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IRIM
INDEPENDENT RESEARCH INSTITUTE OF MONGOLIA

The Socio-economic Baseline Study of Herders in the Great Gobi 'A' Strictly Protected Area

Final report

Ulaanbaatar
2022

CONTENT

ABBREVIATIONS

BMI	Body Mass Index
HH	Household
IRIM	Independent Research Institute of Mongolia
JSF	Joint Savings Fund
MPI	Multidimensional Poverty Index
TBD	To be determined
ZSL	The Zoological Society of London

LIST OF TABLES AND FIGURES

ACKNOWLEDGEMENTS

During 15 February to 15 March, the non-governmental organisation Independent Research Institute of Mongolia (IRIM) undertook a baseline survey on the *Socio-economic Baseline Study of Herders in the Great Gobi 'A' Strictly Protected Area*. The survey was on behalf of the Zoological Society of London (ZSL) which was funding the project Protecting Mongolia's Gobi Desert for Wild Camels and Herder Communities (2021-2024).

The objectives of the survey were to determine the Socio-economic Baseline Study of Herders in the Great Gobi 'A' Strictly Protected Area - using the Multi-dimensional Poverty Index (MPI) - and investigate their knowledge and attitudes related to the natural resources of the area, their degradation, conservation issues, and wildlife.

There was a lot of support from the ZSL team in carrying out the research, including the provision of valuable advice, guidance and information; especially from LASN Mongolia Director Tungalag.U, and Project specialist Bolor.R, and Myagmarsuren.Sh for providing valuable advice, guidance and information. We also would like to thank the local authorities, officials, partnership leaders and members, and rangers; all of whom actively participated in the study.

EXECUTIVE SUMMARY

This survey sought to determine the Socio-economic Baseline Study of Herders in the Great Gobi 'A' Strictly Protected Area - using the Multi-dimensional Poverty Index (MPI) - and investigate their knowledge and attitudes related to the natural resources of the area, their degradation, conservation issues, and wildlife.

A total of 69 households (HHs) from five *baghs* of the Great Gobi Special Protected Area A were interviewed with a questionnaire. The survey report consists of four sections, namely:

- Study Method and Methodologies,
- Socio-economic situations of the herders along Local Protected Area,
- the natural resources of the Local Protected Area and their degradation and conservation,
- Conclusions and Recommendations.

The MPI, which demonstrates the living standards of the target groups, was 0.114. The share of poor HHs among the total of all HHs was 28.2%; 11.4% of which were deprived according to all indicators.

Even though HHs' ownership of asset and infant mortality rates were moderate, their living standards according to other indicators were quite low. For example, most HHs were poor in terms of their access to reliable sources of drinking water, sanitation, type of flooring in their accommodations, and fuel consumption for cooking. In terms of HHs' livelihoods, incomes had increased by 8.6% in 2021 from the previous year but the expenditure increased by 7.7%. The main sources of livelihood included milk and dairy products, sheep's wool, cashmere and meat. Household incomes from the sales of wool and cashmere increased in 2021, compared to 2020, while income from sales of livestock and meat declined.

The share of the HHs with savings accounted was 31.9%. The number of HHs with loans increased by 8.7% in 2021 from the previous year; in all the *baghs* surveyed. Participation in the Joint Savings Fund (JSF) ass low, with only 2.9% of all the HHs involved.

Water scarcity was the main concern for local people. They highlighted the need for increasing the number of water points, and the building of wells. Most respondents (64.7%) agreed that pasture conditions had deteriorated due to insufficient water. They believed that increasing water points, building wells, reducing the number of livestock (with more focus on quality), fencing pastures, rotation, and cloud seeding, would all be helpful to rehabilitate and conserve pastures. It was evident that the Project needs to implement saxaul forest conservation activities. More than half (55.1%) of respondents said that sexual forest condition had deteriorated in the previous three years.

Most respondents (75%) said they did not know if there had been any changes in poaching, saxaul harvesting, medicinal plant collection, or artisanal mining, over the previous two years. The location of wildlife and poaching areas overlapped. Poachers were more likely to be locals (*soum* and *aimag* centre residents).

The number of the local people with information and knowledge of the management and operation of the Great Gobi Special Protected Area A was quite low. Nearly half (43.5%) said that they had '*little*' or '*no knowledge*' of the local flora and fauna. One quarter (24.6%) of respondents were members of the community-led pasture management partnership. The only source of information on climate changes for 91.6% of respondents was television, which needs attention.

One. SURVEY METHODS AND METHODOLOGIES

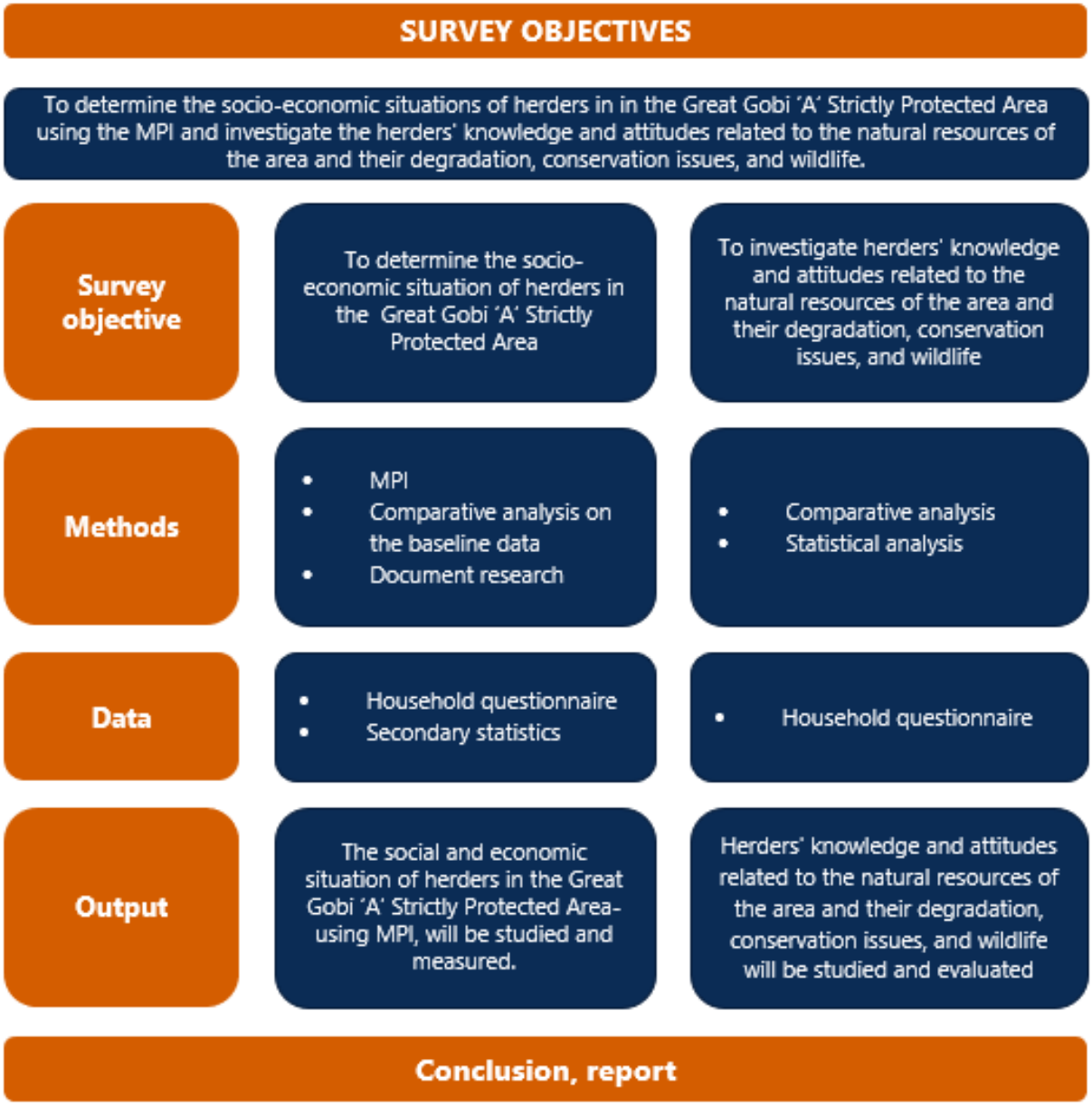
Objectives

The survey sought to determine the Socio-economic Baseline Study of Herders in the Great Gobi 'A' Strictly Protected Area – using the MPI - and investigate their knowledge and attitudes related to the natural resources of the area, and their degradation, conservation issues, and wildlife.

Methodology

The figure below shows the methodological framework of the survey. To achieve the above-mentioned objectives, two methodologies were employed.

Figure 1. Methodological framework.



Methodology 1. The MPI was used to measure the Socio-economic Baseline Study of Herders in the Great Gobi 'A' Strictly Protected Area. Depth of the poverty was measured in two dimensions, as follows.

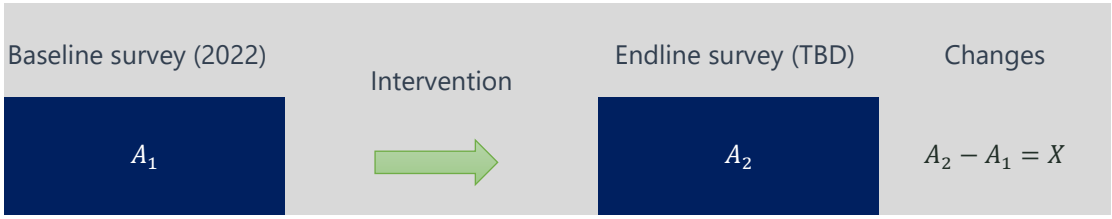
- The incidence of poverty in the given population, or the proportion of people affected by multidimensional poverty (given sample).
- The intensity of their deprivation, or the weighted average ratio of deprivation (given sample).

The calculation of the MPI is presented in detail in the report section, Socio-economic Situation of Herders.

Methodology 2. Simple statistical analysis was used to study the knowledge and attitudes (of the communities) related to natural resources, their degradation, and conservation of the Great Gobi Special Protected Area A. In the analysis, a total of 69 HHs' data was used, and a comparative analysis was conducted on the key findings (with demographic disaggregation).

Study design. The baseline survey design is based on an interrupted time series as shown below.

Figure 2. Survey design.



Here, A1 is the baseline survey result for the target group; A2 is the follow-up, or end-line survey results for the target group. X is the outcome of the project as of 2024. Therefore, the final impact of the intervention is measured by X.

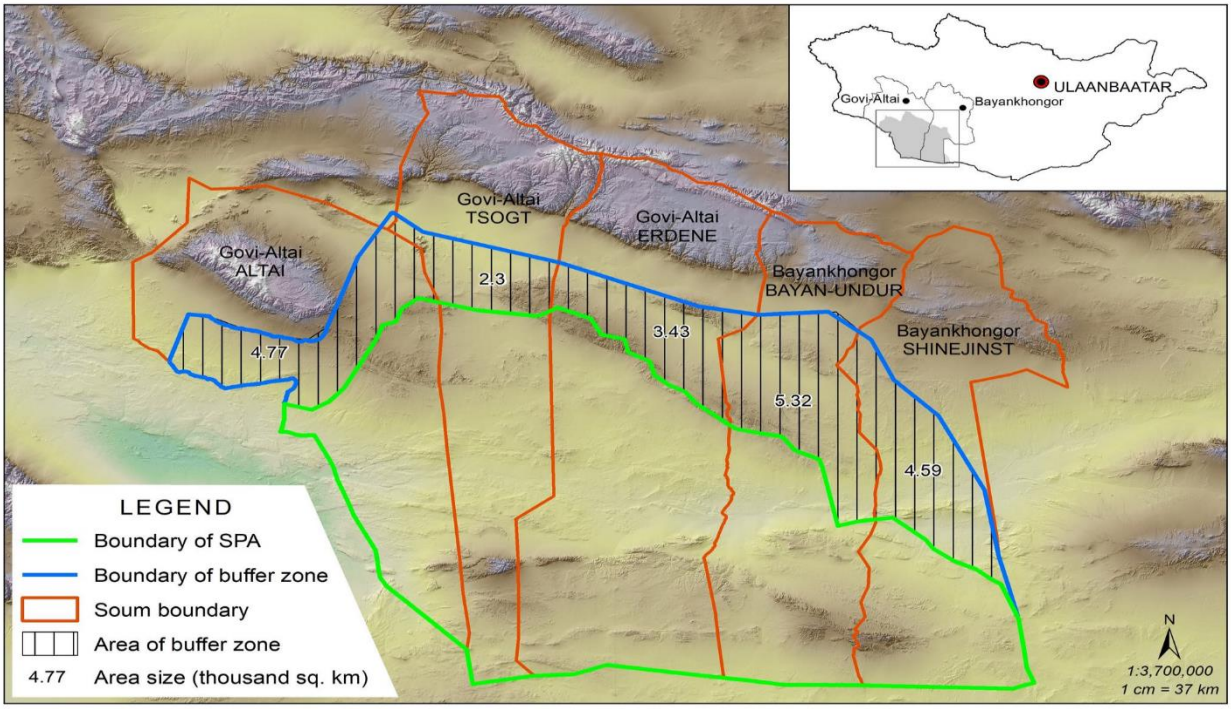
The baseline survey needs to be measurable, comparable and repeatable in the following aspects:

- **Monitoring and evaluation studies** The baseline survey of the Socio-Economic Situations Of The Herders in the Great Gobi Strictly Protected Area A Project should be comparable with further project monitoring and evaluation surveys. Therefore, the baseline survey will use methods comparable with the Endline survey.
- **Location.** It belongs to Great Gobi 'A' Strictly Protected Area: Two baghs of Bayankhongor province (Idren in Bayan-Undur soum, and Urtyn gol in Shinejinst soum) and three locations Gobi-Altai province (Urt bagh in Altai soum, Bayantooroi village in Tsogt soum, and Ulziit bagh in Erdene soum).
- **Time.** The baseline survey was implemented from July 1, 2021 to April 25, 2022. The final survey is scheduled for 2024.

Geographical scope and sampling

The survey data took place in Bayankhongor aimag (Idren bagh of Bayan-Undur soum, and Urtyn bagh of Shinejinst soum), Gobi-Altai aimag (Urt bagh of Altai soum, Bayantooroi village of Tsogt soum, and Ulziit bagh of Erdene soum) all with the Great Gobi Special Protected Area A. Data collection was carried out in January 2022.

Figure 3. Geographical scope of the survey.



The baseline data were collected from the HHs from the sites shown in Table 1.

Table 1. Sample size, by location.

Target location	Sample size (HHs)	Portion of sample (%)
Bayankhongor aimag; Idren bagh, Bayan-Undur soum,	14	20.3
Bayankhongor aimag; Urtyn gol bagh, Shinejinst soum,	14	20.3
Gobi-Altai aimag; Urt bagh, Altai soum,	10	14.5
Gobi-Altai aimag; Bayantooroi village, Tsogt soum,	16	23.2
Gobi-Altai aimag; Ulziit bagh, Erdene soum,	15	21.7
Total	**69**	**100.0**

Two. SOCIO-ECONOMIC SITUATION OF HERDERS

Respondents' general information

This section outlines the information collected from 69 HHs within the selected five soums (Altai, Erdene, and Tsogt in Gobi-Altai aimag, and Bayan-Undur and Shinejinst in Bayankhongor aimag).

