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CLIMATE CHANGE AND MEDIA INFLUENCE

The “climate change” refers to the long-term changes in the atmosphere, mostly caused by rising global temperatures. The primary drivers of these changes are human activities that emit greenhouse gases into the atmosphere. The objective of this research inquiry is to examine multiple facets, encompassing climate change ramifications on a global scale, portrayal in the media, level of public consciousness, governmental regulations and educational endeavors within Kazakhstan.

This research employs a mixed-methods approach to investigate media coverage, public awareness, government actions and international cooperation pertaining to climate change. Examining media influence on public opinion in Kazakhstan, the study scrutinizes the role of journalists and media outlets in fostering awareness and action on climate change issues. The paper analyses information from authority organizations` surveys, opinion polls and Google Trends data.

The media assumes a vital role in shaping public opinion and transmitting knowledge, with esteemed global publications like The Guardian and BBC. Although Kazakhstan is vulnerable to climate change, there have been significant advancements in media coverage. Nevertheless, there are ongoing obstacles such as the scarcity of resources and the lack of attention from media owners.

The study has discovered a notable deficiency in the inclusion of climate change in national curriculum, impeding the acquisition of the necessary information to effectively handle climate-related issues. This research establishes a foundation for the ongoing cooperation of media outlets, governments, and international organizations in tackling the multifaceted issues brought by climate change, emphasizing the pursuit of sustainable development goals.

Keywords: climate change, media coverage, Kazakhstan, UN Sustainable Development Goals.

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Климаттың өзгеруі және БАҚ-тың ықпалы

«Климаттың өзгеруі» термині негізінен атмосферадағы ұзақ мерзімді өзгерістен туындаған жаһандық жылынуды білдіреді. Бұның негізгі қозғаушы күші – адам әрекетінің кесірінен пайда болған парник газы.

Бұл мақаланың мақсаты – жаһандық деңгейде және Қазақстанда климаттың өзгеру салдарының әртүрлі аспектілерін, бұқаралық ақпарат құралдарындағы жарияланымдарды, қоғамдық сана деңгейін, үкіметтің заңнамалары мен тақырыпқа байланысты білім беру бастамаларын зерттеу. Бұқаралық ақпарат құралдарын, қоғамның хабардар болуын, климаттың өзгеруіне қатысты үкіметтік пен халықаралық ынтымақтастық шараларын зерттеу үшін аралас әдіс қолданылды. Мақалада Қазақстандағы қоғамдық пікірге БАҚ-тың әсерін айқындай отырып, климаттың өзгеруі мәселелері бойынша хабардар болу мен оған қарсы әрекет етудегі журналистер мен бұқаралық ақпарат құралдарының рөлі мұқият зерттелді.

Зерттеуде беделді ұйымдардың сауалнамалары, әлеуметтік сұраулар мен Google Trends деректері талданды. The Guardian және BBC, тағы сондай сияқты бұқаралық ақпарат құралдары қоғамдық пікірді қалыптастыруда және ағартушылықта маңызды рөл атқарады.

Қазақстан климаттың өзгеруіне бейім болғандықтан ол туралы бұқаралық ақпарат құралдарындағы жарияланымдарда айтарлықтай жетістіктер байқалады. Дегенмен, ресурс жетіспеушілігі және БАҚ иелерінің назар аудармауы сияқты кедергілер жалғасып жатыр.

Сондай-ақ, климаттың өзгеруі тақырыбының ұлттық оқу бағдарламаларында жеткілікті баяндалмауы, мәселелерді тиімді шешуде қажетті ақпарат алуға кедергі келтіреді. Бұл зерттеу Тұрақты даму мақсаттарына қол жеткізуге баса назар аудара отырып, климаттың өзгеруіне байланысты күрделі жағдайларды шешуде бұқаралық ақпарат құралдары, үкімет және халықаралық ұйымдар арасындағы одан әрі ынтымақтастықтың негізін қалауға жол ашады.

