



## **How rural Mongolians understand climate change: knowledge, attitude and practice survey**

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### **Abstract**

Over the last 80 years, Mongolia's average annual temperature increased by 2.36°C. The population groups, in particular herder groups are likely to be disproportionately affected due to not only their exposure to shocks and stresses but also their limited capacity to withstand and respond to climate induced disasters and risks. Mongolia's Climate change mitigation and adaptation policy goals can succeed and can be sustainable if the public, key stakeholders and policymakers support effective action. The priorities of protecting vulnerable groups to climate change, empowering the public to respond to climate induced risks were also mentioned in the Nationally Determined Contributions. However, no studies have been conducted to identify what opportunities exist to increase knowledge and promote positive attitudes and practice among the rural population and vulnerable groups. This 'Climate Change Knowledge, Attitude and Practice Survey in Mongolia' was commissioned by the Global Green Growth Institute and the Ministry of Environment and Tourism. The purpose of the Survey was to assess awareness, knowledge, attitudes, practice and media consumption related to climate change among the population including the herder communities. The results of the study inform the development of a national awareness-raising campaign strategy to improve public awareness and capacity-building activities to mainstream climate change in national policies. The survey covers awareness, knowledge and attitudes of entire communities, namely their observations about weather, environmental and climate changes, understanding of causes and effects. The survey reveals capacity needs of stakeholders and priorities needed for mitigation and adaptation strategies at community and national levels. It focuses on rural community's access to information about CC and strategies for effective awareness campaigns.

### **Introduction**

The Mongolian climate is harsh and continental due to its unique geographical location in the center of the Eurasian continent. It is at a high altitude above sea level, is surrounded by tall mountains, and is in a remote location far from the sea. Mongolia faces some of the most pronounced climate change risks of any country in the world. This includes rapid desertification, water scarcity, changing precipitation patterns, and seasonal intensification of extreme weather events<sup>1</sup>. The country has extreme weather conditions, fragile ecosystems, and prominent pastoral livestock and rain-fed agriculture sectors, making Mongolia vulnerable to climate change risks that affect the economy, livelihoods and traditional cultures.

High temperatures are likely to increase the frequency and severity of heatwaves and droughts, while *dzud* (extreme cold, harsh winter natural phenomenon unique to Mongolia) will become more frequent and fiercer. Extreme events such as landslides, flash floods and land erosion are highly likely to occur due to the increased intensity of extreme rainfall. More frequent and intense drought conditions will accelerate the rate of desertification of previously productive pasture and grazing land. The number of extreme weather events, including drought, *dzud* and flooding has doubled in the last 20 years and the devastating socio-economic impact caused across the country is well documented. In addition to these extreme events, the impacts of climate change affect public health and livelihoods – both directly and indirectly. The increase in respiratory illnesses (12%) and cardiovascular disease (8%) is highly common among the population depending on the regions and is expected to rise due to climate impacts.

Animal husbandry continues to play a vital role in Mongolia's economy, employment, and export earnings. However, with increasing livestock density and the impacts of climate change, approximately 70% of the country's pastureland is now degraded. This degradation has led to a decline in the quality of livestock products, such as meat, dairy, wool, and cashmere, which are essential to the economy and account for over 80% of the food sector. Mongolia's agriculture sector stakeholders claimed that agriculture is the most vulnerable to climate change impacts. They pointed out the need for sufficient regulation to balance the livestock population and better controls over meat, cashmere and dairy production. Moreover, the technical capacity of the sector, particularly at the academic and university levels, was considered sufficient by the availability of a large amount of research linking climate change to agriculture and livestock. However, on the overall issue of climate change, the national data reports about the lack of qualified and competent personnel or experts at the sectoral and organizational levels.

## Methods

The survey assessed the general awareness, knowledge, and attitudes of rural Mongolians regarding climate change. It explored their observations of weather, environmental, and climate changes, their understanding of the causes and effects of climate change, and their concerns about its impacts.

The survey employed a mixed-method, non-experimental, and cross-sectional approach, with a sampling design aimed at capturing results at the national level and across all regions. Data collection took place between September and November 2022 through face-to-face interviews conducted in 13 *aimags* and Ulaanbaatar city. A total of 2,804 respondents participated, of whom 51.9% were female, 48.1% male, and 36% (1,009) from rural areas. The survey employed a stratified, multi-stage cluster sampling method to select sites and respondents. Additionally, 49 key informants were purposefully chosen from national and local government, non-governmental organizations (NGOs), academia, media, and the private sector. Among the respondents were 402 herders (14.3%) and 20 farmers (0.7%), alongside government officials, civil society organization (CSO) members, business representatives, and others.

The majority (89.8%) of 402 herders lived in rural areas, particularly in the steppe zone (42.5%). Regarding gender, 55.2% of herders were male, compared to 46.9% among non-herders. Over half (52.0%) of the herders were aged 35–59 years, and educational attainment among herders was significantly lower; 84.6% had completed secondary education. Furthermore, only one-third (34.1%) of herders had purchased private livestock insurance. The rural population includes herders and farmers and other groups whose lives are vulnerable to climate change impacts. Those that had lower levels of completed secondary education were more likely to live in rural areas. Within the rural population, a distinction should also be made by age as well as it has been found that knowledge, attitude and practice levels differ with age.

