population to have a healthy life and acquire good life habits from childhood, healthy life habits will be included in the pre-school and general education programs. 2.2.32. The environment and conditions for children to learn good health and physical habits in their free time should be created outside the home and in the school environment. Гэр бүл 2.1.15.Малчин, шилжин суурьшигч, орлого багатай өрхийн, ялгаатай болон тусгай хэрэгцээ шаардлагатай хүүхдүүдэд сургуулийн өмнөх боловсрол тэгш олгох боломж, орчин нөхцөлийг бүрдүүлж, эцэг эх, асран халамжлагчдыг чадавхжуулах замаар тэдний оролцоонд түшиглэсэн хүүхдийн хөгжлийг дэмжинэ. Objective 2.3. Active and creative citizens and families will be nurtured by supporting sustainable population growth. Actions to be taken within the scope of the objectives 2.3.1. Family-friendly employment and social security policies and programs will be implemented that support the birth of the population. 2.3.2.Strengthening the system of child rights, development and protection, implementing social security policies that are friendly to children and families, with equal opportunities, and multi-ethnic families ensuring equal rights and safety of children from families with disabilities, migrants, vulnerable and at-risk groups. 2.3.3. Based on a comprehensive study of Mongolian human development, the government implements policies and programs to protect the rights of the population, families, children, youth, workers, the elderly, people with disabilities, and migrants, to provide equal basic social services, and to support employment. , improve inter-sectoral policy coordination. Low-carbon, productive and inclusive green development Goal 6.4 Develop a low-carbon, productive and inclusive green economy and contribute to international efforts to mitigate climate change. 3. Strengthen the ability to adapt and withstand climate chang Objective 6.4. Develop a low-carbon, productive and inclusive green economy and contribute to	implement this repealed legal act in two main phases until 2021 include strengthening national capacity to mitigate and adapt to climate change, creating a legal framework, structure, organization, and management system, increasing public participation, implementation of possible measures to adapt to climate change and the sustainable implementation of activities to reduce the growth of greenhouse gas emissions will be started, but the issue of analyzing the implementation of the program has legal significance. Because on the basis of it, the reasons for the insufficient implementation are clarified and the issues that need to be implemented it is necessary to make it a state policy. It is commendable that the policy to improve the protection of forests resistant to climate change will be implemented in stages, but it is not clear what method and form it will be implemented. In addition, the policy emphasizing forest protection management is lacking in the fact that it neglects the coordination with the forest use policy. The provision "to create a healthy and safe environment for citizens to live in, to maintain the balance of the ecosystem, and to create a city with a pleasant living environment with green technology with low greenhouse gas emissions" is a legally significant policy aimed at creating a comfortable environment for children to live in a healthy and safe environment. However, it is important to clarify the way to implement it. These policies, which reflect children's health, are important for ensuring the rights of the next generation, such as education and health protection. policy. However, there is a lack of government policies to combine these issues with climate change adaptation. Therefore, it was concluded that there is an urgent need to clarify the issue of making children's health and education a state policy in order to adapt to climate change. As part of the child development policy, it is envisaged to create an environment for rural and low-income target groups in order to provide equal pre-school education, and to rely on their participation by empowering parents and caregivers. However, it is important to make child development a public policy, as it has not been integrated with climate change adaptation policies. In this policy, the implementation of family-friendly employment and social protection policies and programs, based on a comprehensive study of Mongolian human development, the government will protect the rights of the population, families, children, youth, workers, the elderly, people with disabilities, and migrants, and provide basic social services equally. , labor The implementation of employment promotion policies and programs is based on the legal possibility of dual regulation of climate change adaptation policies in the program. It has become a comprehensive policy aimed at mitigating climate change. However, it is reasonable to say that the policy of harmonizing the adaptation capacity of today's children and future generations to climate change has been abandoned. Therefore, the issue of how to adapt to climate change in terms of children's living, learning and living in a healthy and

		international efforts to mitigate climate change. Actions to be taken within the scope of the objectives 6.4.1.Environmentally friendly, economical use and efficient advanced green technology will be supported by economic incentives. 6.4.2. Create and implement legal regulations for eco-payments aimed at reducing waste generation and putting waste into economic circulation. 6.4.3. Support and develop environmentally friendly and economical green ideas, attitudes and practices, such as sustainable green cities, green buildings, green lifestyles, and resource conservation. 6.4.4. To reduce pollution and waste, to introduce environmentally friendly advanced techniques and technologies that save resources, and to support clean production and economical consumption with economic incentives. 6.4.5.Environmental Management MNS ISO14000 package standard introduction and green certification system will be supported and intensified, and correct production and consumption practices will be created. 6.4.6. State procurement will be gradually transferred to green procurement and a system will be created to support the private sector. 6.4.7. Implement the Paris Agreement, ensure the implementation of Mongolia's Defined Contribution (NDC) document, develop renewable energy, and develop energy, agriculture, construction, transportation, industry, and waste sectors. reduce greenhouse gas emissions. 6.4.8. Increase the absorption of greenhouse gases by afforestation, protection of peat bogs, rehabilitation of damaged areas, protection of plant cover and vegetation. 6.4.9. The ability to measure, calculate, inventory, estimate, and report greenhouse gas emissions of industries will be strengthened and digitized. 6.4.10. In the construction industry, domestic industries producing green and energy-efficient products will be supported and developed. 6.4.11. The national program for adaptation to climate change will be approved and implemented. 6.4.12. Investigate and form the insurance system for risks caused by climate change. 6.4.13.Strengthen the capability of early reporting and warning of dangerous natural and weather phenomena, and establish radar stations in at least five locations. 6.4.14. Environmentally friendly green projects and activities Establish and develop a joint national green financial system of the public and private sectors to finance the operation. 6.4.15. Strengthen the sustainable financial system that is friendly to the environment, introduce the principles of sustainable business in the economic and social sectors, and increase the environmental and social responsibility of enterprises. 6.4.16. The national green financial system (green bank, green bond, green exchange, green insurance) will be launched at a new stage to develop environmentally friendly sustainable production, cultivate and spread smart consumption, and finance environmentally and socially friendly projects and activities. 6.4.17. Implement green projects and programs to develop renewable energy, reduce greenhouse gas emissions, reduce waste, and increase the efficiency of resource use through the United Nations Green Climate Fund and other international financial methods. 6.4.18. Create and develop an electronic system for registration, movement control, registration and information of toxic and dangerous chemical substances. 6.4.19. To standardize the sorting of waste at the source, to establish a plant that does not have any harmful effects on the environment for recycling and energy production. 6.4.20. In Ulaanbaatar city, regional centers and other cities and towns, standard landfill facilities for centralized waste points and facilities for temporary storage and disposal of hazardous waste will be established in stages. 6.4.21.Environmentally friendly disposal and recycling of solid waste from the construction, road, and	safe environment should be made a state policy when implementing the relevant provisions..