Түйін сөздер: климаттың өзгеруі, БАҚ жарияланымдары, Қазақстан, БҰҰ Тұрақты даму мақсаттары.

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Изменение климата и влияние СМИ

Данное исследование фокусируется на анализе долгосрочных изменений в атмосфере, известных как «изменение климата», преимущественно вызванных повышением глобальных температур. Цель работы заключается в исследовании различных аспектов последствий изменения климата на глобальном уровне, включая освещение в средствах массовой информации, уровень общественного сознания, законодательные меры правительства и образовательные инициативы в отношении Казахстана.

Методология исследования основана на комбинированном подходе, включающем анализ средств массовой информации, общественного мнения, действий правительства и международного сотрудничества в контексте изменения климата. Особое внимание уделяется роли журналистов и средств массовой информации в повышении осведомленности и формировании общественного мнения о климатических вопросах в Казахстане.

Анализ данных проводится на основе информации из различных источников, включая авторитетные организации, общественные опросы и Google Trends. Подчеркивается значимость средств массовой информации в формировании общественного мнения и распространении знаний, а также важная роль международных изданий, таких как The Guardian и BBC.

В ходе исследования отмечается, что несмотря на уязвимость Казахстана к изменению климата, в средствах массовой информации достигнуты определённые успехи. Однако преодоление препятствий, таких как нехватка ресурсов и недостаточное внимание со стороны владельцев средств массовой информации, остаётся актуальной задачей. Также отмечается недостаточное включение темы изменения климата в национальные учебные программы, что препятствует эффективному решению климатических проблем.

Исследование рекомендует укрепление сотрудничества между средствами массовой информации, правительством и международными организациями с целью эффективного решения проблем, вызванных изменением климата, с акцентом на достижение устойчивого развития.

Ключевые слова: изменение климата, освещение в СМИ, Казахстан, Цели устойчивого развития ООН.

Introduction

The term “climate change” refers to long-term changes in the atmosphere, mostly caused by rising global temperatures. The primary drivers of these changes are human activities that emit greenhouse gases into the atmosphere, including the combustion of fossil fuels, deforestation, and industrial activity. Methane, nitrous oxide, and carbon dioxide are some of these gases.

More than 99% of scientific papers affirm the hypothesis that human activities are the primary driver of climate change, indicating a complete consensus among climate experts regarding the origin of global warming (James Powell, 2019). The consensus is derived from extensive scientific evidence spanning more than a century, which encompasses the examination of historical climatic fluctuations, the capacity of greenhouse gases to retain heat, and the influence of human activities on the climate (NASA 2023).

The extensive and continuous repercussions of changes in the climate on ecological systems

can profoundly influence the effectiveness and equilibrium of natural systems. The consequences of these repercussions are extensive, affecting several aspects such as human health, politics, food supplies, infrastructure, financial markets, and society as a whole, and surpassing national borders (Ejaz et al 2023).

Climate change leads to a variety of consequences, such as more frequent and severe extreme weather events, higher sea levels, disturbances to ecosystems and biodiversity, alterations in precipitation patterns, and shifts in agricultural production. In order to mitigate climate change, it is imperative for society to decrease greenhouse gas emissions, shift towards renewable energy sources, and develop proactive adaptation strategies to address the ongoing changes.

Based on World Health Organization study, approximately 3.6 billion individuals currently inhabit areas that are especially vulnerable to the effects of global warming. Climate change is expected to cause an extra 250,000 fatalities per year between 2030 and 2050 (World Health Organisation 2023).

Due to its arid location, Kazakhstan is weak to climate change's effects. A World Bank report indicates that 75% of the population is increasingly sensitive to the detrimental impacts of climate change (A World Bank Group 2021). Kazakhstan experiences a highly continental climate characterized by notable fluctuations in both daily and yearly temperatures, as evidenced by historical records (Oladejo et al, 2023). Additionally, the country is currently observing a rise in the average annual air temperature due to changes in the global climate (The Climate Change Knowledge Portal (CCKP) 2021).