A total of 69 HHs were surveyed, with adults and/or persons with more control over decision making within the HH invited to answer questions. Fifty-two (52) of the 69 respondents were heads of HHs, 14 were spouses, and three were sons or daughters. Fifty-two (52, 75.4%) of the respondents were male and 17 (4.6%) were female. A total of 309 people's information was collected from among the 69 HHs.

The youngest respondent was 20 years old, the oldest 79, and the average age of 41 years. Figure 4 shows the age groups of the respondents in accordance with the National Statistical Office (NSO) methodology. More than one third (39.1%) of respondents were aged 30-49 years. Respondents from the age group of 20-29 years accounted for 14.5% of the total. Respondents aged over 50 years made up 18.8%.

Marital status of the respondents, by gender, is shown in Figure 5. As seen in the figure, no unmarried women, nor divorced men were covered in the survey. However, 13.5% of the 52 male respondents were single. This illustrates that a majority of the respondents were married, irrespective of their gender. However, the proportion of unmarried men was higher than that of women.

Figure 4. Respondents, by age groups, N=69

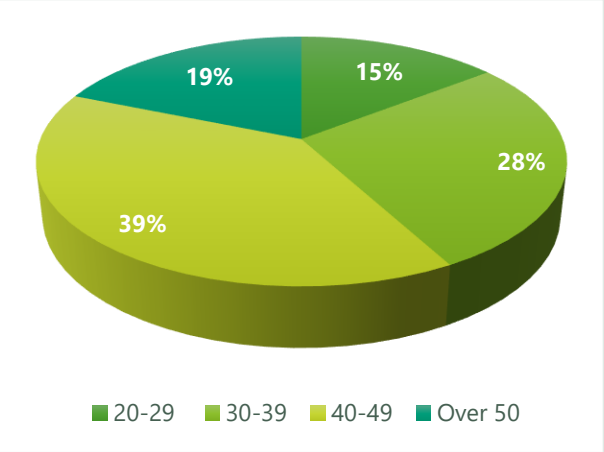
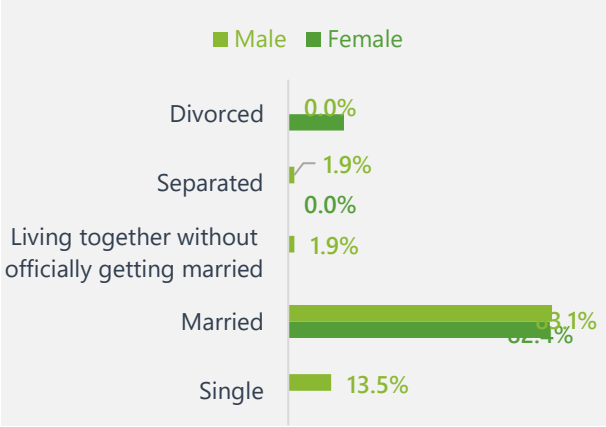


Figure 5. Marital status, by gender, N=69



The education attainment of respondents was relatively low. As shown in Figure Figure 6, only 5.8% of respondents had a bachelor's degree or higher, and the remaining 94.2% had upper secondary or lower secondary education only. In particular, 39.1% respondents had upper secondary education, 42.0% lower secondary education, 10.1% primary education, and no 2.9% had no education.

Figure 6. Educational attainment, N=69.

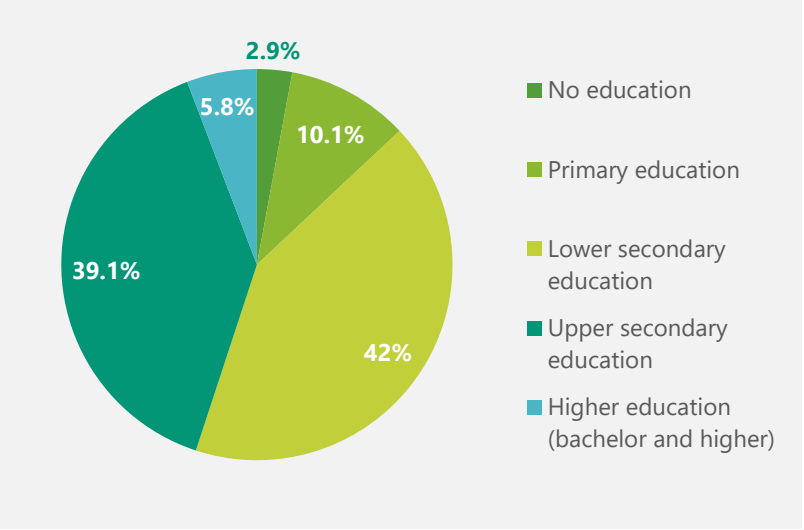
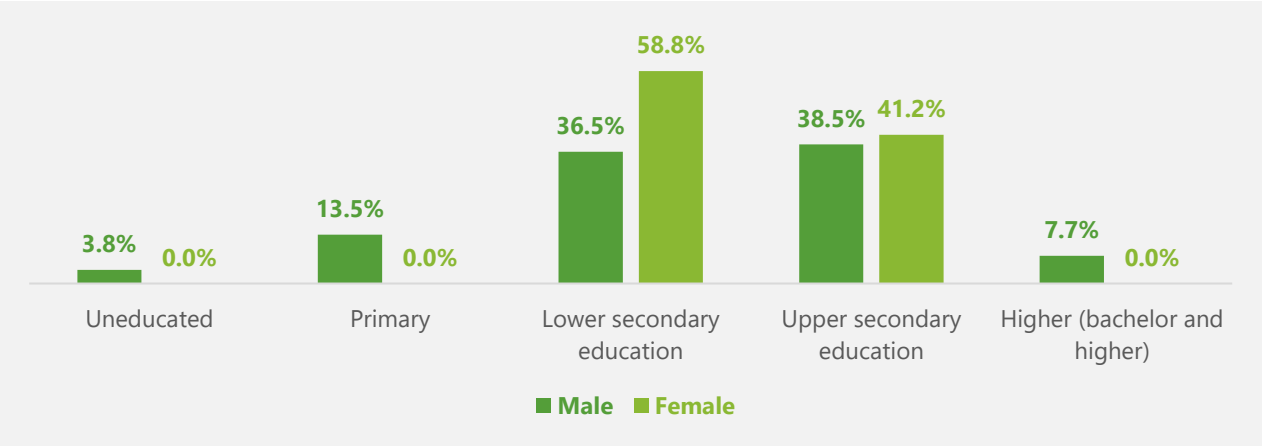


Figure 7 shows the respondents' education attainment by gender, where men's educational attainment tended to be lower than women's. Conversely, the proportion of women with higher educational attainment was low even though they were higher in terms of the attainment of lower and upper secondary education. This could be because the ratio of the female respondents was much lower than males.

Figure 7. Educational attainment by gender, N=69.



The average number of HH members was four, with a maximum of nine and a minimum of 1. Nearly one quarter (23.2%) of respondents were from HHs with one to three members, 69.6% from HHs with four to six people, and 7.2% from HHs with seven to nine people.

Table 2. Ethnicity of respondents.

Vulnerable group	People from selected HHs	
	Number	%
Khalkh	309	100.0
Buryat	0	0
Kazakh	0	0
Uuld	0	0
Durvud	0	0
Other	0	0
Total	**309**	**100.0**

All of the 69 HH's members were Khalkhs; there were no one was Durvud, Kazakh, Uuld, Khoton, Darkha nor Buryat.

Household members' education and health

This section describes HH members' vulnerability, education, and health.

Vulnerability. Among the 309 people from the 69 HHs, there was one orphan, two widows/widowers and nine people with disabilities. There was no one with a severe illness, and mortality children under five years of age. Accordingly, 12 people (3.9%) among the HHs' members were vulnerable (Table 3).

Table 3. Vulnerability of HH members.

Vulnerable group	Baseline study N=309	
	Number	%
Orphan	1	0.32
Widow/widower	2	0.65
Person with disability	9	2.91
Total	**12**	**3.90**

Education. The educational attainment of the respondents was relatively low. As shown in Figure 8, 18.7% of all HH members had a bachelor's degree or higher, and the remaining 81.3% had a non-bachelor's degree, a technical or vocational education, or lower. For example, of 219 adult members of the HHs, 34.7% (76) had an upper secondary education, 32.4% (71) a lower secondary education, 11.4% (25) had a primary education, and 2.7% (6) had no education.

Figure 8. Respondents' educational attainment, N=219.

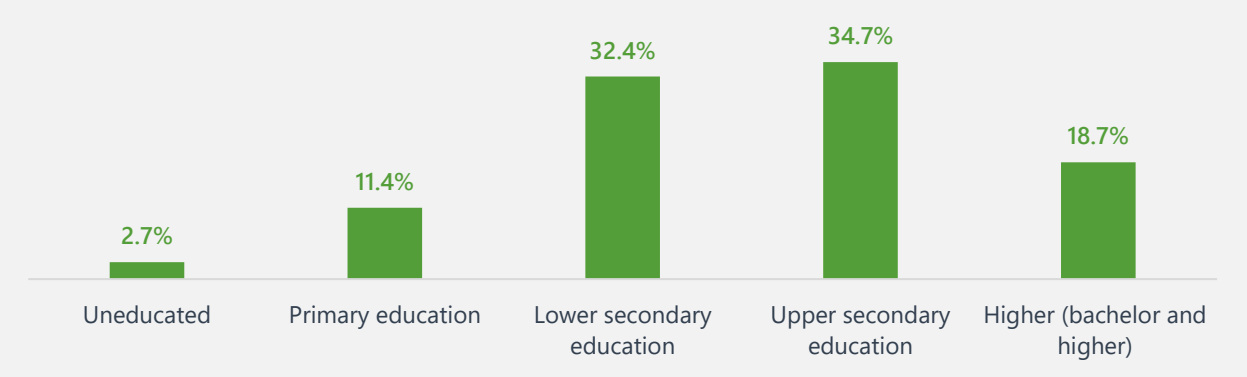
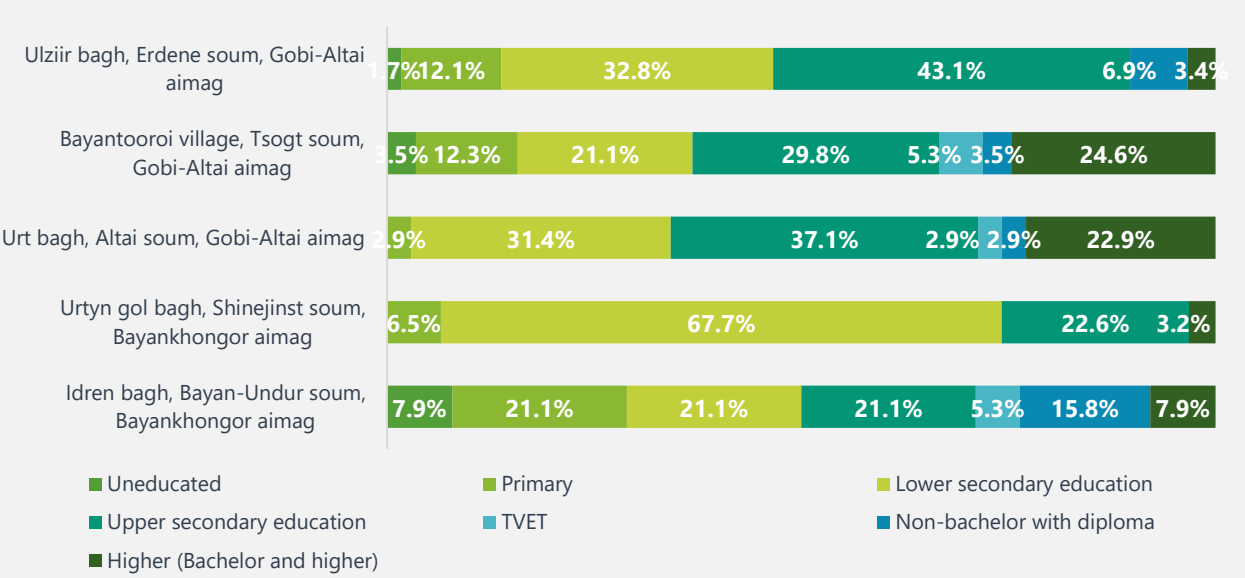


Figure 9 shows the educational attainment of the respondents, by baghs and soums. One fifth (22.9%) of respondents from Urt bagh (Altai soum, Gobi-Altai aimag) and 24.6% from Bayantooroi village (Tsogt soum, Gobi-Altai aimag) had a relatively higher level of education. A tenth (7.9%) of respondents from Idren bagh (Bayan-Undur soum, Bayankhongor aimag) were uneducated; which relatively higher than other areas.

Figure 9. Education attainment by location, N=219.



There were 24 HHs with a member with primary (or lower secondary) education; fifth grade or lower. This represented 34.8% of the total HHs surveyed, indicating that adult members of HHs had relatively low levels of education. There were two HHs, where school-age children (6-14 years) had dropped out of school.

Health. Most 94.2%,of the selected 69 HHs' members, were covered by health insurance, while the remaining 5.8% were not. Those who did not pay health contributions said they did not need it. Health insurance coverage among the HHs' members is shown in Figure 10.

Figure 10. Health insurance coverage, N=69

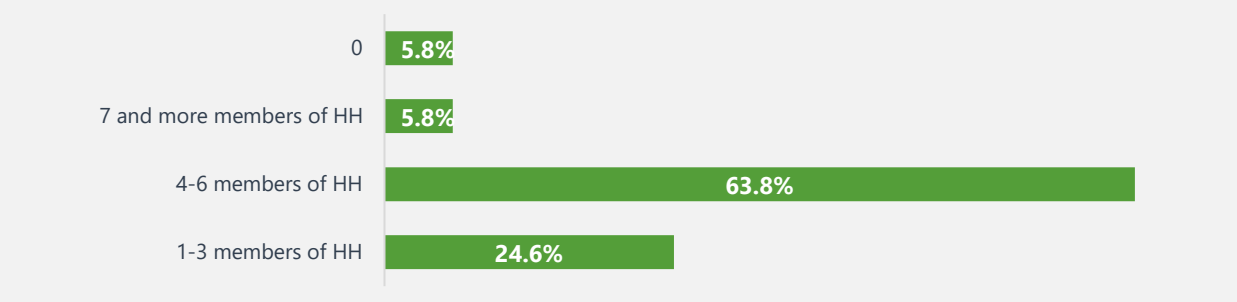
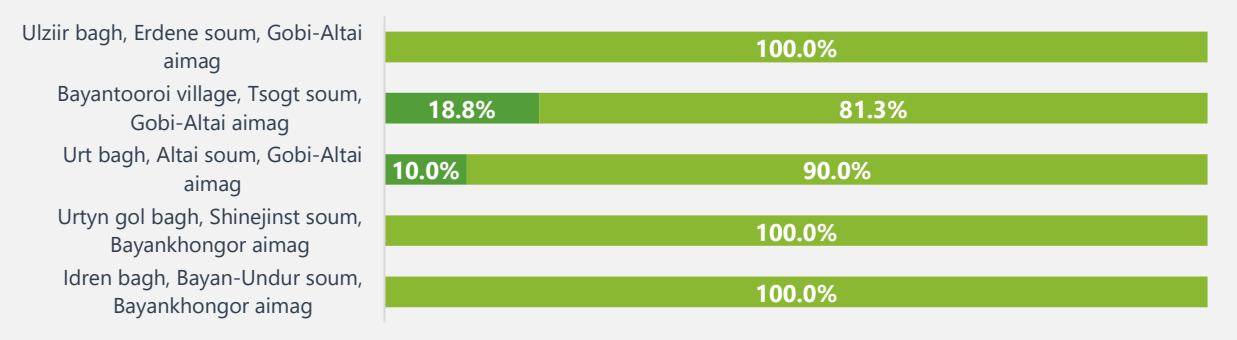


Figure 11 shows the respondents' health insurance coverage by their locations.