		transportation industries will be supported and developed. 6.4.22. Expand and build new waste water treatment facilities and increase the number of people provided with standard sanitary facilities. 6.4.23. Implementation of a pilot project for environmentally friendly disposal of sludge from treatment facilities and household sanitation facilities, and dissemination of good practices.	
6	Appendix No. 3 of Resolution No. 52 of 2020 of the Great Khural of Mongolia "VISION-2050" MONGOLIA'S LONG-TERM DEVELOPMENT POLICY MONITORING-ANALYSIS, EVALUATION CRITERIA AND ACHIEVEMENT LEVEL		
	Appendix 1 of Resolution No. 106 of 2021 of the Great Khural of Mongolia NEW RECOVERY POLICY		
7	Appendix No. 2 of Resolution No. 106 of 2021 of the Great Khural of Mongolia ACTION PROGRAM FOR THE FIRST PHASE OF IMPLEMENTING THE "NEW RECOVERY POLICY"	Five. Revival of green development 5.1. In order to make a significant contribution to mitigating climate change, the "Billion Trees" national movement will be effectively launched and a legal and legal environment will be created to support citizens, enterprises, and organizations. Objective 5.4. When implementing the policy of economic and industrialization revival, preserve the national traditional customs of nature protection and determine the standard model of green development in accordance with the global development trend. 5.4.1. To ensure the safety of the environment and to create healthy and safe living conditions for the population, implement environmental monitoring, analysis and evaluation in a sophisticated manner 5.4.2.Implementation of the national goal of mitigating climate change, reducing desertification and land degradation	It can be concluded that the implementation of the "Billion Trees" measure has been successful at the national level. However, the implementation of tree planting based on natural and social science research is highly related to the concept of creating favorable conditions for the environment for future generations, so decision makers should implement policies based on natural and social science.
	Appendix No. 3 of Resolution No. 106 of 2021 of the Great Khural of Mongolia " LIST OF DEVELOPMENT PROJECTS FOR THE IMPLEMENTATION OF THE ACTION PROGRAM OF THE NEW RECOVERY POLICY	FIVE. REVIVAL OF GREEN DEVELOPMENT 5.1. In order to make a significant contribution to mitigating climate change, the "Billion Trees" national movement will be effectively launched and a legal and legal environment will be created to support citizens, ent Climate change mitigation projects based on environmentally friendly advanced technologies /"Terbum Mod" national movement, project to establish a centralized eco-facility for general and hazardous waste/	It is possible to implement a project to create a centralized waste eco-facility that has already been implemented.

ANNEX 7. Related laws

№	Name of law and year of adoption	Regulation	Legal opinions and comments
	In the field of environment for safe living		
1.	Constitution of Mongolia	10 thing \ 2/ the right to live in a healthy and safe environment, to be protected from environmental pollution and loss of natural balance;	Basic civil rights are guaranteed in the Constitution of Mongolia.
2.	Air Act	3.1.17Negative physical effects on the air" means physical effects such as noise, vibrations, ionizing radiation, electromagnetic waves that change the physical properties of the surrounding air, such as heat, energy, waves, and radiation, and thus have a negative impact on human health and the environment. action of other factors; 3.1.18"Negative physical impact standard" means the tolerance norms of physical impact that do not have a negative impact on human health and the environment, as certified by the state administrative organization in charge of standards; 6 Article No. Powers of the Government 6.1.1. developing policies and implementing related programs on air protection and climate change; 6.1.1¹. establish and operate a National Committee responsible for coordinating the implementation of the air pollution reduction policy and supervising the coordination of activities; 6.1.2. Implementation of the United Nations Framework Convention on Climate Change (hereinafter referred to as "the Convention"), adaptation to climate change, ecological vulnerability and the negative impacts of climate change Establishing a National Climate Committee responsible for organizing measures related to mitigation at the national level and providing unified management; Article 7. State administrative center for environmental issues organizational mandate 7.1.4. Approve the rules of the air quality professional office specified in Article 10.1 of this law on air protection and the Climate Change Work Office specified in Article 24.1 of this law and provide management; 9.1. Enterprises, organizations and citizens have the following rights and obligations: 9.1.10. If the activities carried out by citizens, businesses or organizations reach a level that pollutes the air and thus adversely affects human health, make demands, file complaints, and notify relevant organizations 12 Article No. Information about air quality 12.3. If the concentration of air pollutants and the level of negative physical effects exceed the permissible levels specified in the standards, the professional department will promptly inform the relevant organizations and the public and provide health advice.. 14 дүгээр зүйл. Citizen participation and incentives to reduce air pollution 14.1Bonuses will be given to households that meet one of the following conditions and criteria in accordance with Article 6.1.6 of this law: 14.1.1. have insulated houses and apartments that meet standard requirements; 14.1.2. in the power transmission and distribution connected to the network and using an electric heater; 14.1.3. all types of gas fueled heating; 14.1.4. using geothermal, solar, wind and other renewable energy; 14.1.5. use compressed and semi-coked fuel, improved stoves and exhaust filters that meet standard requirements; 14.1.6. have environmentally friendly energy-efficient houses and apartments; 14.1.7. reducing greenhouse gas emissions by saving fuel and participating in local and foreign subsidized loans, assistance, projects and programs in this direction; 14.1.8. others. 20.2. In case it is determined that the pollutant emitted by the enterprise, organization, or citizen's large stationary source of air pollution and the negative	The right to live in a healthy and safe environment is enshrined in a detailed law. Vision-2050 is governed by the long-term development policy. The composition and rules of the National Committee have been approved by Resolution No. 333 of the Government of Mongolia dated October 20, 2021. The rules of the Climate Change Office have been approved and a legal framework has been established to manage the activities. Citizens and enterprises are guaranteed the right to make demands, complain, and report to the relevant authorities when there is a negative impact on their health. If the right to live in a healthy and safe environment is violated, the right to protection from the loss of natural balance is guaranteed by a detailed law on the right to restore the right. The right to live in a healthy and safe environment is guaranteed by a detailed law.