This study queries for more study: To what extent does media coverage influence widespread consensus regarding global warming in Kazakhstan? How do journalists and media outlets contribute to fostering awareness, understanding, and action regarding climate change issues?

The objective of this research inquiry is to examine multiple facets, encompassing its ramifications on a global scale, portrayal in the media, level of public consciousness, governmental regulations, and educational endeavors within Kazakhstan. In the specific case of Kazakhstan, they offer an all-encompassing structure for investigating the interrelated mechanisms of a changing climate and its dissemination.

Materials and methods

This study utilized a descriptive methodology, using a combination of approach that integrated qualitative and quantitative analyses. The research aimed to comprehensively examine global and Kazakhstan-specific reporting in the media on climate change, spanning historical, contemporary, and regional perspectives. A meticulous review of scholarly articles, reports, and relevant literature laid the groundwork for understanding the historical evolution of climate change research and its portrayal in the media.

To gauge public awareness and perception in Kazakhstan, surveys and opinion polls by authority organizations were shown, supplemented by Google Trends data that provided insights into search queries made by users in the region. This quantitative information was complemented by qualitative analyses, combining Google Trends data with surveys, social media analysis and news articles for a more nuanced interpretation.

Major international media outlets such as The Guardian, The Washington Post, Telemundo 51, BBC, Science, and Nature were included in the analysis to offer a comparative perspective.

The study also delved into specific initiatives and policies related to climate change in Kazakhstan, examining journalistic training programs, media contests, climate policies, vulnerability assessments, and adaptation strategies. Reputable sources such as UNDP, Climate Action Tracker, and the World Bank's essential information provided for a comprehensive overview.

The findings from content analysis, surveys, Google Trends analysis, and case studies were systematically integrated, providing a holistic understanding of the media landscape, public perception, and climate-related initiatives in Kazakhstan.

Literature review

The origins of scientific inquiries into climate change may be traced back to the early 19th century, when researchers initially recognized the presence of inherent variations in paleoclimate. The concept of the greenhouse effect was first suggested by Joseph Fourier in 1824, and more support for it was supplied by Claude Pouillet in 1827 and 1838. In 1856, Eunice Newton Foote performed tests to evaluate the heat retention abilities of several gases, including carbon dioxide. In 1896, Svante Arrhenius constructed the first model showing the probable consequences of human-caused emissions of gases that contribute to the greenhouse effect on the energy balance of the Earth. In 1938, Guy Callendar provided evidence of the increasing pattern of global temperatures. In 1967, Syukuro Manabe and Richard Wetherald invented the first accurate computer simulation of Earth's climate.

In the 1700s and 1800s, the modern media began its rapid development, despite the fact that it was confronted with challenges. These challenges included state control, colonialism, low literacy rates, and technological capacity challenges. The expansion of mass-circulation print presses in urban centers during the middle of the 1800s resulted in the formation of significant institutions in the fields of social, political, economic, and cultural affairs. In the 1930s, climate science and the mass media first intersected in their environmental coverage (Boykoff and Roberts, 2007).

Either climate change or warming of the planet, also known as the "greenhouse effect," is a significant environmental issue with implications for food, water, energy, ecosystems, human health, and social stability. It is often influenced by mass media, and has generated significant scientific and political controversy. While there is consensus on global warming, there is less agreement on its

exact consequences and strategies to mitigate them, leading to public confusion (Stamm et al, 2010).

The academic literature on effectively communicating with the public about climate change, its anthropogenic origins, and the imperative for personal and political action in response has expanded at a rapid rate due to the challenges posed by this phenomenon (Goldberg et al. 2019).

The way that the media covers climate change has modified over a while, with an increase in coverage occurring in the most recent decades. The initial comprehensive analysis of media portrayal of climate change in the USA was published in 1994. However, there was a substantial surge in coverage starting in the early 2000s, reaching its peak in September and October 2021 in the United States (United Nations News, 2023).