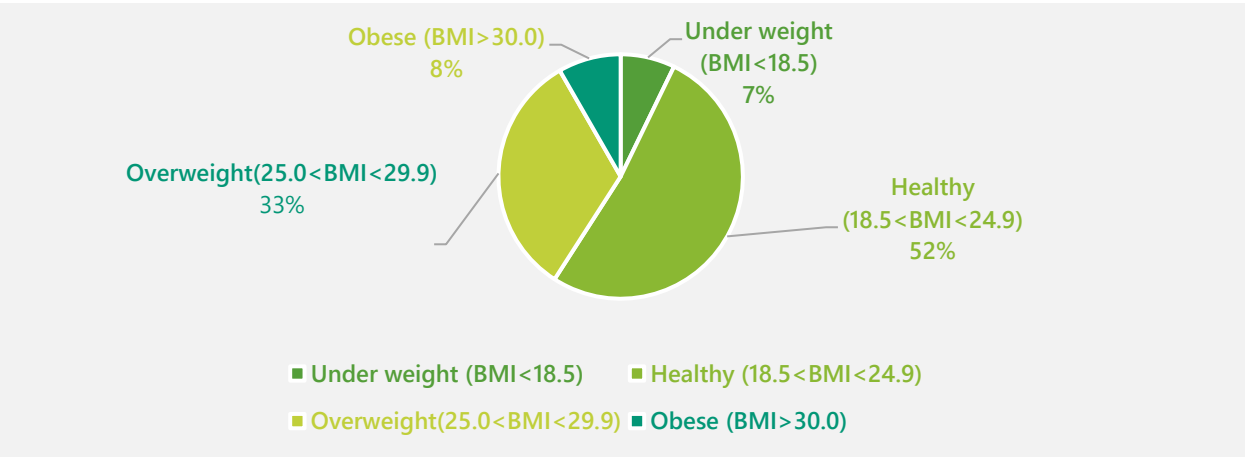
At least one member of all the HHs within Idren bagh (Bayan-Undur soum, Bayankhongor aimag), Urtyn bagh (Shinejinst soum, Bayankhongor aimag) and Ulziit bagh (Erdene soum, Gobi-Altai aimag) were covered by health insurance. Coverage was much higher (90%) in Urt bagh (Altai soum, Gobi-Altai aimag) and 81.3% in Bayantooroi village (Tsogt soum, Gobi-Altai aimag).

Figure 11. Health insurance coverage, by locations, N=69.



Height and weight data of HH members were collected from each HH, and the body mass index (BMI) was calculated. The same methodology would be used in the Endline Survey as the BMI could illustrate the HH food security and nutritional status in the Baseline Survey. With the MPI, overweight adults and children are not considered to be malnourished, while adults with a BMI below 18.5 are considered. Figure 12 shows the state of health of the HH members according to BMI.

Figure 12. HH members' BMI, N=181.



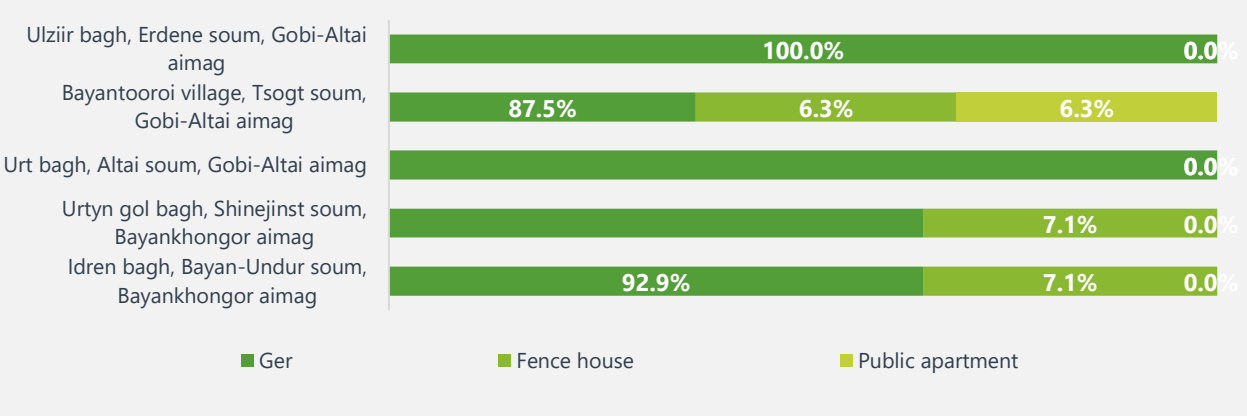
Many (40.4%) of the participants were overweight or obese. Conversely, 51.9% of all HH member were healthy. In addition, 7.2% of the HH members were underweight, or malnourished.

Household livelihoods

The MPI considers six indicators for standard of living. Three of them pertain to factors that affect women's health and living standards, such as: accessibility to clean drinking water, improved sanitation, and clean fuel consumption. Two indicators relate to the quality of housing at a basic level, which includes electricity and power supply, and the availability of flooring materials. The last indicator is related to consumer goods (Alkire Sabina, et al., 2011), which can be counted as assets, such as: radios, videos, telephones, bicycles, motorcycles, cars and trucks, and refrigerators.

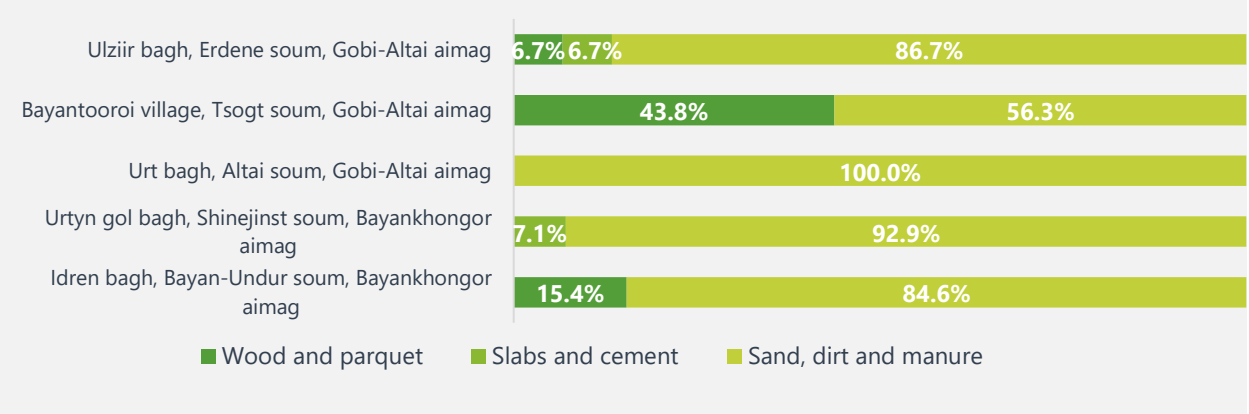
Housing and accommodations (ger and apartment). Most of the HHs (94.2%) occupied gers, fenced houses (4.3%) and publicly shared accommodations (1.4%). Figure 13 shows the type of accommodation of the HHs. There was no significant difference observed across the five target locations. For example, 92% or more of the HHs lived in ger apartments in the five locations, and 6-7% in fenced houses. However, 6.3% of the selected HHs in Bayantooroi village (Tsogt soum, Gobi-Altai aimag) lived in public accommodation.

Figure 13. Respondents' accommodation, by location, N=69.



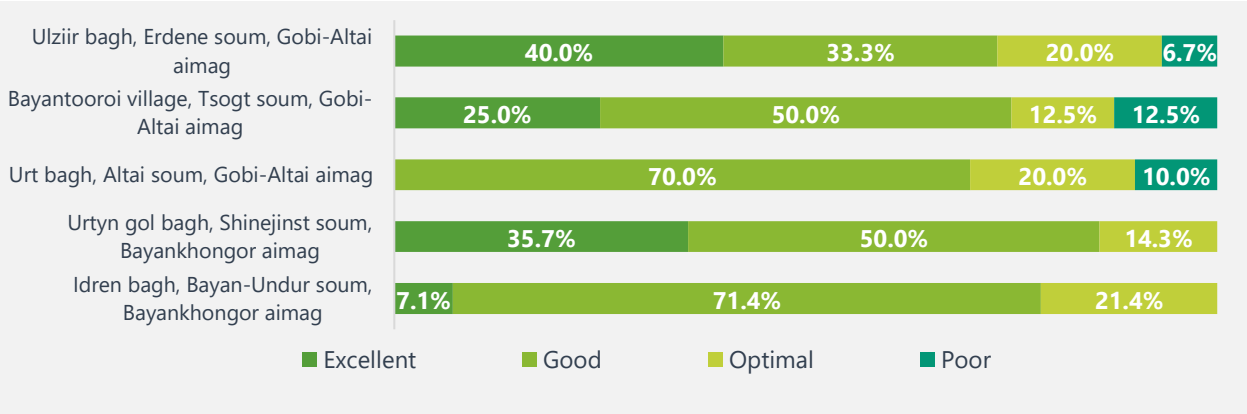
Regarding the main flooring material[1] of their home, 82.4% of the 69 HHs did not have anything, or had a compacted soil or dung floor only. That is, 82.4% of HHs were deprived according to on living standard indicator.

Figure 14. HHs' flooring materials, by location, N=69.



Most (76.8%) of the respondents rated their accommodation conditions as '*good*' or '*excellent*', whereas 5.8% rated them '*poor*'. The figure below shows the respondents' evaluations of their living conditions.

Figure 15. HH conditions, by locations, N=69.

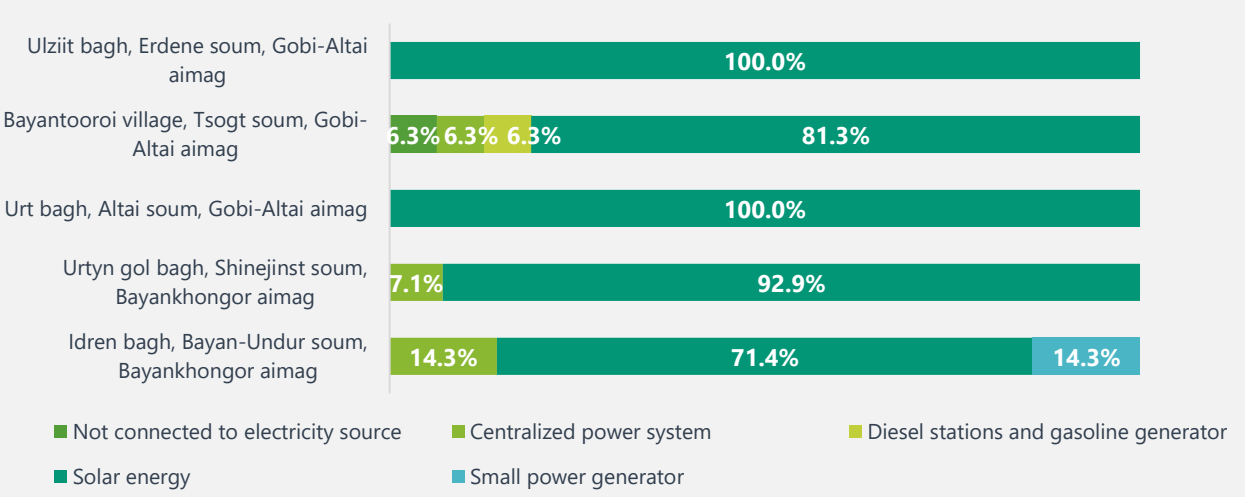


Electricity. Almost all (98.5%) of the HHs – all except one HH – had access to electricity. A few (5.9%) of them used main line power systems, 1.5% used diesel/gasoline generators, 88.2% solar energy, and 2.9% used small generators. Just one HH was deprived in terms of the access to electricity indicator. Figure 16 shows connectivity of the HHs to electricity and power sources, by target locations. There was no significant

[1] More to do with the traditional nomadic style of Mongolians

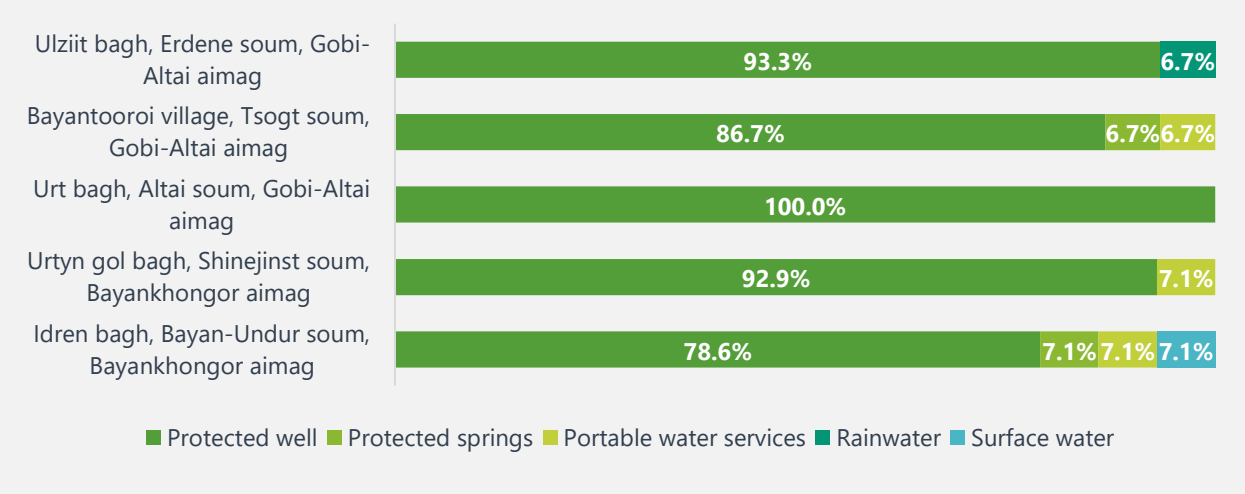
difference according to location. For example, in the target locations, 70% or more of HHs used solar energy. However, one HH in Bayantooroi village (Tsogt soum, Gobi-Altai aimag) did not have any source of electricity.

Figure 16. Connectivity of the HHs to electricity, by location, N=69.