		physical effects of it exceed the established standards, and the situation that endangers the health of the population and the environment has arisen, the environmental and health The state inspector of the enterprise may limit or temporarily suspend the activities of the enterprise, organization, or citizen until the violation is eliminated in accordance with the procedure specified in the Law on Investigation and Resolution of Violations. 24 дүгээр зүйл. Adapting to climate change and reducing its negative effects 24.1. The central state administrative organization will organize and operate the Climate Change Work Office, which is responsible for organizing the implementation of the Convention and relevant national programs and action plans, coordinating the activities of the Climate Change Adaptation Fund and the Clean Development Mechanism project, giving evaluations, and issuing reports. 24.2. The national inventory of greenhouse gas emissions and absorption was organized by the office according to the methodology approved by the Conference of the Parties to the Convention. send. 24.3. The maximum allowable amount of greenhouse gas emissions from sources that emit a lot of greenhouse gases during business operations shall be approved by the central state administrative organization in cooperation with other relevant organizations. 28 дугаар зүйл. Forest care and cleaning Deliberately influencing weather conditions and weather phenomena 28.1. In the event that there is a need to deliberately affect the weather and climate phenomena, the central state administrative body shall issue a permit to the organization performing the operation based on the opinion of the professional service. 28.2. Deliberate influence should not adversely affect the air condition and atmosphere.	
3.	Air Pollution Charges Act	5 THING 5.6. Compensation for air pollution shall be paid to the Environment and Climate Fund by relevant enterprises, organizations and citizens.	The "Air" law clearly outlines the powers of state and local self-governing organizations, the common rights and duties of enterprises, organizations, and citizens regarding air protection, as well as which organizations determine air quality, monitor and analyze it, make relevant reports and conclusions, and reduce air pollution. The measures to be taken and the basic principles to be followed have been defined. It is also legal to collect air pollution compensation into the climate fund.
4.	Forest Law	1 дүгээр зүйл. Legal objective 1.1. The objective of this law is to protect, restore, multiply the forests of Mongolia, related to possession, use, forest and field fire prevention is to regulate relations. 3.1.29"agro-forestry" means farming measures that improve the soil, climate, and hydrological conditions of the area, and support the environment for the growth of crops and natural plants. 11 дүгээр зүйл. Powers of the State Great Khural 11.1. The State Assembly shall exercise the following powers regarding the anniversary: 12 дугаар зүйл. Powers of the Government 12.1. The government shall exercise the following powers in relation to forests: 13 дугаар зүйл. Powers of the Central State Administration Organization Look up details 15 дугаар зүйл. Powers of state administrative bodies in charge of emergencies 19 дүгээр зүйл. Powers of the Governor and the Public Meeting of the citizens of the team and committee 20 дугаар зүйл. Civil rights and duties 20.2.3. keep national traditions and customs of forest protection and ecology for children education; 24 дүгээр зүйл. Forest protection measures 24.1. Forest protection measures include measures to prevent forest fires, wildfires, harmful insects and diseases, to fight them, to protect them from the negative effects of human activities, to ensure normal growth and regeneration of forests, and to protect the gene pool. 24.2. District, Capital, Sum and District Citizens' Meetings protection and restoration of forest reserves in	The right to protect against the loss of natural balance is guaranteed. The powers of the State Congress on forest management are regulated by law. The implementation of forest management policy will guarantee children's right to live in a healthy and safe environment and be protected from the balance of nature, and will contribute to reducing climate change. The central state administrative body has legislated its powers regarding measures to be taken in relation to forests. This is a manifestation of the state's right to protect the natural balance. The state administrative body in charge of emergency has legalized the full authority to take measures related to forests. This is a manifestation of the state's right to protect the natural balance. The central state administrative body has legalized the