Consistently, research has demonstrated that media portrayals of climate change have cognitive effects. People obtain knowledge and gain insight regarding the issue through the media (Stamm et al, 2010).

Journalists and news media play a crucial function in conveying information about climate change, helping people understand its developments, choices, and implications. In 2022, climate news featured devastating floods, crop failures, extreme heat episodes, and hurricanes, including slow-burn developments and increased coal use to reduce Russia gas reliance (Ejaz et al, 2022).

There is a significant contribution that the media makes to the formation of public opinion regarding climate change and the effects it has on society. It is vital for good climate communication to convey a full grasp of the situation, as well as to inspire rather than terrify or anger the general people (Earth Day 2022). In order to facilitate proper comprehension of the issue at hand, the media ought to prioritize the dissemination of precise information, the translation of intricate scientific principles into simple language, and the promotion of a balanced and all-encompassing perception of climate change.

Discussion

According to CCC (climate change communication) research, coverage has expanded and become more precise. Climate change is a subject that is extensively and precisely covered by numerous media entities. The following are some examples of such outlets:

The Guardian has consistently provided extensive, scientifically grounded, and all-encompassing journalism concerning the climate

crisis and its potential remedies. *The Washington Post* has devoted considerable attention to the climate crisis in recent years, conducting extensive coverage that focuses on the multifaceted societal implications of climate change.

More than eighty percent to ninety percent of articles that appear in traditional print news media, such as *The New York Times* and *The Washington Post*, reflect the general agreement among scientists regarding the phenomenon known as climate change is occurring and is caused by humans (Newman et al 2018).

Telemundo 51, a Spanish-language television network, has likewise augmented its climate change news and its environmental ramifications. The *BBC* offers comprehensive coverage of climate change, encompassing news, features, and analysis on their website. *Science*, a leading scientific journal, provides a complete study of climate change through news, features, and research pieces, thereby offering valuable insights into the most recent advancements and discoveries in the field. *Nature*, a prominent scientific journal, publishes articles and news stories pertaining to climate change.

Journalists now cover a wide range of climate change issues, including decarbonization, corporate strategies, and consumer behavior, while also highlighting the economic and social costs of climate change (Ejaz et al, 2022).

Journalists must discover and highlight noteworthy components within the complex issue of climate change to meet news value requirements. Consequently, there are situations when they might minimize or exclude uncertainties linked to scientific data in order to cater to the news value of 'negativity', or they might amplify the expected negative implications of climate change based on the news value of 'unambiguity' (Schafer 2015).

In recent years, Kazakhstani media has increased its coverage of climate change. There have been a number of media contests (for example: Information portal on climate adaptation and mitigation in Central Asia, Best media coverage of climate change 2020; UN, Change for Climate in Kazakhstan 2021) and training programs organized by the United Nations and other organizations in order to raise awareness about climate change and encourage journalists and bloggers to write articles on the subject. The consequences of climate change in Kazakhstan has been the subject of extensive coverage in the media, with particular attention paid to its effects on agriculture, ecosystems, biodiversity, food security, and government health (UNDP Kazakhstan 2023). Additionally, the media has covered the nation's greenhouse gas emissions and reduction strategies.

A variety of formats have been utilized to convey the information, such as expert interviews, journalistic research, and social media (Poberezhskaya and Danilova 2022). On the other hand, there are still barriers that prevent Kazakhstan from having an ecological journalism that is comprehensive. These barriers include insufficient resources, a lack of interest from media owners, and a low priority given to environmental coverage (Freedman 2009).

A survey carried out in Kazakhstan by Demoscope revealed an incredibly high level of public awareness regarding climate change. The poll findings indicated that 92% of respondents in Kazakhstan acknowledged experiencing the impacts of climate change. Moreover, almost 65% of them expressed great anxiety about the potential consequences, whereas 27% of them believed that the changes were not significant at all. A small proportion of respondents, around 6%, reported no discernible alterations in the climate, while others were oblivious to the occurrence (Demoscope 2022).