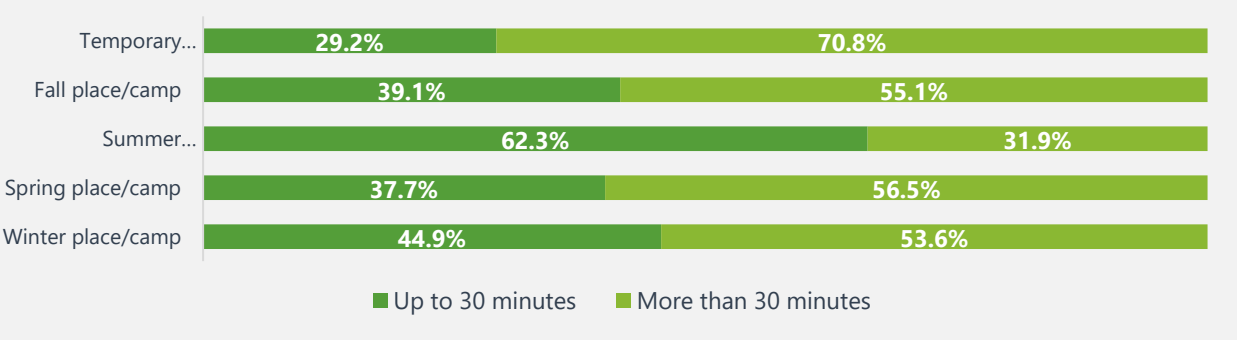
Drinking water. As the main source of clean drinking water, most of the HHs (89.7%) used protected wells, protected springs (2.9%), portable water services (4.4%) and surface water from rivers and streams (3%). Figure 17 shows the sources of drinking water of the respondents, by the target locations. There was no significant difference according to location. For example, 78% or more HHs used protected wells in all five target locations. One HH in Ulziit bagh (Erdene soum, Gobi-Altai aimag) used rainwater and one HH in Idren bagh (Bayan-Undur soum, Bayankhongor aimag) used surface water.

Figure 17. HH' sources of drinking water, by location, N=69.



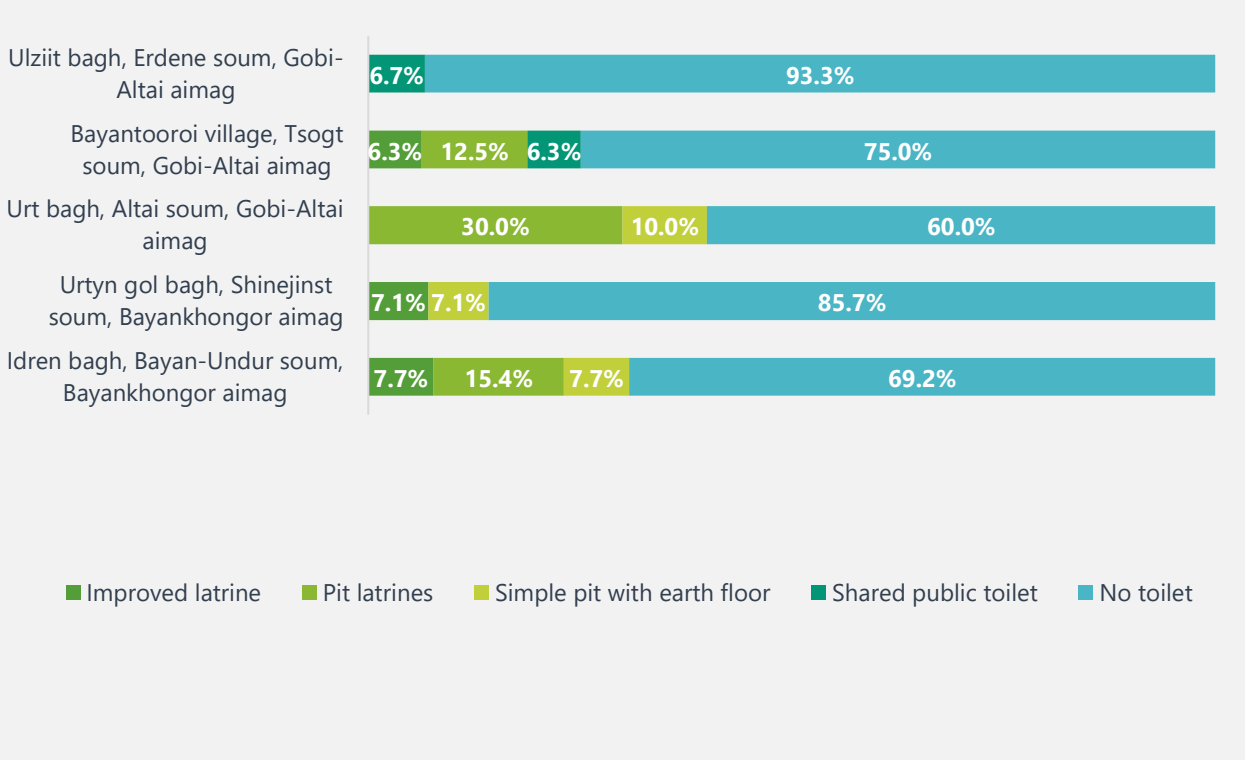
In terms of access to safe drinking water, it is considered to be in shortage, if it is not available within 30 minutes of the home. Clean drinking water sources include tap water, public taps, boreholes, pumps, protected wells, and protected springs. Along the threshold line, 46.8% used clean water and 53.3% had access to clean water. That is, 46.8% of the 69 HHs had good access to clean water, and the remaining 53.3% were considered to have poor access to drinking water, in terms of the living standards indicator.

Figure 18. Distance to reach clean water sources, N=69.



Hygiene. If a HH did not have access to adequate sanitation (or had to share a toilet) it is considered to lack improved sanitation. Acceptable sanitation facilities include latrines and walk-in toilets, as well as improved pit latrines (without shared ventilation). In addition, if a HH is dissatisfied with their situation, it is considered to lack acceptable sanitation. According to the survey, only 19.1% of HHs used improved sanitation, while the remaining 80.8% did not have public toilet. In terms of sanitation, 80.8% of HHs were deprived in terms of living standards. Figure 19 shows the types of toilets used by the target locations. In the five target locations, more than 60% of respondents said they did not have access to latrines[2]. For example, Ulziit bagh (Erdene soum, Gobi-Altai aimag), 93.3% of HHs did not have access to proper sanitation facilities.

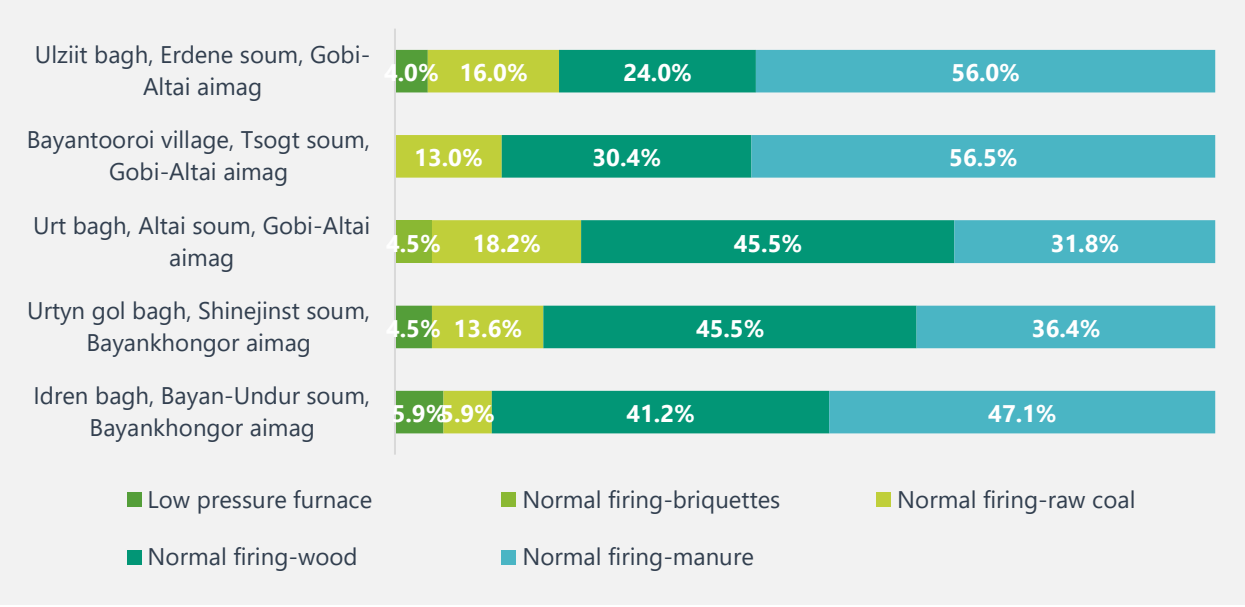
Figure 19. HHs' types of toilet.



Sources of heat and fuel. If a HH burnt wood, coal or dung, there was considered to be a shortage of clean fuel. Most (82.6%) of the HHs exhibited shortages of clean fuel, within this living standard indicator. Figure 20 shows the sources of fuel by target locations. In the five target locations, use of dung and coniferous fuels were relatively high; accounting for 56.0% of the HHs in Ulziit bagh (Erdene soum, Gobi-Altai aimag) and 56.6% in Bayantooroi village (Tsogt soum, Gobi-Altai aimag).

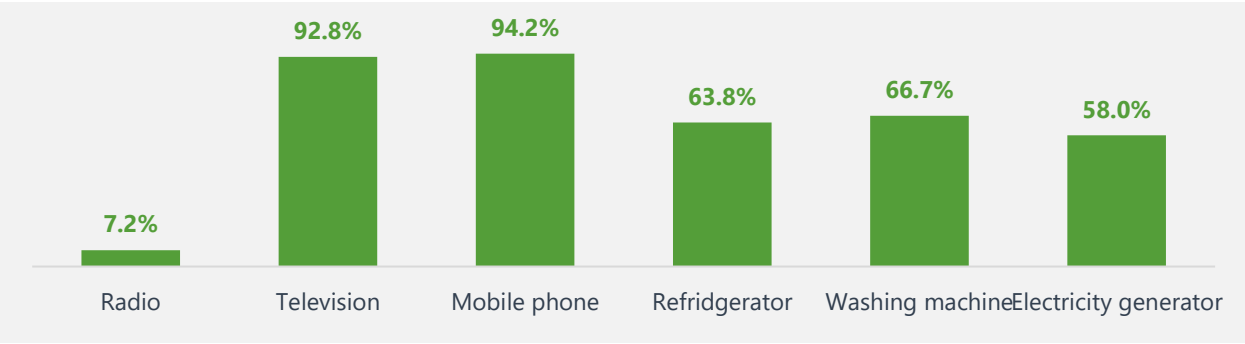
[2] Because of the traditional lifestyle of Mongolia, sophisticated toilets are not common in the rural areas.

Figure 20. Sources of heat and fuel, by locations, N=69.



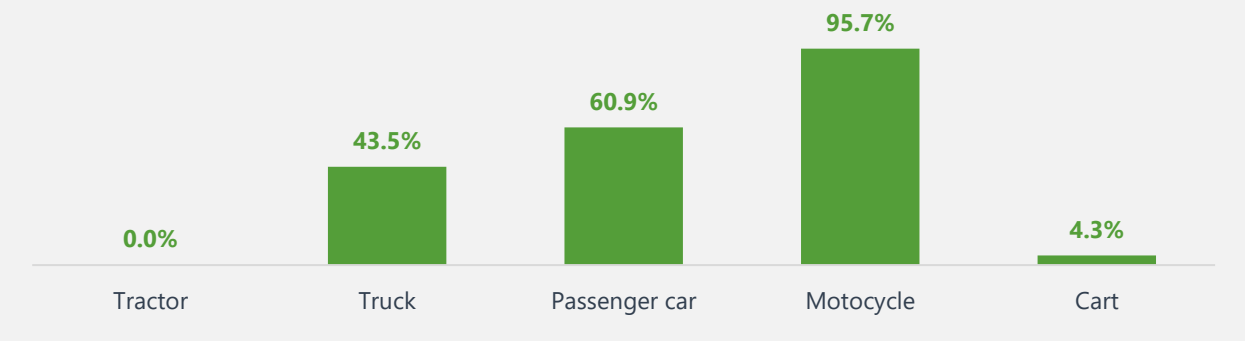
Asset ownership. A HH is considered to be deprived if it does not own at least one or more radio, video, telephone, bicycle, motorcycle, refrigerator, washing machine, silver bowl, or greenhouse (without a car or tractor). Most HHs owned more than one asset. The most common HH items included mobile phones, televisions, washing machines, and refrigerators.

Figure 21. HHs' assets, N=69.



In addition, 95.7% of the HHs had motorcycles, passenger cars (60.9%), trucks (43.5%) and carts (4.3%).

Figure 22. HHs' means of transport, N=69.



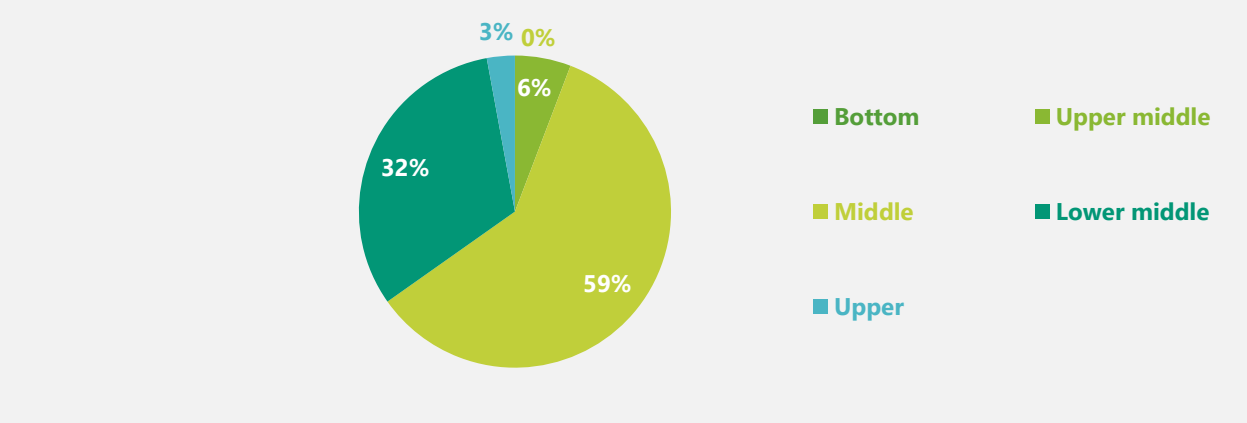
In terms of the asset ownership indicator of the MPI, no HHs were deprived.

Household socio-economic indicators

Household welfare. This section summarizes the socio-economic characteristics of the herder HHs in the Great Gobi Special Protected Area A and their changes. The changes are shown over the previous two to three years, and were measured by key indicators, such as: living conditions, income and expenditure, savings, and loan.