		degraded areas of forested areas operational activities for a period of up to three years for the purpose of recovery can be stopped 25 дугаар зүйл. To involve non-governmental organizations in the protection of forest reserves 25.1.3. forest protection, appropriate use, restoration, propagation and forest, training and promotion on wildfire prevention and protection organize; 28 дугаар зүйл. Forest care and cleaning 28.1. In order to ensure the normal growth and development of the forest, to improve its productivity, to prevent fires, harmful insects and diseases, and to preserve the ecological balance, the maintenance specified in Article 28.2.1 of this law shall be carried out not only by the forest professional organization, but also by the forest association, Enterprises and citizens will do it by contract. 31 дүгээр зүйл. Organization of tree planting 31.1. The governor of the province and the capital announced the monthly task of planting trees every organization, one for every 16-year-old citizen, enterprise, organization planting, watering and maintenance of at least five trees, and in cases where it is not possible to do it by oneself, the cost will be donated. 31.2. District, district, team and committee governors to select the area for tree planting and soil processing, providing seedlings, watering and caring for them organize in cooperation with professional organizations and involve citizens in the work will be involved. 31.3. Trees planted by citizens, forestry associations, enterprises and organizations can be purchased according to certain criteria. 31.4. Gardening and construction of green facilities in cities and towns shall be regulated by relevant laws. 41 дүгээр зүйл. Forestry Training and Science Supply 41.1. The government within the formal and informal education system knowledge, education, upbringing, forest protection methods and practices for citizens approve and organize the implementation of the ecological education program. 41.2. Provision of training and science to be followed by the government organized as follows: 41.2.1. initial knowledge in the field of forest ecology education, tree planting and afforestation in pre-school educational institutions and general education schools give; 41.2.2. Vocational training-industrial centers, colleges, universities and institutes determine the demand for trained personnel in the field of forestry, Provide professional education and refresher training on a regular basis training of personnel and workers; 41.2.3. expanding research and analysis work in the forestry sector, using advanced methods, Research by investing in technology development and innovation introduction of results, new ideas, advanced techniques and technologies into production; 41.2.4. knowledge about forests through mass media,	powers to take action related to forests. This is a manifestation of the state's right to protect the natural balance. The rights and duties of citizens are legalized. Forest protection measures have been coordinated. Arrangements have been made to involve non-governmental organizations in the protection of forest reserves. Maintenance and cleaning of the forest has been arranged. The organization of tree planting at the national level is legally regulated. It is an act that fulfills the right to be protected from the disturbance of natural balance. Within the framework of the formal and informal education system, it has been legislated to provide citizens with knowledge and education about forests, forest protection methods and practices, and ecological education. This is an important aspect of protecting the rights of future generations to adapt to climate change.
5.	Water Law	5.4. Compensation for water pollution shall be paid to the Environment and Climate Fund by the relevant citizens, enterprises and organizations. 22.18. Measures to protect and restore water resources shall be financed by state and local budgets, the Environment and Climate Fund, capital of enterprises and organizations, foreign loans and aid.	Funding for activities in the field of water resources protection has been regulated and legislated. Taking remedial measures to protect water resources is an indication that the government is protecting the right of children to be supplied with drinking water and to protect their health.
6.	Environmental Protection Law	10. Income from the sale of illegally prepared and confiscated natural resources and the proceeds from the sale of weapons, vehicles, vehicles, machinery and equipment confiscated for use in crimes and violations shall be deposited in the Environment and Climate Fund specified in Article 7 of the Law on Special Government Funds. 11. The evaluation, analysis, expert and laboratory costs necessary for the prosecution of crimes against the environment shall be financed by the Environment and Climate Fund under the condition of repayment. 35 дугаар зүйл. Database composition 1. The state database consists of information on the following: 8/atmosphere; 49 дүгээр зүйл. Compensation for environmental damage 1. Citizens, businesses, and organizations that cause damage to the environment and natural	Iegal sale of natural resources and items used in crime have been legalized to be included in the climate fund. The Climate Fund has legislated to fund the investigation of environmental crimes on the condition of repayment. Climate is included in the composition of the database. The "Environmental Protection" Law establishes a system of responsibility for compensating the guilty party for costs incurred in connection with the

		resources shall pay compensation, and the compensation shall be deposited into the Environment and Climate Fund specified in Article 7 of the Law on Special Government Funds. If the payer pays more than the set amount, the difference will be refunded by the Environment and Climate Fund.	restoration of natural resources and the lost balance of the environment as a result of illegal activities, as well as accounting for officials who have failed to fulfill their duties. Arrangements were made so that any entity would compensate for the damage caused to the environment.
7.	About soil protection and desertification prevention	4 дүгээр зүйл. Definition of legal terms 4.1.3 "Desertification" means the process of soil deterioration due to the influence of other factors such as climate change and human activities;	Climate change is understood as the cause of desertification. The purpose of the law is to prevent the negative effects of soil erosion, damage, and desertification, to reduce erosion, damage, and pollution, to take measures to prevent desertification, to create a healthy, safe, and comfortable living environment for the population, and to create a system of responsibility for environmental protection.
8.	About hydroclimatic and environmental monitoring	3.1.2 "Climate resources" means the natural potential that can be used to meet the needs of human life, such as solar radiation, precipitation, air, soil moisture, heat supply, water availability, wind and water energy; 4.1.1. provide conditions for full use of water, climate, environmental information and climate resources for social and economic development;	
9.	Land Law	50 дугаар зүйл. Common for efficient and appropriate use and protection of land requirements 50.1. The land owner and user shall use and protect the land efficiently and appropriately fulfill the following requirements: 50.1.1. preservation of the condition and quality of land, natural and human reduction of soil fertility and ground vegetation cover due to activities undertake measures to prevent erosion, erosion, damage, drying, swamping, salinization, pollution, and poisoning at own expense; 50.1.2.rehabilitate and refurbish the land damaged due to excavation and use for mineral extraction, preparation of building materials, laying of railways and highways, exploration, testing, testing, and other purposes with own resources and resources; 50.1.3. When using land and its rich and widespread minerals not to have a negative impact on the environment; 50.1.4. forest groves, rare and endangered animals and plants, protection of places with historical and cultural monuments; 50.1.5. harming the environment in the land owned and used by others do not carry out influence activities.	
10.	Law on Specially Protected Areas	25 дугаар зүйл. Powers of the State Great Khural The State Great Khural has the following powers regarding specially protected areas implement: 1/ to determine the state policy on taking land under special state protection; 2/ According to the submission of the government, the land will be taken under special protection to make a decision, assign these areas to a specific category of state-protected areas, approve or change the boundaries of protected areas and natural parks. 26 дугаар зүйл. Powers of the Government The government has the following powers regarding specially protected areas implement: 3/ organize the forces of citizens, enterprises, and organizations to prevent disasters and dangers in specially protected areas and eliminate the harm caused by them, and take necessary measures; 27 дугаар зүйл. Specially protected areas 11/ A country where water resources are deteriorating and there is a real threat	