The Climate Change Project of UNDP performed another opinion poll, which included 2168 participants from all regions of Kazakhstan. The majority of responders (46.70%) expressed that the widespread public awareness of climate change issues is of paramount importance. Unfortunately, the respondents assessed their level of awareness

regarding climate change, indicating that only 10.15% possessed comprehensive knowledge of the perilous implications it poses for both humanity and Kazakhstan (UNDP 2022). Concerning environmental issues, as with numerous other matters of public policy, the responsibility of disseminating information lies with the media. An essential function of the media is to educate society (Karimova et al. 2018).

An alternative approach to assess the degree of public interest in climate change and associated matters in Kazakhstan could involve examining the terms and topics that are frequently sought in the country through the Google Trends feature. During the months of February, April, and December of the previous year, climate change was the subject of extensive research (Figure 1). It was widely popular among residents in regions including West Kazakhstan, Almaty, South Kazakhstan, East Kazakhstan, and Pavlodar (Figure 2). For the past five years, the pattern of searching has been the same; however, in May of 2022, there was a peak in the number of searches. For the past five years, the pattern of searching has been the same; however, in May of 2022, there was a peak in the number of searches (Figure 3). It enjoyed widespread popularity among the people living in regions such as Almaty, Atyrau, West Kazakhstan, Mangystau, and East Kazakhstan (Figure 4).



Figure 1 – Search dynamics of climate change for the last year (January 2023- January 2024).

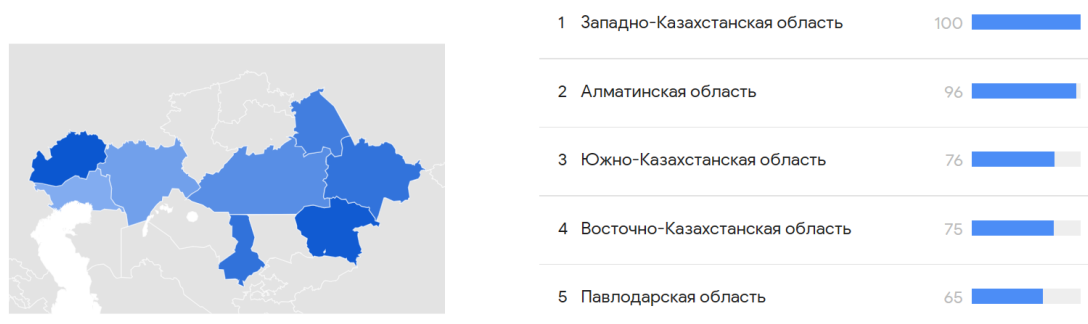


Figure 2 – Search map of climate change for the last year (January 2023- January 2024).

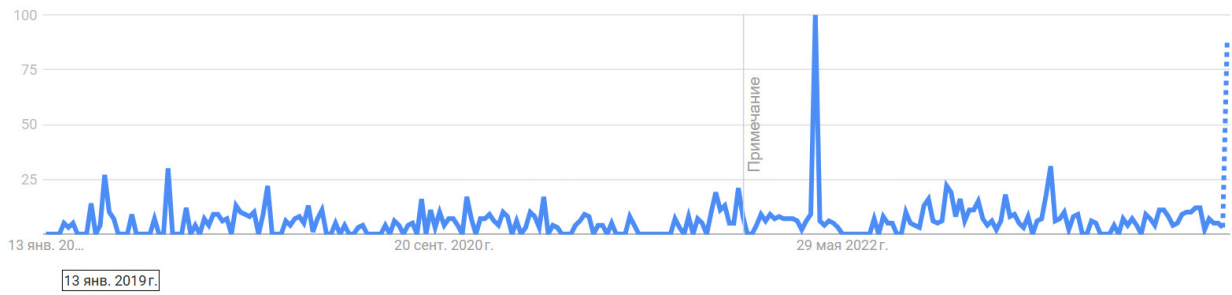
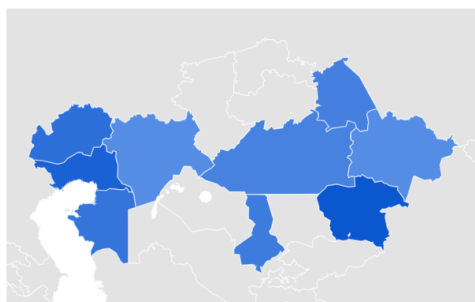


Figure 3 – Search dynamics of climate change over the last 5 years (January 2019- January 2024).