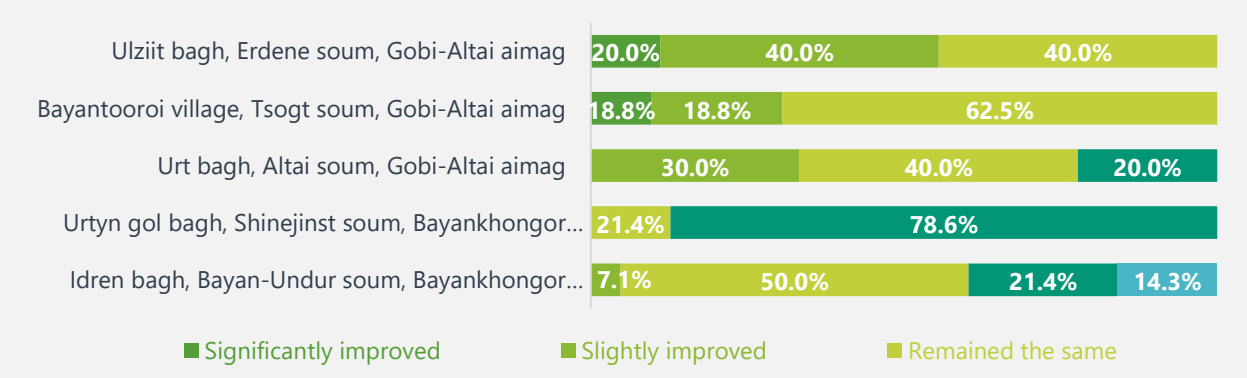
There was no respondent that considered themselves living below the poverty line. Some (5.8%) of the HHs considered themselves to be in the lower middle class, 59.4% in the middle class, 31.9% upper middle class, and 2.9% upper class.

Figure 23. HHs' welfare situation (self-evaluation).



In terms of changes in living standards over the previous two to three years, 2.9% of all HHs reported a deterioration, 23.2% slightly deteriorated, 43.5% remained the same, 18.8% slightly improved, and 11.6% significantly improved. By the target location, 14.3% of the 14 HHs in Idren bagh (Bayan-Undur soum, Bayankhongor aimag) said their living standards had deteriorated; whereas none in other baghs felt that living standards had deteriorated. Three quarters (78.6%) of respondents in Urtyn bagh (Shinejinst soum, Bayankhongor aimag) and 20.0% in Urt bagh (Altai soum, Gobi-Altai aimag) experienced slight deterioration in their living standards. Most of those HHs that considered their living standards to have deteriorated were from the target soums of Bayankhongor aimag; which may have been due to the recent drought and dzud in the aimag.

Figure 24: Changes in the HHs' living standards, by location.



In terms of HHs' activities, 7.2% of all HHs ran ancillary farming, 100.0% animal husbandry, 1.4% subsidiary farming, and 2.9% artisanal mining. Most (88.4%) of all HHs were engaged in one type of activity, and 11.6% were engaged in two. By locations, HHs in Bayantooroi bagh (Tsogt soum, Gobi-Altai aimag) were more

likely to be engaged in agriculture, while artisanal mining and ancillary farming were more likely in Bayankhongor aimag.

Table 4. HHs' sources of income and subsidy, by location.

Sector	Respondents	HH location (number)				
		Bayankhongor aimag; Idren bagh, Bayan-Undur soum,	Bayankhongor aimag; Urtyn gol bagh, Shinejinst soum,	Gobi-Altai aimag; Urt bagh, Altai soum,	Gobi-Altai aimag; Bayantooroi bagh, Tsogt soum,	Gobi-Altai aimag; Ulziit bagh, Erdene soum,
No. of HHs	**69**	**14**	**14**	**10**	**16**	**15**
Sources of income (by sector), %						
Ancillary farming	7.2	0.0	0.0	0.0	31.3	0.0
Animal husbandry	100.0	100.0	100.0	100.0	100.0	100.0
Subsidiary farming	1.4	7.1	0.0	0.0	0.0	0.0
Small/artisanal mining	2.9	7.1	7.1	0.0	0.0	0.0

By the number of HHs' members earning income, 81.1% had two members working, 13.0% had three or more, and 5.8% had one only. In term of gender, in 5.8% of HHs female members were not employed at all, in 91.3% one female member was working, and in 2.9% it was two female members. Overall, 94% (65) of HHs had female members with income.

Table 5. HH members with income, by location.

Item	Respondents	HH location (number)				
		Bayankhongor aimag, Idren bagh, Bayan-Undur soum,	Bayankhongor aimag, Urtyn gol bagh, Shinejinst soum,	Gobi-Altai aimag, Urt bagh, Altai soum,	Gobi-Altai aimag, Bayantooroi bagh, Tsogt soum,	Gobi-Altai aimag, Ulziit bagh, Erdene soum,
Number	**69**	**14**	**14**	**10**	**16**	**15**
HH members with income (%)						
1	5.80	14.3	7.1	0.0	6.3	0.0
2	81.20	64.3	85.7	100.0	75.0	86.7
3	10.10	14.3	7.1	0.0	18.8	6.7
4	2.90	7.1	0.0	0.0	0.0	6.7
Female members of the HH with income (%)						
no income	5.80	21.4	7.1	0.0	0.0	0.0
1	91.30	71.4	85.7	100.0	100.0	100.0
2	2.90	7.1	7.1	0.0	0.0	0.0

There were 145 employed members in the HHs, of which 67 were women. The average annual income of female members was MNT 10,274,082, which was 11.8% lower than the average annual income of male counterparts.

Table 6. HH members' sources of income and employment status.

HH members with income	Female HH members with income (%)	Income sources	Income sources of female HH members	Annual income (MNT)		
				Male HH members	Female HH members	Differnce male & female
145	67	117	77	11,486,208	10,274,082	1,212,126

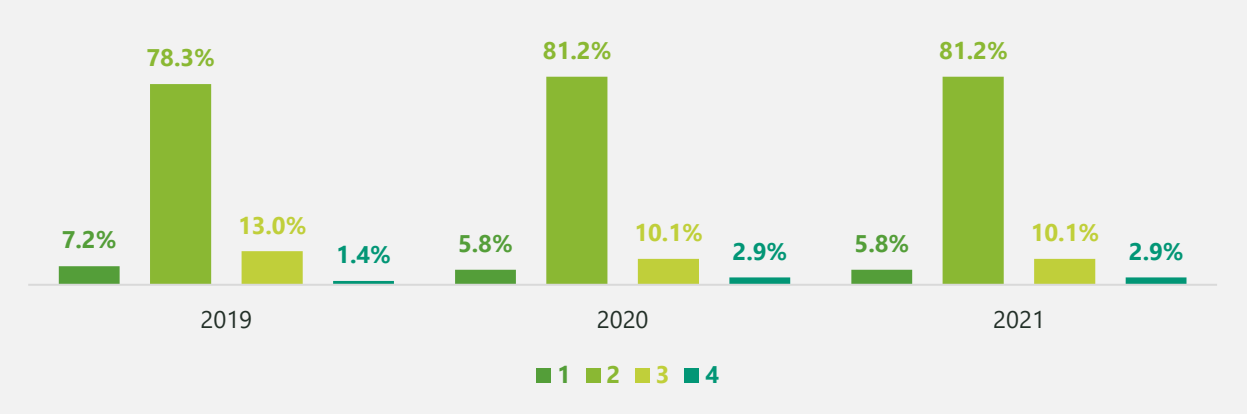
The average annual income of vulnerable HHs was MNT 231,097 higher than that of non-vulnerable HHs. However, the average annual income of poor HHs was MNT 3,633,184 lower than that of non-vulnerable HHs. Despite having a vulnerable member, the income of the HHs with vulnerable members was higher than that of the non-vulnerable HHs.

Table 7. Average income of HH with vulnerable and non-vulnerable members, MNT.

Item	HH with vulnerable member	HH with no vulnerable member	HH in poverty	HH not in poverty
Annual income	21,954,545	21,723,448	19,853,665	23,486,849

In 2019, 7.2% of all HHs had one member working, 78.3% had two members working and 14.4% had three or more members working. Conversely, between 2020 and 2021, 5.8% of the HHs had one member working, 13.0% had three of more, 81.2% had two members. There was a slight increase in the employment status of the HH members between 2019 and 2021, but not between 2020 and 2021.

Figure 25. HHs with incomes, by year.



Household income and expenditure. The annual income of the HHs was 10.6% higher than the national average (which was MNT 18,106,044 in 2020). In 2020, the average annual HH income was MNT 20,032,941, whereas 2021 it increased by 8.6% to MNT 21,760,290. Income from the sales of wool and cashmere increased by 23.5% in 2021, compared to 2020; the main reason for the increase in total HH income. Income from livestock and meat decreased by 7.5% compared to 2020, and the income from social benefits and pensions decreased by 4.4%. In 2021, income from artisanal mining had increased to an average of MNT 50,000.

Table 8. HHs' average income, 2020 and 2021, MNT.

Income types	2020	2021	% changes
Average national income	18,106,044	N/A	N/A
Average HH income	20,032,941	21,760,290	8.6
Income from sales of cashmere and wool	13,746,269	16,977,612	23.5
Income from meat	6,630,000	6,131,818	-7.5
Income from social benefits	4,076,600	3,897,885	-4.4
Income from artisanal mining	-	50,000	-

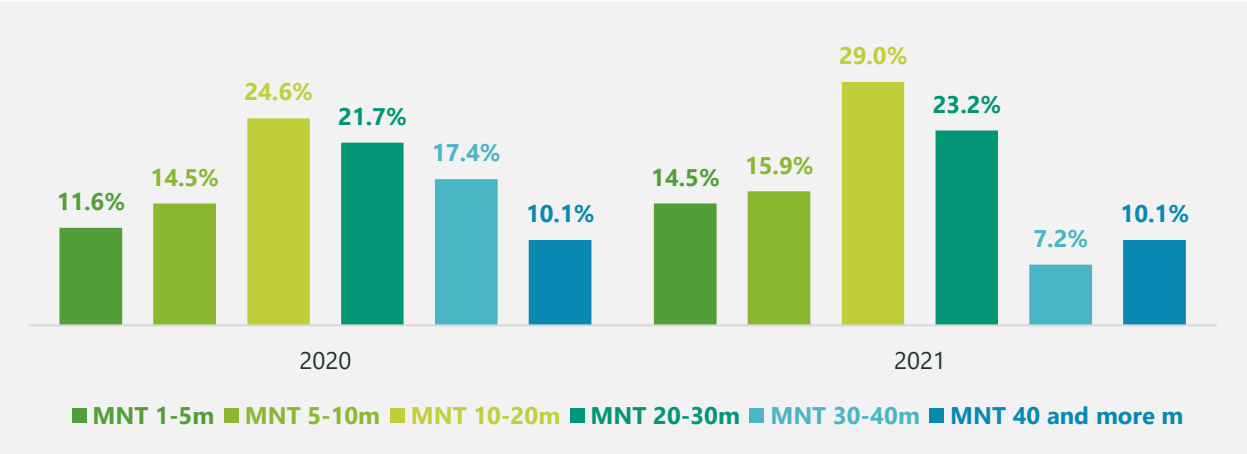
HHs in the target baghs of Bayankhongor aimag saw the highest increase, compared to the previous year. The average annual HH income of Idren bagh (Bayan-Undur soum) increased by 16.6%, and the average annual income of Urtyn gol bagh (Shinejinst soum) increased by 17.9%. In the baghs of Gobi-Altai aimag, the annual HH income in Bayantooroi village and Ulziit bagh increased by 6% -10%. However, the average annual HH income in Urt bagh (Altai soum) decreased by 4.6%. The average annual income of the target baghs in Bayankhongor aimag was lower than the national average, while the average annual income of the target bagh in Gobi-Altai aimag was higher than the national average. In particular, the average annual HH income in Bayankhongor aimag (Idren bagh, Bayan-Undur soum) was 0.74% lower than the national average, and the average annual HH income in Bayankhongor aimag (Urtyn gol bagh, Shinejinst soum) was 32.7% lower.

Table 9. HHs' average income, by location, MNT.

HH locations	Average HH income 2020	Average HH income 2021	Changes in %
National average income	18,106,044	N/A	N/A
Bayankhongor aimag; Idren bagh, Bayan-Undur soum,	17,972,143	20,957,857	16.6
Bayankhongor aimag; Urtyn gol, Shinejinst soum,	12,178,571	14,364,286	17.9
Gobi-Altai aimag; Urt bagh, Altain soum,	30,390,000	29000,000	-4.6
Gobi-Altai aimag; Bayantooroi bagh, Tsogt soum,	19,958,750	22140,625	10.9
Gobi-Altai aimag; Ulziit bagh, Erdene soum,	22,635,000	24180,000	6.8

In 2020, 11.6% of HHs had an income of up to MNT 5.0 million, 14.5% had MNT 5-10 million, 24.6% had MNT 10-20 million, 21.7% had MNT 20-30 million, 17.4% had 30-40 million, and 10.1% had more than MNT 40 million. In 2021, the share of HHs with up to MNT 30 million increased, while the share of HHs with MNT 30-40 million MNT decreased.

Figure 26. HHs' annual income, MNT.



Among the HH income groups, the share of HHs with an income of more than MNT 30 million in the target baghs of Bayankhongor aimag increased. The share of HHs with an income of MNT 40 million or more decreased in Gobi-Altai aimag (Urt bagh, of Altai soum, and Ulziit bagh of Erdene soum).

Table 10. HH income by quantile, by location, %.

	Idren bagh, Bayan-Undur soum, Bayankhongor aimag	Urtyn gol bagh, Shinejinst soum, Bayankhongor aimag	Urt bagh, Altai soum, gobi-Altai aimag	Bayantooroi bagh, Tsogt soum, Gobi-Altai aimag	Ulziit bagh, Erdene soum, Gobi-Altai aimag
No. of HH	14	14	10	16	15
2020					
MNT 1-5 million	7.1	14.3	0.0	25.0	20.0
MNT 5-10 million	7.1	42.9	10.0	12.5	6.7
MNT 10-20 million	42.9	28.6	30.0	18.8	26.7
MNT 20-30 million	42.9	14.3	30.0	12.5	20.0
MNT 30-40 million	0.0	0.0	0.0	18.8	13.3
More than MNT40 million	0.0	0.0	30.0	12.5	13.3
2021					
MNT 1-5 million	7.1	14.3	0.0	18.8	13.3
MNT 5-10 million	7.1	35.7	10.0	6.3	13.3
MNT 10-20 million	28.6	28.6	40.0	18.8	13.3
MNT 20-30 million	35.7	7.1	20.0	31.3	13.3
MNT 30-40 million	14.3	14.3	20.0	12.5	26.7
More than MNT40 million	7.1	0.0	10.0	12.5	20.0

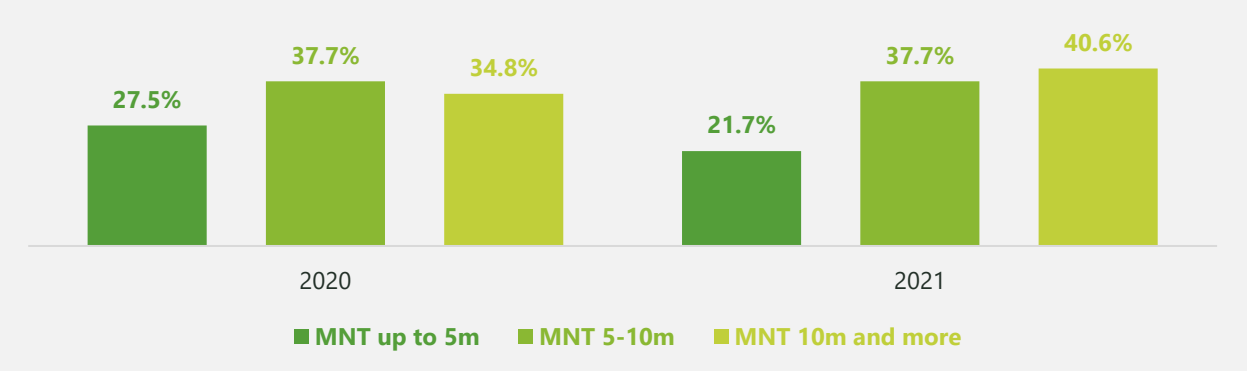
Average annual HH expenditure increased from MNT 9,930,333 in 2020 to MNT 10,691,893 in 2021; an increase of 7.7% (MNT 761,559) compared to 2020. In terms of expenditure growth, the average annual HH expenditure on food decreased by 59.5% (MNT 1,511,811) between 2020 and 2021. Moreover, the average annual expenditure on gasoline decreased by 25.1% (MNT 942,681) between 2020 and 2021. The HH expenditures on holidays, celebrations and festivals increased by 46.1% (MNT 1,189,863) and fodder and migration expenses increased by 134.3% (MNT 1,603,043).