		of pollution large rivers and basins of great importance to the state for special protection and resolve the issue at the appropriate stage.	
11.	Law on Specially Protected Areas	6 дугаар зүйл. Environmental Regional Council 6.4.5. the law on specially protected areas and their surrounding areas promote legislation and disseminate appropriate information to the public. 7 дугаар зүйл. Environmental Regional Fund 7.4. The environmental zone fund will be spent on the following measures: 7.4.1. to restore the environment and reduce environmental degradation; 7.4.2. supporting the livelihood of local citizens, small production and services providing assistance and support in undertaking and implementing projects; 7.4.3. update production techniques and technologies that have a negative impact on the environment; 7.4.4. conducting environmental protection training and advertising, conducting research in the environmental area; 7.4.5. eliminate damages caused by natural hazards and disasters.	
12.	Law on environmental impact assessment	3 дугаар зүйл. Definition of Legal Terms 3.1. The following terms used in this law shall be understood in the following meanings: 3.1.3. "strategic assessment of the environment" as national, regional and sector during the development of policies, development programs and plans to be implemented, to determine the risks, adverse effects and consequences of its implementation on the environment, society, and human health in accordance with climate change trends, disasters, dangerous phenomena, accidents, and hazards; 3.1.10. "risk assessment" means activities to determine in advance the possible effects of chemical, biological, and physical factors on people, animals, plants, and the environment, as well as the effects of disasters and hazards; 4 дүгээр зүйл. Environmental impact assessment 4.1. Environmental impact assessment is the assessment mentioned below subject to: 4.1.1. environmental strategic assessment /hereinafter referred to as "strategic assessment"/; 4.1.2. assessment of the state of the environment /hereinafter referred to as "state assessment"/; 4.1.3. environmental impact assessment /hereinafter referred to as "impact assessment"; 4.1.4. Cumulative impact assessment. 4.2. Regulation of environmental impact assessment at the central state administrative organization in charge of environmental issues, this law 4.1.1., 4.1.4. Professional Council for Environmental Impact Assessment / further "Professional Council" will work. 4.3. The professional council of the state administration in charge of environmental issues appointed by the decision of the central organization.	
13.	Natural Plants Act	Article 8. Areas where the use of plants for industrial purposes is prohibited 1. It is prohibited to use plants for industrial purposes regardless of the amount of resources in the following areas that are important for ensuring environmental balance: 1/ green areas of cities, soums and other settlements; 2/ land within 2 kilometers from the source of rivers and streams and the shores of lakes and ponds; 3/ location of extremely rare animals; 4/rich; 5/ the place where the plant cover is breaded; 6/ the important place to protect against sand drift; 7/ soil erosion protection strip. 2. Meeting of Representatives of Sum and District Citizens 3, 4, 6 of Section 1 of this Article The area and its boundaries specified in Clause 7 shall be determined based on the opinion of a professional organization. 9 дүгээр зүйл. Plant regeneration Citizens, enterprises and organizations plant for production purposes After making conditions for rehabilitating or rehabilitating the used land according to the proper procedure, it will be handed over to the governor of the district. 14 дүгээр зүйл. Pasture and hay plants for animal feeding to use 3. Creation and protection of conditions for plant regeneration or regeneration For this purpose,	