1	Алматинская область	100
2	Атырауская область	91
3	Западно-Казахстанская область	79
4	Мангистауская область	74
5	Южно-Казахстанская область	68

Figure 4 – Search map of climate change over the last 5 years (January 2019- January 2024)
Sources of figures: Google Trends

Results

Climate change is a complex topic that includes various dimensions such as academic, political, economic, social, and others. Therefore, it is covered by various media outlets and their journalists. Consequently, the majority of journalists who write about climate change are not exclusively specialized in this subject. However, it appears that ‘climate journalists’ have acquired a considerable amount of expertise on the subject over the course of time (Schafer 2015).

A report of UNESCO reveals that there is a significant gap in addressing climate change in national education curricula. The study, conducted in 100 countries, found that only 53% of the curricula mentioned climate change, and the subject was often given low priority. This lack of emphasis on climate change education hinders the development of knowledge and capacity needed to effectively tackle the challenges posed by climate (Arora et Mishra 2023).

Kazakhstan’s media has extensively covered climate change, sparking various projects and discussions in response to this escalating concern. Below is an itemized list of the different aspects of the media’s reporting in Kazakhstan pertaining to climate change:

1. **Journalistic Training and Contests:** Kazakhstan conducted a virtual training program for journalists to deliberate on climate change matters within the country. Bloggers and journalists were allowed to take part in a competition and write articles about climate change, adaptation strategies, and the impact that climate change has on a variety of industries, including agriculture, ecosystems, and biodiversity (UNDP).

2. **Climate Policies and Targets:** Kazakhstan has made significant progress in its climate policies, including the revision of the Environmental Code, the reintroduction of the Emissions Trading Scheme, and the increase of its target for the amount of renewable energy it will produce by the year 2030. Nevertheless, the anticipated emissions

based on existing policies do not align with its climate objectives, and Kazakhstan stands out as one of the few nations that have not revised their climate targets to conform with the Paris Agreement (Climate Action Tracker).

3. Vulnerability and Adaptation: Kazakhstan's susceptibility to the effects of warming temperatures has been recognized in the sectors of agriculture, water resources, human health, and social and economic development. The nation has also implemented measures to tackle climate change, for instance the development of specific documents like the Eighth National Communication and the Fifth Biennial Report (World Bank 2021, UNDP 2023).

4. Temperature Increase and Consequences: As stated in a World Bank report, Kazakhstan is expected to experience a more rapid rise in temperatures compared to the global average. This will result in a consistent growth in the number of days with high temperatures. These findings have substantial ramifications for the nation's climate and diverse industries, such as agriculture and water resources.

5. Initiatives Supported by the Government and International Organizations: The Kazakhstani government, with the assistance of international organizations such as the United Nations Development Program and the World Bank, has been actively engaged in mitigating climate change. Taking immediate action to address climate change and the effects it has is one of the seventeen Sustainable Development Goals that are scheduled to be accomplished by the year 2030. Among these are the dissemination of the Doctrine of Achieving Carbon Neutrality Until 2060 and the formulation of the Long-Term Strategy that will be presented to the UN Framework Convention on Climate Change (UNDP 2023).

6. Kazakhstan has benefited from collaboration and support from international organizations including the World Bank, USAID, and the UNDP to mitigate the effects of climate change on the nation.

7. Enhancement of Media Development and Collaboration: Efforts have been made to bolster and cultivate media reporting on climate change in Kazakhstan. These initiatives encompass the advancement and fortification of autonomous media outlets, fostering cross-border cooperation, and the recognition of obstacles associated with climate change through journalism and blogging.