Table 11. HHs' average expenditure, 2020 and 2021, MNT.

	2020	2021	Changes, %
Average HH expenditure	9,930,333	10,691,893	7.7
Expenditure on food	2,540,580	1,028,768	-59.5
Expenditure on gasoline	3,760,507	2,817,826	-25.1
Expenditure on holidays and celebrations	2,582,609	3,772,472	46.1
Expenditure on fodder and move	1,194,058	2,797,101	134.3

In 2020, 27.5% of all HHs spent up to MNT 5.0 million, 37.7% spent MNT 5-10 million, and 34.8% spent more than MNT 10 million. In 2021, the HH with an expenditure of up to MNT 5 million decreased by 5.8% to 21.7% while the HH with expenditure of MNT more than MNT 10 million increased by 5.8%

Figure 27. HHs' average expenditure, 2020 and 2021.



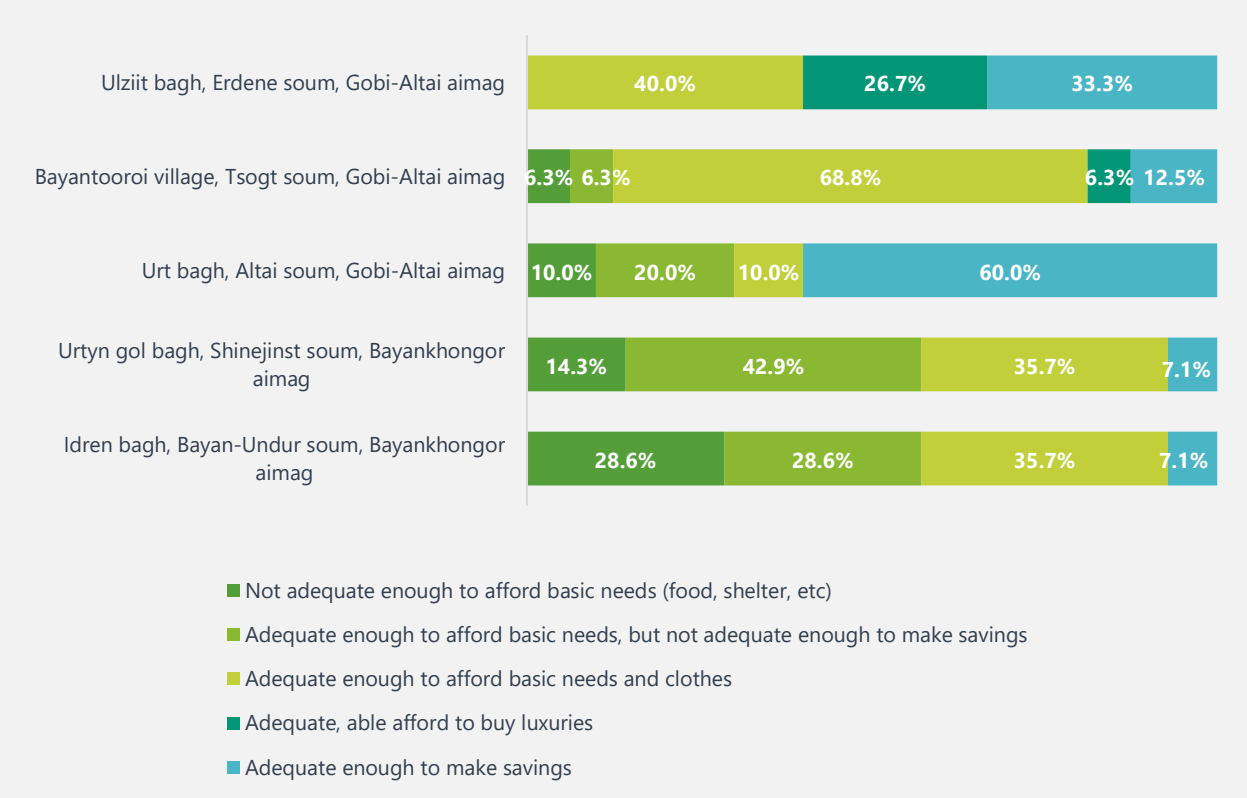
By location, all the HHs experienced an increase in their expenditure – irrespective of their locations – between 2020 and 2021. The share of HHs with an income of more than MNT 10 million increased, and the share of HHs with an income of MNT up to 5 million decreased.

Table 12. HHs' average expenditure, by location, %.

	Idren bagh, Bayan-Undur soum, Bayankhongor aimag	Urtyn gol bagh, Shinejinst soum, Bayankhongor aimag	Urt bagh, Altai soum, gobi-Altai aimag	Bayantooroi bagh, Tsogt soum, Gobi-Altai aimag	Ulziit bagh, Erdene soum, Gobi-Altai aimag
No. of HH	14	14	10	16	15
HH expenditure 2020					
MNT up to 5million	28.6	28.6	0.0	37.5	33.3
MNT 5-10 million	28.6	42.9	40.0	31.3	46.7
More than MNT10 million	42.9	28.6	60.0	31.3	20.0
HH expenditure 2021					
MNT up to 5 million	14.3	21.4	0.0	31.3	33.3
MNT 5-10 million	50.0	35.7	50.0	31.3	26.7
More than MNT10 million	35.7	42.9	50.0	37.5	40.0

A tenth (11.6%) of respondents said that their income was '*not adequate to meet basic needs*', 18.8% said '*adequate enough only for basic needs*', 40.6% said '*adequate enough only for basic needs and clothes*' (7.2%) '*adequate enough for buying luxuries*', and 21.7% '*adequate enough to spare to savings*'. The adequacy of HH income was sufficient in the target baghs of Gobi-Altai aimag, while 28.6% of respondents in the target baghs of Bayankhongor aimag and Urtiin Gol bagh (14.3%) said their income is not adequate to meet their basic needs in a daily basis. This was the highest among all the respondents. Looking at the income, the households with inadequate income was higher in the baghs of Bayankhongor aimag, where the average income was lower as well. Despite the increase in HHs' incomes in Bayankhongor aimag, during 2020 to 2021, the average income remained lower than that of Gobi-Altai aimag.

Figure 28. Adequacy of the HHs' income, by location.



A third (31.9%) of HHs had savings; and more than 50.0% in the Urt and Ulziit baghs of Gobi-Altai aimag had savings (making them the top savers among all). The share of HHs with savings was lowest in Idren bagh (Bayankhongor aimag) and Bayantooroi bagh (Gobi-Altai aimag).

Table 13. HHs' savings, by location.

% of HH with savings	No. of HH	% of HH with savings	n
Total HH with savings	**69**	**31.9**	**22**
Idren bagh, Bayan-Undur soum, Bayankhongor aimag	14	14.3	2
Urtyn gol, Shinejinst soum, Bayankhongor aimag	14	28.6	4
Urt bagh, Altain soum, Gobi-Altai aimag	10	50.0	5
Bayantooroi bagh, Tsogt soum, Gobi-Altai aimag	16	18.8	3
Ulziit bagh, Erdene soum, Gobi-Altai aimag	15	53.3	8

Half (53.6%) of all HHs had loans in 2020, and 62.3% in 2021; an increase of 8.3%. In 2021, HHs did not add their loan in Bayankhongor aimag and the HH loan size increased in Gobi-Altai aimag.

Table 14. HHs with loans, by location.

	%	Idren bagh, Bayan-Undur soum, Bayankhongor aimag	Urtyn gol bagh, Shinejinst soum, Bayankhongor aimag	Urt bagh, Altai soum, gobi-Altai aimag	Bayantooroi bagh, Tsogt soum, Gobi-Altai aimag	Ulziit bagh, Erdene soum, Gobi-Altai aimag
No. of HHs	**69**	**14**	**14**	**10**	**16**	**15**
HHs with loans in 2020, %	53.6	64.3	71.4	40.0	68.8	20.0
HHs with loans in 2021, %	62.3	78.6	71.4	50.0	81.3	26.7

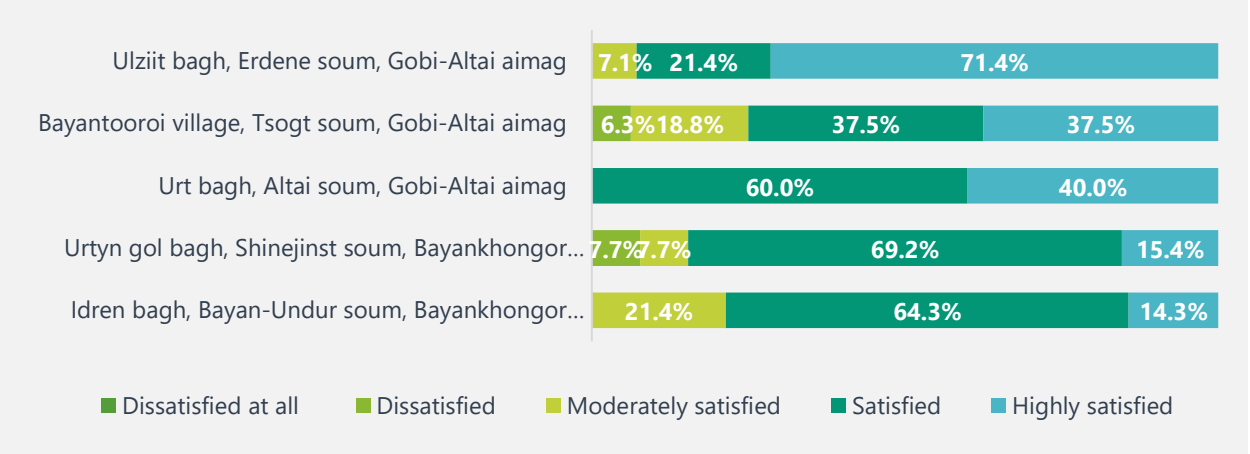
Only 2.9% of HHs joined the JSF, and all of them were from Ulziit bagh (Erdene soum, Gobi-Altai aimag). A quarter (23.2%) of all HHs started a record of income and expenditure, and 35.7% (the highest) were in Urtyn Gol bagh (Shinejinst soum, Bayankhongor aimag).

Table 15. HHs' economic activaties, by location.

	%	Idren bagh, Bayan-Undur soum, Bayankhongor aimag	Urtyn gol bagh, Shinejinst soum, Bayankhongor aimag	Urt bagh, Altai soum, gobi-Altai aimag	Bayantooroi bagh, Tsogt soum, Gobi-Altai aimag	Ulziit bagh, Erdene soum, Gobi-Altai aimag
No. of HHs	69	14	14	10	16	15
HHs that joined the JSF, %	2.9	0.0	0.0	0.0	0.0	13.3
HHs recording income & expenses, %	23.2	21.4	35.7	20.0	25.0	13.3

Just 3.0% of respondents were *'dissatisfied'* with their standard of livelihood, 11.9% were *'moderately satisfied'*, 49.3% were '*satisfied*', and 35.8% '*highly satisfied'*. By location, HHs in Gobi-Altai aimag had the highest level of satisfaction, including Ulziit bagh of Erdene soum (74.1%), Bayantooroi village of Tsogt soum (37.5%) and Urt bagh of Altai soum (40.0%).

Figure 29. Respondents' satisfaction with their livelihood standard, by location.



Multidimension poverty index[3]

As part of the baseline survey, a MPI was calculated on the sample data from the 69 HHs in five baghs. The index was calculated according to the methodology; based on education (years of schooling, and school of attendance), health (child mortality, and nutrition), and living standards (electricity, drinking water, sanitation, flooring, cooking fuel and asset ownership). Three groups and 10 sub-indicators (asset ownership) were coded 0 and 1 based on relevant questions in the sample questionnaire. The deprivation score was used to determine whether HHs were affected by poverty.

A third (33.3%) of all HHs were deprived in terms of the education indicator, with 2.9% of the HH members having dropped out of school and 14.5% being malnourished. Within the livelihood indicator, 95.7% of the HHs were deprived, 95.7% of HHs needed heat sources for cooking, 87.0%) clean drinking water, and 81.2% flooring materials (81.2%).

Table 16. Educational attainment by MPI

Indicators	HHs in poverty	%
Education		
Years of schooling	23	33.3
School of attendance	2	2.9
Health		
Child mortality	0	0.0
Food nutrition	10	14.5
Livelihood		
Electricity	2	2.9
Drinking water	60	87.0
Hygiene	66	95.7
Floor type of the accommodation	56	81.2
Fuel for heat	66	95.7
Asset and ownership	0	0.0

[3] The methodology for calculating the MPI is UNDP methodology and tailored into the context of Mongolia. This comprises of 10 indicators in the areas if health, education, living standards and security of welfare. The source of the information is Household Socio-Economic Survey conducted, the National Statistics Office. For more information, follow the link: 24-2.pdf (num.edu.mn), Микро мэдээллийн сан (nso.mn)

The MPI is determined by multiplying two indices: the proportion of the poor in total (H) and the intensity of multidimensional poverty (A).

$$MPI = H \cdot A$$

The deprivation score for each of the above HHs and the number of HHs, were used to calculate the multidimensional headcount ratio (H) to obtain the following results.

$$H = q/n = 87/309 = 0.282$$

Here *n* is the total number of people and is calculated as the sum of the number of people in each HH, *q* is the number of people affected by poverty according to the MPI methodology, which is calculated by adding the number of HHs in each HH in deprivation.

The calculation of the intensity of multidimensional poverty (A) is as follows; The sub-index is calculated by the following formula to correct the deprivation score for HHs with a deprivation score of less than 1/3.

$$A = \left(\sum_{i=1}^{n} c_i(k)\right)/q = 35.33/87 = 0.406$$

will be displayed. All calculations performed here can be viewed by running the Stata program Do-file.

Using the results of the above two sub-indices, the calculation of the MPI in the Baseline Survey was as follows.

$$MPI = H \cdot A = 0.282 \cdot 0.406 = 0.114$$

The detailed results were presented in the data in SPSS 26.0 format. The MPI was 0.114. In particular, 28.2% of the HHs were living in poverty, which was 0.4% higher than the poverty rate in Mongolia. As of 2020, poverty headcount was 27.8 at the national level. Intensity of MPI was 0.406, indicating that 40.6% of the HHs were in poverty across all the indicators. Table 17 shows the HHs' economic wellbeing measures.