		the governors of sums, districts, teams, and committees will decide on the issue of using pasture and hay land according to schedule and capacity.	
14.	Subsoil Law	Article 1. Objectives of the Law of Mongolia on Subsoil The goal of the Mongolian law on subsoil is now and in the future to use and protect the subsoil in accordance with the interests of future generations is to regulate the connected social relations. Article 20. Basic rights and obligations of land users 2. The user of the land is obliged to meet the following requirements: 3/reliable protection of atmospheric air, land, forests, water, springs, animals and other environmental objects and buildings from harmful effects caused by the use of the subsoil, as well as preservation and protection of specially protected areas, natural, historical and cultural monuments provide	
15.	Animal Law	6 дугаар зүйл. A form of animal protection 6.1. Animals shall be protected in the following manner: 6.1.1. establishing prohibitions and restrictions on the use of animals; 6.1.2. extremely rare and rare animals are listed in the international and Mongolian "Red Book", registration in the annexes of other relevant agreements and conventions; 6.1.3. maintaining the normal growth and reproduction of animals, protecting the distribution area, maintain free migration routes; 6.1.4. to protect animal genealogy and preserve embryos; 6.1.5. establish animal resources and regulate their use; 6.1.6. reintroduction of animals; 6.1.7. to prevent the destruction of animals during production and economic activities; 6.1.8. take and implement biotechnical measures; 6.1.9. providing assistance to animals affected by disease, disaster, or dangerous phenomena, protection; 6.1.10. carry out scientific work aimed at deriving the basis of animal protection measures; 6.1.11. Educate people with compassion towards animals, animals promote conservation activities through social media.	
16.	Land Payment Act	8 дугаар зүйл. Exemption from land tax release: 6/ citizens, enterprises and organizations to improve soil structure and pasture areas planted with perennials and legumes for transfer purposes during the first 5 years from ownership and usage fees; 7/ Citizens, enterprises, and organizations own and use newly planted perennial plants, fruit, and fruit fields. during the period from the payment to the first harvest; 2. Focused on land protection and restoration and environmentally friendly The government will decide on the issue of granting land payment discounts to citizens, enterprises, and organizations using technology.	
17.	Disaster Protection Act	3 дугаар зүйл. Organizing disaster prevention training 13.1. Disaster prevention training is aimed at training officials, employees and citizens of state and local administrative organizations, legal entities. 13.2. Disaster prevention training will be conducted in the following categories: 13.2.3. students, pupils, children of the age before entering school; 13.3. Disaster prevention training will be organized by the following organizations and officials: 13.3.6. education of students, pupils, and children of pre-school age according to the approved curriculum, educational institutions of that level;	It consists in the prompt and effective organization of disaster prevention activities, coordination of relations with emergency organizations and disaster prevention management systems, organization, and activities..
18.	Waste Law	42 дугаар зүйл. Providing education about waste 42.1. Education about waste is to inculcate in citizens, enterprises and organizations a culture of environmentally friendly consumption, to develop habits of proper disposal, classification and reuse of waste, and the negative effects of waste on human health and the environment. aimed at imparting knowledge about the impact. 42.2. Education about waste will be provided as follows: 42.2.1. regarding waste in the national	According to the "Waste" Law, in order to eliminate and prevent the harmful effects of waste on human health and the environment, it is necessary to reduce, sort, collect, transport, store, recycle, reuse,

		program specified in Section 7.1.1 of this law reflect educational goals and implementation measures; 42.2.2. provide formal education about waste through the educational content specified in Article 8.4.2 of this law; 42.2.3. promote national traditions, customs, best practices and laws regarding waste through the press and media; 42.2.4. provide informal education through state and non-state organizations, professional training and research centers. 42.3. Governors at all levels will provide financial and organizational support and assistance to organize waste education training in the local area and fully involve citizens in the training. 42.4. When privately-owned enterprises and organizations organize educational training on waste on their own initiative, governors of subdistricts, districts, teams, and committees, and territorial enterprises and organizations shall provide support with training areas and facilities, and provide assistance in ensuring citizens' participation. 42.5. The professional organization engaged in activities in the field of waste is responsible for providing full training to citizens, enterprises, and employees of organizations, providing training facilities and other support required for training.	destroy, export and import waste. relations related to prohibition of transportation through
19.	Education Act	44 дүгээр зүйл. Teacher's rights and duties 44.1. The teacher has the following rights: 44.1.3. making demands and giving advice to the student and his parents and guardians; 44.2. The teacher has the following duties: 44.2.7. to take care of the student's health and safety. 4 дүгээр зүйл. Educational goals 4.1. The purpose of education in Mongolia is to develop citizens with appropriate intellectual, moral, and physical capabilities, respect humane values, and be able to learn, work, and live independently. 2 дугаар зүйлGoals of primary, basic and upper secondary education 2.1. The goal of primary education is to train Mongolian children with basic knowledge of the mother tongue, creative and learning methods, the goal of basic education is to train citizens who have the basic knowledge and skills of life and science, and the ability to learn independently, and the goal of secondary education is to process information. , to form citizens with general basic skills for future occupations with the ability to make decisions and learn 5.1.5. provide knowledge and communication skills to prevent violence and resolve violations in non-violent ways, to protect oneself from risks. 4.1.3. to acquire the appropriate level of knowledge about the phenomena and things of the environment; 20.2.15. take measures to prevent violations of children's rights in the school environment and supervise. 22.1.7.meet the requirements of hygiene, labor protection and safety of educational work; 22.2. In addition to Article 44.1 of the Law on Education, the teacher has the right to personally participate in stopping or prohibiting any activities that have a negative impact on the school, the teaching work, health, safety, and interests of teachers and students.	The law enshrines the right to make demands in accordance with the rights stipulated in the law in the field of ensuring and protecting the rights and freedoms of children granted by law.. The law enshrines the duty of teachers to pay attention to the health and safety of students, or to contact the relevant authorities in case of violation of their rights. The goal of the Education Law is to develop the ability to work and live independently, and this means that the state is responsible for protecting and ensuring the right of children to live in a healthy and safe environment. Otherwise, it is an opportunity to fully enjoy your rights and freedom. There is a goal of socialization through education to adapt to the environment and society, to enjoy rights and freedoms with certainty. It is legalized to protect oneself from risks, enjoy guaranteed rights and freedoms granted by law, and restore rights in case of violation of rights. Acquiring basic knowledge about environmental phenomena is regulated by law. It provides environmental awareness and rights through education. It is a regulation for the protection of children's rights. It is an arrangement to ensure children's right to education in a safe environment. Rights and freedoms granted by law are regulations to prevent violations.