During the interviews, questions on climate change mainstreaming capacity factors were asked, including demand, leadership, resources, technical capacity and institutional arrangements. A total of nine focus group discussions were conducted which included community representatives - men and women, youth, older people, herders, farmers, ethnic minorities, communities in *ger* areas, mining-affected areas, and remote border areas. The Survey examined how socio-economic status can influence climate change awareness, information needs, and the processing of climate-related information. In doing so, the team constructed and used a simple vulnerability index that measured different characteristics of a person that places them at higher risk of economic deprivation, health issues and social isolation in relation to climate change. A total of 13 characteristics were used to construct the index including age, disability, chronic illness, income, levels of education, internal migration status, and those who engaged in livelihoods vulnerable to climate change impacts. Using the index, the respondents were divided into two groups - 'less vulnerable' and 'vulnerable' - to allow for disaggregated analyses by vulnerability status. The survey did not include a "not vulnerable" category in the vulnerability index because the primary focus was on assessing varying levels of vulnerability among respondents. By concentrating on the "vulnerable" and "less vulnerable" groups, the analysis could more effectively identify and compare disparities in climate change awareness, information needs, and information processing.

## **Results**

### ***Awareness, knowledge, attitudes and practices***

Those that participated in the Survey possessed relatively good awareness about climate change. Over two-thirds of respondents (67.3%) said they had heard about climate change and nearly half of respondents (46.6%) stated that climate change had affected their lives and livelihoods in the last 10 years. Moreover, the majority of respondents (84.0%) agreed that human activity is the main cause of climate change. However, citizens in both rural and urban areas demonstrated poor knowledge, attitude and practice regarding climate change.

Rural respondents' (36% of the total survey participants) knowledge about the causes and effects of climate change was low; therefore, they are unlikely to believe that climate change is occurring globally and affects Mongolia. While they noticed more environmental changes and experienced natural disasters, they thought it frequently occurs in ten-year cycles and is natural. They were, however, more concerned with the negative effects of environmental changes, including seasonal changes, because it has the potential to affect their livelihoods. A high number of rural respondents were also willing to receive more information about climate change from the media.

The fact that many respondents thought they had a low understanding of climate change and awareness of the ways to cope with the effects of climate change should be taken as an opportunity for raising awareness. The Survey found that there was high demand for reliable and consistent information related to climate change. The majority of the respondents (85.4%) said they would like to receive more information related to the topic from the media. Key stakeholders - including local government officials, civil servants, journalists and others in the media sector - will play a crucial role in improving the public's understanding of climate change and their demand for climate change information. However, those who were in the position to inform and engage the public also had a low understanding of climate change and lacked resources.

### ***Media consumption and communication***

Television, or TV, (73.6%) and the internet (63.7%) were the primary sources respondents used to obtain information on important topics - such as politics, the economy, health, education and the environment. The

mobile phone was the most accessible device to reach people from all segments. More than 99.1% of the respondents who used mobile phones said they use their mobile phone, or someone else's, 'everyday' or 'occasionally.' In terms of trustworthiness in sources of information, TV was the fourth most trusted source of information (67.5%) after trainings and meetings (87.3%), local authorities (83.6%), and family and friends (73.9%). Trust in internet was the lowest (29.8%)

### **Discussion, Conclusions, Implications**

The research revealed that most Mongolians surveyed had observed changes in weather patterns during their lifetimes, such as an increase in extreme temperatures and weather events. However, public understanding of climate change was generally limited, particularly in rural areas, including among local government representatives. While 84% of respondents agreed that human activity is a cause of climate change, rural respondents—such as herders and farmers—primarily attributed climate change to common environmental issues like mining and livestock overgrazing. The survey also highlighted a strong demand for reliable and consistent information on climate change. Science-based, consistent awareness of climate change and its impacts can empower herders and farmers to strengthen their resilience, enhance their adaptation capacity, and better prepare for potential climate events.

One of the most significant barriers to improving the public's understanding of climate change has been a lack of leadership in communicating information about climate change in Mongolia. Although multiple government and non-governmental agencies could potentially take a leadership role on climate change awareness, they lack the resources to do so. They also have not prioritized information and communication as a response to climate change. There have been efforts to raise awareness on the topic through the media and press in the past. However, these efforts did not reach a broader audience and have not made an impact due to a lack of synergy and coordination. Capacity-building, raising awareness, information dissemination and coordination of responsibilities are mandated to government organizations. However, due to inconsistency and instability, the activities have been largely ineffective. The multi-stakeholder engagement approach in decision-making, policy development and implementation are currently insufficient and needs to be improved. Therefore, establishing a mechanism, and promoting leadership in communicating information about climate change, are the most crucial steps for effective awareness-raising in Mongolia. A pool of financial resources that donors can contribute to (and is specifically dedicated to climate change awareness) could be created. This would help the sustainability of the awareness-raising campaign, support future climate change and communication efforts, and improve coordination between stakeholders working in the field.

Given the limited finances allocated from the state budget, it will be crucial to utilize other available financial resources – such as foreign investments and donor support – that can help with climate change awareness-raising and capacity-building. Communication, information, and awareness-raising initiatives in particular, will be central to Mongolia's response to climate change.

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