Table 17. Economic wellbeing measures

MPI	Multidimensional poverty headcount ($\boldsymbol{H}$)	Intensity of multidimensional poverty ($\boldsymbol{A}$)	No. of people in deprivation($\boldsymbol{q}$)
0.114	28.2%	40.6%	4.18

Three. HERDERS' KNOWLEDGE AND ATTITUDES

Goal 1. Strengthening the system of surveillance, camera monitoring and patrols in the Great Gobi Special Protected Area A

Nearly half (43.5%) of respondents from HHs in the buffer zone participated in environmental conservation activities in the previous three years; with one person attending 3-4 meetings on average. A fifth (20.3%) of respondents had participated in training on pasture ecosystem improvement and degradation reduction, while one respondent had participated in training 3.5 times. Similarly, 21.7% had participated in conservation and ecosystem biodiversity monitoring activities; an average of 7.2 times. That is, a quarter of respondents had engaged in conservation activities to some extent. There was no significant difference dependent on location.

Table 18. Participation in conservation and training during the previous three years, N=69.

Activity	Attendance rate, %	Average. attendances
Whether the respondent attended in the trainings on nature conservation and meetings	43.5	3.3
Whether the respondent took a training on pasture ecosystem management and degradation reduction	20.3	3.5
Whether the respondent participated in conservation and ecosystem biodiversity monitoring	21.7	7.2

A fifth (16.2%) of respondents said pastureland conditions had '*improved*' over the previous three years, 64.7% said '*deteriorated*' and 19.1% thought it had remained the same. In addition, 7.4% of respondents rated changes as *'intense'*, 2.0% said *'fair'* and 5.9% thought '*slight*'. For the respondents who said the condition had deteriorated, the degree of changes included '*intense'* (5.9%), '*fair'* (25%) and '*slight'* (33.8%). There was no significant difference according to the target location.

Table 19. Changes in pastureland conditions in the previous three years, %, N=69

Changes	Degree of changes				**Total**
	Intensively	Fairly	Slightly	NA	
Improved	7.4	2.9	5.9	0.0	16.2
Deteriorated	5.9	25.0	33.8	0.0	64.7
Remained the same	0.0	0.0	0.0	19.1	19.1
Total					100.0

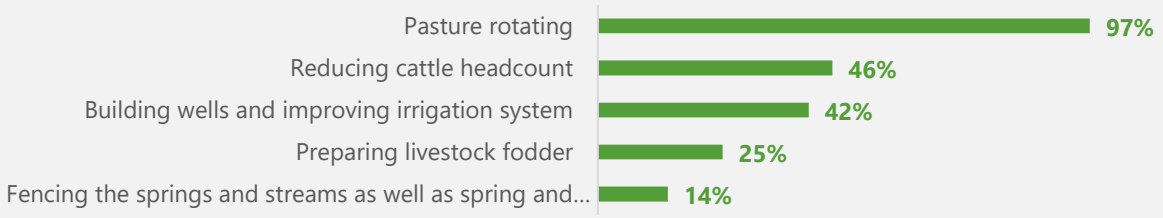
Among the respondents, in the previous three years, 13% thought pastureland rehabilitation and protection activities had '*improved*', 13.0% thought '*deteriorated'*, and *'remained the same'* (74%).

Table 20. Changes in pasture rehabilitation and conservation in the previous three years, %, N=69

Changes	Degree of changes				Total
	Intensively	Fairly	Slightly	NA	
Improved	6	4	3	0	13
Deteriorated	1	6	6	0	13
Remained the same	0	1	0	72	74
Total					100.0

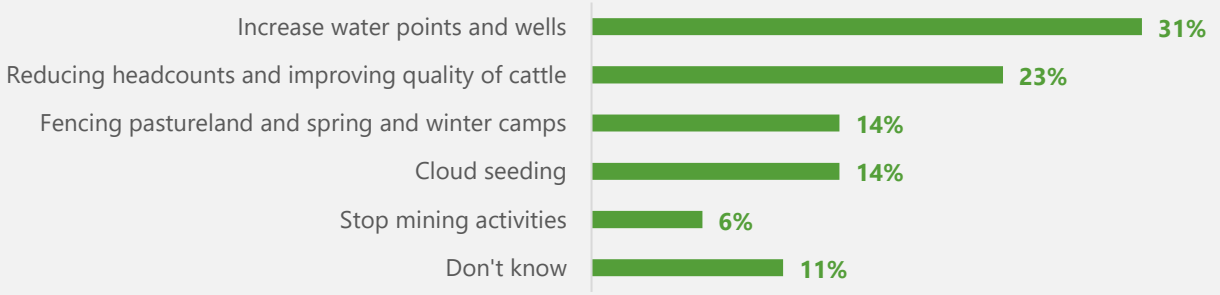
In terms of local pasture conservation activities, 96.9% of pastures were rotated, 46.2% of livestock was reduced, 41.5% of pastures were irrigated, fodder was prepared for 24.6% of livestock, and 13.8% of springs, streams, winter camps and spring camps were fenced.

Figure 30. Pasture rehabilitation and conservation activities, N=69.



In terms of the future activities in need to conserve the pastureland, 31.3% of respondents said the number of water points and wells should be increased, 23.4% said reducing headcount and improving the quality of livestock, 14.1% suggested fencing and rotating pasture, 14.1% mentioned cloud seeding, 6.3% the stopping of mining activities, and 10.9% '*did not know*'.

Figure 31. Proposed activities to conserve pastureland, N=69.



A small proportion (8.7%) of respondents said that saxaul forest conditions had '*improved*' over the previous three years, 55.1% thought it had '*deteriorated*', and 36.2% said '*remained the same*'.

Table 21. Changes in the saxaul forest conditions in the previous three years, %, N=69

Changes	Degree of changes				**Total**
	Intensively	Fairly	Slightly	NA	
Improved	2.9	2.9	2.9	0.0	8.7
Deteriorated	10.1	26.1	18.8	0.0	55.1
Remained the same	0.0	0.0	0.0	36.2	36.2
Total					100.0

Goal 2. Developing a water point and habitat management model to rehabilitate the Great Gobi Special Protected Area Ecosystem

A few (11.6%) of respondents said that wildlife numbers had '*increased*', 53.6% said '*reduced*' and 34.8% said '*remained the same*' over the previous three years. The Great Gobi Special Protected Area is a wildlife habitat[4].

Table 22. Changes in the number of wildlife in the previous three years, %, N=69

Changes	Degree of changes				Total
	Intensively	Intensively	Intensively	NA	
Improved	1.4	4.3	5.8	0.0	11.6
Deteriorated	7.2	13	33.3	0.0	53.6
Remained the same	0.0	0.0	0.0	34.8	34.8
Total					100.0

[4] Animals - Facts, Pictures and Resources - AZ Animals (a-z-animals.com)

This section of the report outlines the appearance, frequency, and location of five wildlife species, namely: *Gazella subgutturosa, Camelus ferus, Equus hemionus, Panthera pardus* and *Canis lupus*. Among them all, the black-tailed gazelle and the wolf (Canis lupus) were the most commonly seen, while *Panthera pardus* and *Equus hemionus* were the least seen.

Gazella subgutturosa. 75.4% of respondents had seen them alive, 7.2% had seen their carcasses, and 17.4% 'had not seen them. In terms of frequency, 1.8% of the respondents had seen them once a year, 33.3% had seen them occasionally (2-12 times a year), and 64.9% had seen them frequently (more than 13 times a year).

Figure 32. Black-tailed gazelle sitings, N=57.

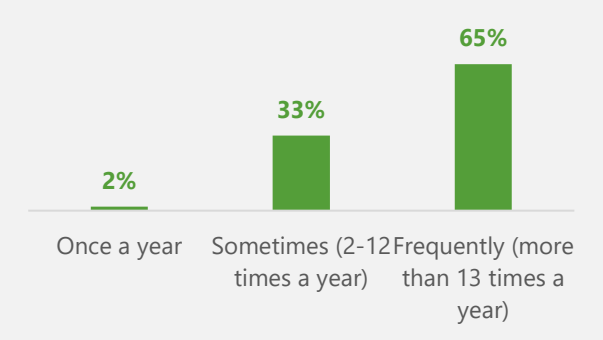
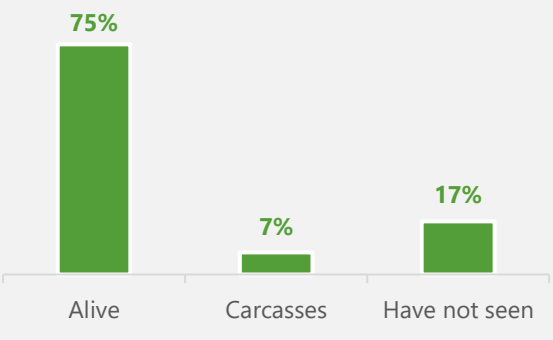


Figure 33. Type of black-tailed gazelle seen, N=69.



Camelus ferus. 32.8% of respondents had seen them alive, and 67.2% had not seen them. No respondents had seen their carcasses. In terms of frequency, 29.2% of the respondents had seen them once a year, 37.5% had seen the occasionally (2-12 times a year), and 33.3% had seen then frequently (more than 13 times a year).

Figure 34. Type of *Camelus ferus* seen, N=67.

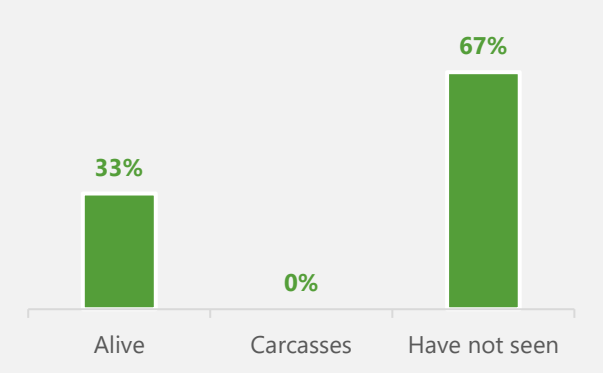
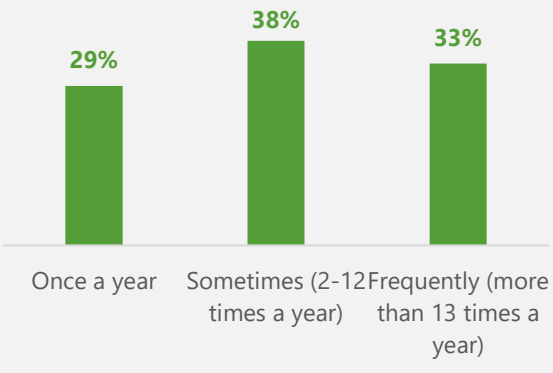


Figure 35. *Camelus ferus* sitings, N=24.



Equus hemionus. 25% of respondents had seen them alive, and 75% had not seen them. In terms of frequency, 20% of respondents had seen them once a year, 45% had seen them occasionally (2-12 times a year), and 35% had seen them frequently (more than 13 times a year).

Figure 36. Type of *Equus hemionus* seen, N=68.

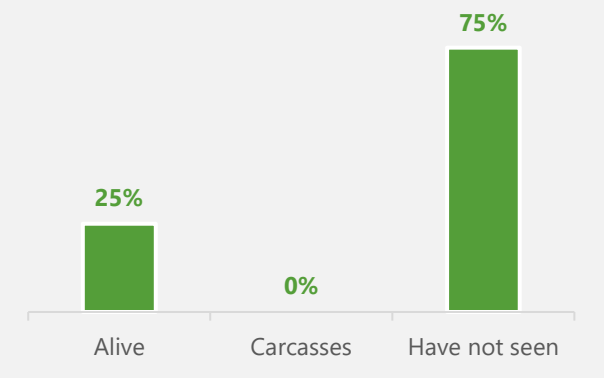
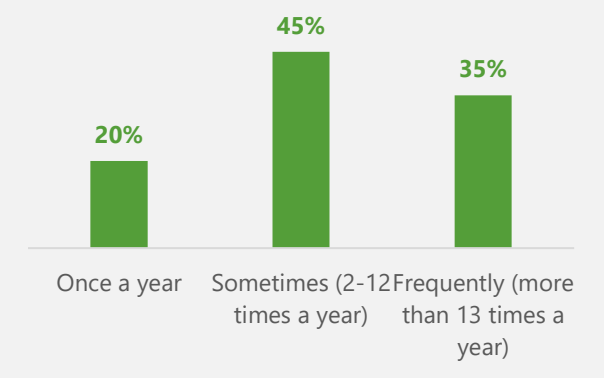


Figure 37. *Equus hemionus* sitings, N=20.



Panthera pardus. 13.2% of respondents had seen them alive, and 86.8% had not seen them at all. In terms of frequency, 50% of the respondents had seen them once a year, 8.3% had seen them occasionally (2-12 times a year), and 41.7% had seen them frequently (more than 13 times a year).

Figure 38. Type of *Panthera pardus* seen, N=68.

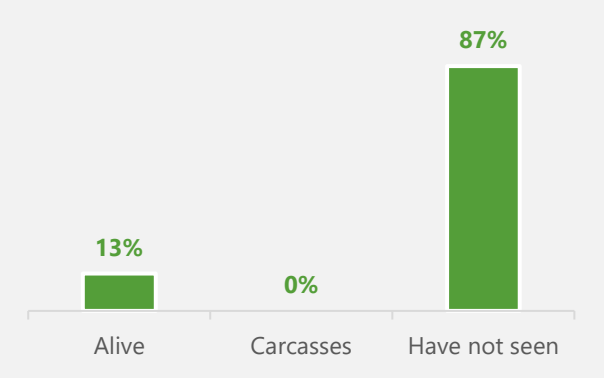
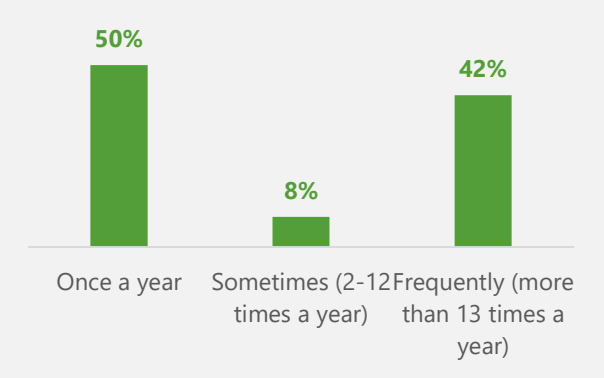


Figure 39. *Panthera pardus* sitings, N=12.



Canis Lupus. 71.6% of respondents had seen them alive, 1.5% had seen their carcasses, and 26.9% had not seen them. In terms of frequency, 16.3% of respondents had seen them once a year, 30.6% had seen them occasionally (2-12 times a year), and 53.1% had seen them frequently (more than 13 times a year).

Figure 40. Type of *Canis Lupus* seen, N=67.