Annex 8.Related regulations

№	Name of the measure act, year of approval	Regulation	Legal opinions and comments
1.	Resolution No. 333 of the Government of Mongolia dated October 20, 2021	Implementation of Mongolian President's Decree No. 58 of October 4, 2021 "On Giving Directions to the Government" based on Article 11.1 of the Law on the Government of Mongolia and Article 8.1.2 of the Law on Soil Protection and Desertification Prevention DETERMINED by the Government of Mongolia for the purpose of: 2. The Deputy Chairman of the National Committee and the Minister of Environment and Tourism N. Urtnasand was entrusted with organizing the activities of the National Committee. 2. In connection with the issuance of this resolution, "On the Composition of Government Commissions, Committees, National Councils, and Working Groups" approved by Appendix No. 20 of Government Resolution No. 27 dated January 25, 2017 3. " Article 8 of the Government Commissions, Committees, Working Groups, and Their Heads shall be considered invalid.	A national committee to reduce climate change and desertification has been established.
4.	Decree No. 58 of the President of Mongolia dated 10.04.2021 ABOUT GIVING DIRECTIONS TO THE GOVERNMENT	1. Respecting the Mongolian traditions and customs of living in harmony with the mother earth and the environment, in order to reduce the impact of global climate change, to protect and increase the ecological balance of forests and water resources, to initiate the national movement "Billion Trees" and take the following measures Let the Government of Mongolia (L. Oyun-Erdene) direct: 1.1. To reduce the impact of global climate change and to increase Mongolia's contribution and practical participation in meeting the goals of sustainable development. 1.2. Every year, at least one percent of Mongolia's gross domestic product should be spent on activities against climate change and desertification, create a legal framework for the allocation of a certain percentage of state and local budget investments to the increase of environmentally friendly and standard green buildings, and make related decisions; 1.3. Establish a forest enterprise with governance and effective management system based on the Forestry Agency, which is a state administrative organization to coordinate the policies and activities of the forestry sector, and create an appropriate financial mechanism; 1.4. Develop agro-forestry to combat desertification and reduce land degradation, create a sustainable source of livelihood for citizens, create a legal framework to support citizens and businesses through tax and non-tax policies, and coordinate the universal work of planting trees with a comprehensive policy of transition from welfare to labor. ; 1.5. Create a forest fund with trees planted by citizens and businesses, register them in the state fund, put the planted trees into the market, provide real support for activities in this direction, and encourage everyone coming to Mongolia from abroad to plant trees in Mongolia; 1.6. Establish parks with green facilities in districts and sums, promote the culture of tree planting to the citizens and make it a public service; 1.7. Creating water resources for tree planting, especially surface water taking measures to increase the budget and investment resources for measures such as transfer to Gobi region, construction of floating ponds, introduction of advanced techniques and technologies that save irrigation; 1.8. To introduce methods of planting trees and modern techniques in accordance with the soil and weather characteristics of natural zones and belts, to develop and implement common recommendations, to develop urban green structures as an independent sector in accordance with the integrated planning of urban development; 1.9. Within the framework of intensifying the "Billion Trees" national movement, respect the Mongolian customs of protecting the environment, implement ecological education through training and enlightenment programs in a form suitable for the characteristics of educational institutions at all levels. Two. Citizens, businesses, government and non-government organizations are encouraged to actively participate in the implementation of this decree, to protect the mother nature, and to make a real contribution to planting trees. Three. In connection with the implementation of this decree, the expenses incurred by the government should be included in the state budget every year, and the President of	Respecting the Mongolian traditions and customs of living in harmony with the mother earth and the natural environment, he gave directions to take measures to promote a national-level movement to reduce global climate change, protect forests and water resources, and ensure ecological balance. This is one of the important implications of protecting the rights of future generations.

		Mongolia and many The Government of Mongolia (L. Oyuun-Erdene) should be tasked to inform the public quarterly.	
5.	Joint Order No. A/132/112 dated 10.05.2010 of the Minister of Environment and Tourism	3 of the Law on Environmental Protection/responsible for inter-sectoral and inter-regional management, policy planning and coordination regarding the protection of the environment, appropriate use and restoration of its natural resources, development of norms and standards of environmental capacity and approval by competent authorities or state administration jointly with the relevant central organization to approve and organize the implementation, ecological-economic assessment, damage calculation methodology;	"Methodology for estimating the cost of restoration of land damaged by mining activities" was approved.
6.	54/A/136A/215 dated 5.23.2017 joint order of the Ministry of Internal Affairs, the Ministry of Internal Affairs and the Ministry of Health	Article 21. Protection of the environment from pollution 4. Procedures for the production, storage, transportation, use, and destruction of radioactive and chemical toxic and dangerous substances and compounds containing them shall be established by law, and the government shall determine the procedures for collection, transportation, detoxification, disinfection, processing, burial, and disposal of industrial and household waste. .	Regulations on storage, transportation, use and disposal of toxic and dangerous chemicals have been approved.
7.	Government Resolution No. 137 of 2006	CHAPTER SIX RESPONSIBILITIES OF BUSINESS UNITS AND ORGANIZATIONS TO PROTECT THE ENVIRONMENT AND NATURAL RESOURCES Article 30. Professional organizations 1. Enterprises and organizations that manage the protection, appropriate use, and restoration of natural resources such as forests, animals, water, and minerals in accordance with the law and the rights granted by the central government administrative organization are called professional organizations. /This section was amended by the law of November 18, 2005/ 2. The Government shall approve the procedure for granting professional organizations the right to conduct and regulate the activities specified in Section 1 of this Article.	The procedure for granting environmental professional organization rights to enterprises and organizations has been approved.
8.	Order of the Minister of Environment and Tourism dated May 27, 2010 No. A/156	Article 49 of the Law on Environmental Protection. Compensation for environmental damage 5. The damage specified in Clauses 6 and 7 of Section 2 of Article 49 of this Law shall be determined at the following amount based on the amount determined by the methodology for calculating damage to the environment approved by the member of the Government in charge of environmental issues: 1/ the amount of damage caused to the earth's bowels equal to twice the amount of damage calculated by the method of calculating damage caused to the environment; 2/ caused by damage to the soil and pollution of the environment damages equal to three times the amount of damage calculated using the environmental damage calculation method	"Environmental Damage Assessment and Compensation Calculation Methodology" has been amended by Order No. A/59 of 2020 of the Minister of Environment and Tourism.
9.	DECISION OF THE GOVERNMENT OF MONGOLIA November 16, 2013 Number 374 APPROVAL OF PROCEDURES	Law on environmental impact assessment Article 5. Environmental strategic assessment 5.1. The ministry of the sector that initiates the policy, program and plan shall conduct a strategic evaluation during the development of the document and submit the evaluation report together with the draft policy document to the central state administrative organization in charge of environmental issues before it is discussed with the Government. 5.2. The strategic evaluation shall be carried out with the participation of a professional organization authorized by the central state administrative organization in charge of environmental issues, scientific and research organizations of the field, and a team of independent experts and experts. 5.3. The Government shall approve detailed procedures for strategic assessment and cumulative impact assessment.	Government Order No. 374 of 2013 Annex 1 of the resolution Strategic and Cumulative Environmental Impact Assessment Procedures Appendix No. 2 of Government Resolution No. 374 of 2013 Environmental impact assessment The procedure has been approved.
10.	30.03.2015, Order No. A/138	Article 9 of the Law on Environmental Impact Assessment. Environmental Management Plan 9.4. Development of environmental management plan and restoration The procedures and methods for doing so shall be approved by the central state administrative body in charge of environmental issues, and the standards of rehabilitation shall be approved by the competent body in accordance with relevant laws and regulations.	Procedures for developing, reviewing, approving and reporting environmental management plans" were approved.