The media's comprehensive and varied coverage of climate change in Kazakhstan is evident in the

aforementioned aspects, which include discussions on policy, vulnerability, adaptation, and international cooperation.

Conclusion

To summarize, this research has conducted a thorough investigation into climate change, examining its worldwide effects and particular consequences in Kazakhstan. We utilized a mixed-methods approach, integrating qualitative and quantitative analyses, to examine media coverage, public awareness, governmental measures, and international collaboration in relation to climate change.

This investigation was conducted against the backdrop of the widely accepted scientific agreement that climate change is primarily caused by human activities. Anthropogenic activities, such as the burning of fossil fuels and the clearing of forests, have a substantial impact on the increase in global mean temperatures. The consequences of climate change have wide-ranging effects on multiple aspects of human existence, encompassing health, politics, food security, infrastructure, and the economy.

The media plays a prominent role in influencing public opinion and promoting knowledge regarding climate change. Significantly, global media organizations such as The Guardian, The Washington Post, and the BBC have a vital function in delivering comprehensive and empirically supported journalism. Nevertheless, this study also emphasized the difficulties and subtleties in media reporting, which involve the necessity of striking a balance between the significance of the news and the intricacies of scientific data.

The research specifically examined the susceptibility of Kazakhstan to climate change, as indicated by a World Bank report, which states that 75% of the population is very responsive to its effects. Kazakhstan's media environment has had favorable advancements, characterized by heightened media coverage, media competitions, and educational initiatives facilitated by foreign organizations and the United Nations. However, the country still faces obstacles in achieving comprehensive environmental journalism due to inadequate resources and limited attention from media owners.

An integrated approach was used to give a comprehensive knowledge of the media landscape and public perception in Kazakhstan, using findings from surveys, Google Trends analysis, and content studies. The study also emphasized notable

endeavors and measures implemented by the Kazakhstani government, such as modifications to the Environmental Code and heightened objectives for renewable energy. Measures such as vulnerability assessments and adaptation strategies are currently being put into action to tackle the effects of climate change on agriculture, water resources, and human health.

Within the realm of education, the study has discovered a notable deficiency in the inclusion of climate change in national curriculum, impeding the acquisition of the necessary information to effectively handle climate-related issues. It is

imperative to focus climate change education and augment public comprehension.

This research establishes a basis for further investigations, highlighting the significance of ongoing cooperation among media, governments, and international organizations in tackling the intricate difficulties presented by climate change. In the pursuit of sustainable development goals and carbon neutrality, it is imperative to prioritize effective communication, education, and proactive regulations. These factors play a vital role in minimizing the effects of climate change, both at a local and global level.

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Internet resources

- Evidence | Facts – Climate Change: Vital Signs of the Planet (nasa.gov)
- Scientific Consensus | Facts – Climate Change: Vital Signs of the Planet (nasa.gov)
- Climate change (who.int)
- <https://climateknowledgeportal.worldbank.org/country/kazakhstan/climate-data-historical>
- 5 Kazakhstan – Climate Performance Ranking 2024 | Climate Change Performance Index (ccpi.org)
- History of Climate Science Research | Center for Science Education (ucar.edu)
- A brief history of climate change discoveries (ukri.org)
- Climate Change in the Media: Public Perception and the Responsibility of News Outlets – Earth Day
- Best media coverage of climate change (ca-climate.org)
- Media Contest: Change for Climate in Kazakhstan | United Nations in Kazakhstan
- Reducing temperatures: Kazakhstan takes action against climate change | United Nations Development Programme (undp.org)
- Kazakhstan | Climate Action Tracker
- Energy and Environment | Kazakhstan | U.S. Agency for International Development (usaid.gov)

Developing Journalism – Exposing Climate Change in Central Asia | n-ost
Изменение климата – Demoscope
analiticheskiy_otchet_rus.pdf (undp.org)

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