11.	Order No. A/03 of the National Committee of the People's Republic of China dated 01.06.2014	CHAPTER FOUR COMMUNITY PARTICIPATION Article 18. Public participation in impact assessment activities 18.5. The issue of public participation will be regulated by regulations, and the regulations will be approved by the Cabinet member in charge of environmental issues.	Regulations on ensuring public participation in environmental impact assessment" have been approved.
12.	Order No. A/66 dated March 1, 2013 Order A/391 of the Minister of Environment, Green Development and Tourism dated November 20, 2015	19.2 of the Law on Land. The central state administrative organization in charge of environmental issues shall exercise the following powers: 19.2.2. to determine the degree of land erosion, damage, desertification type and classification, and develop and implement methods, instructions and procedures for combating and rehabilitating them.	Drought, desertification, aridity grading and water resource management procedures to be followed at this time have been approved.
13.	Resolution of the Central Government. 25.11.2020. Number 190.	Article 7. Disaster risk assessment 7.4. The government shall approve the procedure for disaster risk assessment.	Re-approving the procedure / procedure for disaster risk assessment/
14.	Resolution of the Central Government. 07.07.2015. Number 286	Article 15 of the Law on Water, Meteorology and Environmental Monitoring. Providing users with information on water, climate and environment 15.1. Forecasts, dangerous events, disasters 15.2. Precautionary information shall be promptly reported to the public free of charge by means of radio, television and other means of information within 15 minutes after receiving it with a special audio and visual signal. 15.3. Special needs information will be provided according to the customer's requirements in accordance with the contract with the customer. 15.5. Only information checked and confirmed by the professional organization of water, climate and environmental monitoring shall be used for the development of the project and technical and economic basis.	APPROVAL OF PROCEDURES, LIST AND SCHEDULE-" "Procedures for transmission of preventive information about dangerous and catastrophic phenomena of water, weather, environment" No. 1, - "List of hazardous and catastrophic weather phenomena to be included in warning and preventive notices" No. 2, - "List of environmental pollution warning messages to inform the public in case of sudden danger or industrial accident" No. 3, - "Schedule for announcing water and weather news on national public radio and television" was approved by Annex 4, - "Procedure for assessment of drought and drought conditions" was approved by Annex 5.
15.	Resolution No. 35 of the Great Khural of Mongolia dated April 14, 2016	Article 25 of the Law on Specially Protected Areas. Powers of the State Great Khural 2/ According to the submission of the government, making a decision on the acquisition of land under special protection, assigning these lands to a certain category of state-protected land, approving and changing the boundaries of protected areas and natural parks.	The mandate of the National Congress to take certain areas under special state protection has been enacted.
16.	Resolution No. 169 dated September 15, 1995 of the Government of Mongolia	Article 26 of the Law on Specially Protected Areas. Powers of the Government **5/ approving the protection regime of the protected area and natural park within the framework of the protection regime stipulated in this law;**	"The security regime and border menu of some specially protected areas have been approved
17.	Resolution No. 166 of the Government of Mongolia dated July 16, 1996	Article 26 of the Law on Specially Protected Areas. Powers of the Government **6/ to determine the boundaries of nature reserves and monuments.**	"The boundaries of natural resources and monuments have been approved.
18.	Order No. 75 dated April 24, 2003 of the Minister of Environment	"About the adoption of rules" Law on Specially Protected Areas Article 27. Powers of the central state administrative body in charge of the issue of specially protected areas 4/ approving procedures and action plans for forest maintenance, afforestation, soil and vegetation restoration, determining the size of the restoration area, methods and technologies for	By properly using, maintaining and rehabilitating forest resources, it is possible to enjoy the right to protect against loss of natural balance. It will also

		performing the work; /This subsection was amended by the law of December 17, 2021./	reduce the negative effects of climate change and prevent desertification.	