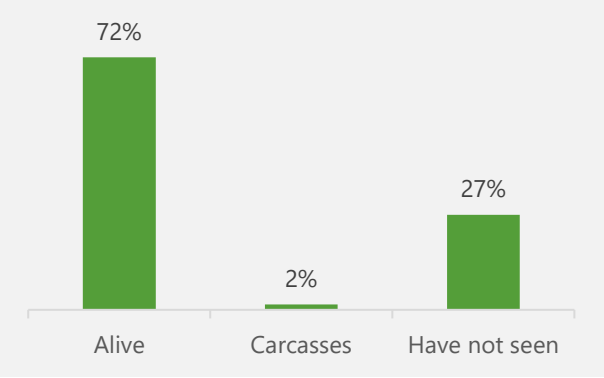
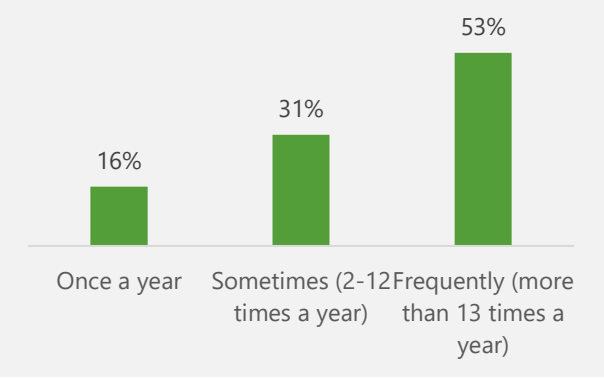


Figure 41. Canis lupus siting, N=49.



Black-tailed gazelles were spotted in many places while other species were more likely to be seen in the specific locations. For example, Idren mountain range and Shar Us of Idren bagh, Tsagaan Bogd of Urtyn Gol bagh, Tugalan Zadgai, Kharin Shand, Argaliin khar of Urt bagh, Tsagaan ders, Deed Gobi, Idrengiin nuruu of Bayantooroi village, Gerliin Hooloi, Zarmgangiin Hooloi, Suvrangiin Am, Hoid Ulaan and Khongor of Ulziit bagh were the main spots.

Table 23. Locations where wildlife was spotted.

Location	*Gazella subgutturosa*	*Camelus ferus*	*Equus hemionus*	*Panthera pardus*	*Canis Lupus*
Idren bagh (Bayan-Undur soum, Bayankhongor aimag)	• In the pasture • Eastern and western mountain range • Idren, Idrengiin Uvur • Oonon Khar, Belkhii Khar, Shariin Uruu, • Well • Yagaan Ovoo	• Idren • Shar Us	• Idren	• Not specific	• Zagd • Idren
Urtyn gol (Shinejinst soum, Bayankhongor aimag)	• Bayanzurkh • Bor Khairkhan, on the southern side • Zurkh Khairkhan • Zel Els • Khoyor Khudag • Khuren Tsoo	• Tsagaan Bogdiin Ar	• Tsagaan Bogdiin Ar	• Not specific	• Tsagaan Bogdiin Ar • Khairkhan
Urt bagh (Altain soum, Gobi-Altai aimag)	• Argaliin Khar • Gobi • Dov and Kharmagtai, • Maikhan • Ulaan Khudag • Khar Del, everywhere • Khar Khairkhan • Khulangiin Zogsool • Sharga Altai, Takhilga • Shiveet Ulaan	• Gobi • Tugalan zadgai • Khariin Shand	• Gobi • Tugalan Zadgai	• Aj bogd • Argaliin Khar • Zalai Tavilant • Kharmagtai	• In the pastureland • Noyon Khudag • Khar Del and Khar Khairkhan • Khariin Shand • Khooloin Ar • Shiveet
Bayantooroi bagh (Tsogt soum, Gobi-Altai aimag)	• Bayantooroi mountain range • Gobi • Meeren Tsagaan • Dersnii Zoo, Tuntger Ulaan Ovoo • Togoon Us • Mountain range, Idren • Khag Ergen Steppe • Khooloi	• Gobi • Deed Gobi • Tsagaan Ders • Idrengiin range	• Bayantooroi • Gobi • Steppe	• Gobi • Uhaa • Idrengiin nuruu	• In the pastureland • Bayantooroi • Ikh and baga bituu • Otgon • Ukhaa • Idrengiin mountain range
Ulziit bagh (Erdene soum, Gobi-Altai aimag)	• Gerliin Khooloi • Zarman • Zarmangiin tald • Zarmangiin khooloi • Zakhui Zarman • Zuslan Khooloi	• Gobi • Taliin Khar • Zarmangiin Khooloi • San-Uul	• Zoo • In the mountain range • Khulsan Khudag • Khulsnii Us	• Not specific	• Gobi • Gerliin Khooloi • Zarmangiin Khooloi • Mountain range • Suvrangiin Am • Khoid Ulaan • Khongor • Khyar

When asked if there were any changes in poaching, saxaul harvesting, collection of medicinal plants, and artisanal mining, over the previous two years, a majority of respondents had little or no information.

Table 24. Changes in environmental offences during the previous two years, %, N=69

Types of offence	Increased dramatically	Increased	Remained the same	Reduced	Reduced dramatically	Don't know
Poaching	1.4		5.8	10.1	4.3	78.3
Saxaul forest harvesting		7.2	26.1	24.6	10.1	31.9
Medicine plant collecting			5.9	4.4	2.9	86.8
Artisanal mining activities	5.8	14.5	5.8	8.7	4.3	60.9

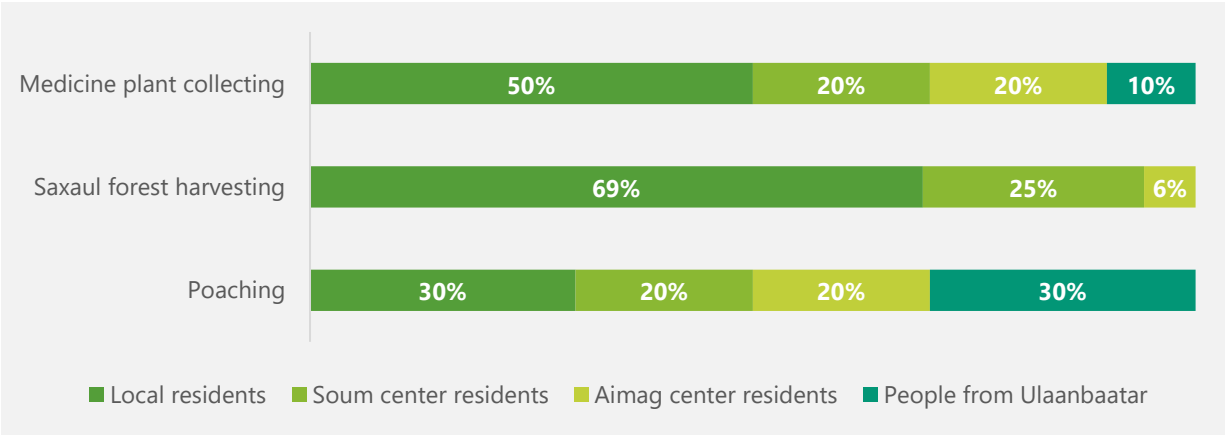
The months when environmental offences were most commonly recorded, varied. For example, poaching was common between August and November, when the animal's hair was grown and they had gained weight. Saxaul harvesting was most common between August and February, during the cold season. As for medicinal plants, they were harvested between March and May (when vegetables were just starting to grow), and between August and November (when vegetables were finishing). The impact of artisanal mining (or '*ninja*' activities) was not dependent on particular seasons or months.

Table 25. Months when environmental offences increased, %.

Month	Poaching	Harvesting saxaul forest	Collecting medicine plants	Artisanal mining
January		23.1		7.5
February		21.7		7.5
March			4.8	1.5
April			9.5	3
May			4.8	16.4
June				16.4
July				14.9
August	20.7	0.7	23.8	14.9
September	41.4	2.1	19	
October	31	2.1	19	
November	6.9	23.8	19	7.5
December		26.6		10.4
Total	100	100	100	100

Most environmental offenders were likely to be local people. A third (30%) of the poachers were said to be local residents, 20% were soum center residents, 20.0% aimag centre residents, and 30% from Ulaanbaatar. Similarly, 69.2% of saxaul harvesters were local, 25% soum centre residents, 5.8% aimag residents, and 10% from Ulaanbaatar. Half (50%) of collectors of medicinal plants were locals, 20% were soum centre residents, 20% aimag residents, and 10% from Ulaanbaatar.

Figure 42. Perpetrators of environmental offences.



This section summarizes information on areas where environmental conflicts occur. These areas tend to be habitats for a lot of wildlife.

Table 26. Location of environmental offences.

Location	Poaching	Harvesting saxaul forest	Collecting medicine plants	Mining activities
Idren bagh (Bayan-Undur soum, Bayankhongor aimag)	• Western Gobi	• Idren	• Idren • Khyaran Gun	• Idren • Western Gobi • Khuren Tsav
Urtyn gol (Shinejinst soum, Bayankhongor aimag)	• Gobi	• Khoyor Khudag • Bagh #2 and #3	• Dood Khooloi	• Bor Khairkhan

		• Dood khooloi	• Khoid Gii	• Gobi and desert • Khuren Tsav • Tsagaan Ders
Urt bagh (Altain soum, Gobi-Altai aimag)	• Protected areas	• Urgust, Shar Deeg • Har Khudag		• Sharga and Nariin Khukh
Bayantooroi bagh (Tsogt soum, Gobi-Altai aimag)	• Bayantooroi • Gobi • Uvur Bel	• Ar Kheseg • Bayantooroi • Gobi • Khooloi • Tsagaan Ders	• Bayantooroi • Gevsh Dovon Adag	• Baruun Gobi • Tsagaan Gobi Village • Gobi
Ulziit bagh (Erdene soum, Gobi-Altai aimag)	• Idrengiin Nuruu	• Gobi • Zagan Khudag • Zarman • Zarmangiin Khooloi • Westen and Eastern Khooloi	• Zarmangiin Khooloi	• Not specific

Goal 3. Supporting the participatory governance in the implementation of the management of the Great Gobi Special Protected Area

A third (34.8%) of respondents had heard about management of the buffer zones, while 65.2% had not. This indicates that local people living in the Great Gobi Special Protected Area A had little knowledge about the management.

Looking how satisfied the local people with the implementation of activities in the Great Gobi Special Protected Area A, 5.8% of the respondents said they were 'fully satisfied', 'satisfactory' (15.4%) and 'fair' (23.1%), 'poor' (19.2%) and 'not satisfactory at all' (5.8%) and 'did not know' (30.8%). Efforts to strengthen management of the Great Gobi Special Protected Area A appeared to have not been effective. For example, 79% of respondents rated the management of the buffer zones as mediocre or below average. There were no significant differences dependent on age, gender and educational attainment of the respondents.

Figure 43. Respondents' knowledge of management of the Great Gobi 'A' Strictly Protected Area, N=69.

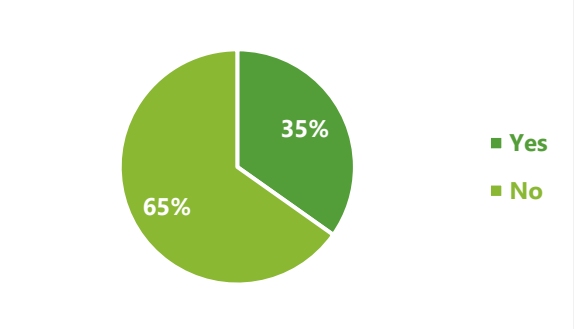
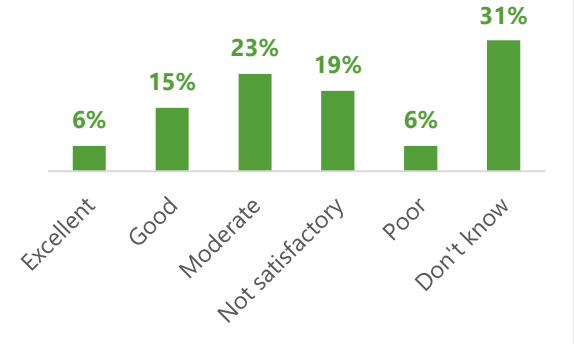
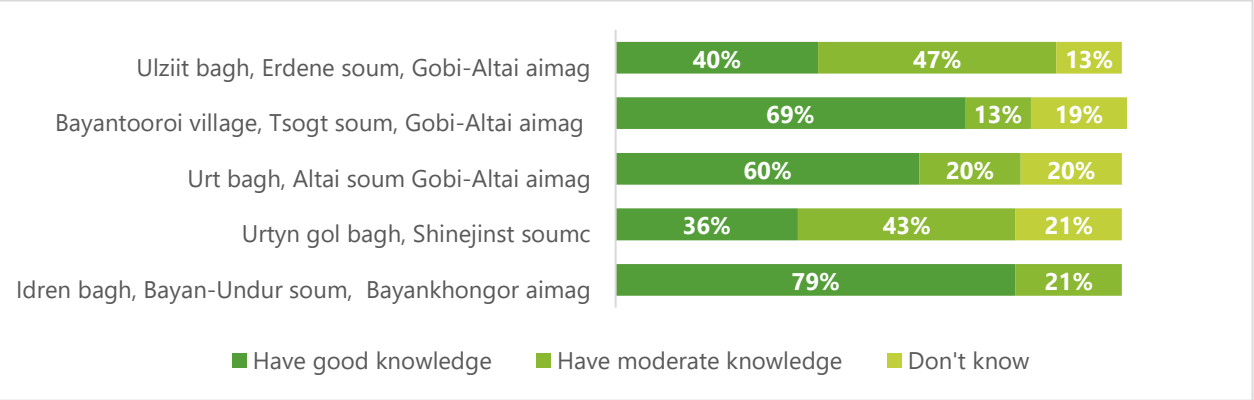


Figure 44. Respondents' satisfaction with management of the Great Gobi 'A' Strictly Protected Area, N=52.



Half (56.5%) of the respondents said that they had '*good*' knowledge of the local wildlife and plants, 29% said '*moderate*' and 14.5% '*did not know*'. In terms of location, respondents from Idren, Bayantooroi and Urt baghs, had higher levels of knowledge, while those from Ulziit and Urt baghs had lower levels of such knowledge.

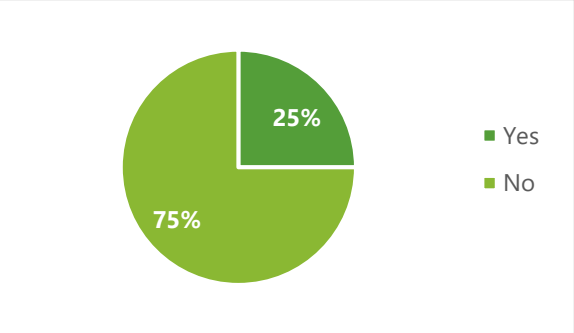
Figure 45. Respondents' knowledge of wildlife and plants, N=69.



Goal 4. Awareness raising and advocacy through community-led and eco-clubs aimed at improving pasture and herd management and conservation of the environment

A quarter (24.6%) of respondents were members of a natural resource conservation management partnership. The partnerships included Idren Zalan Jinst, Irves, Cashmere Cooperative, Khairkhan Iveel and Tsarmyn Tsagaan. The partnerships were usually working in the areas of environment, trade and production.

Figure 46. Respondents' membership of partnership, N=69.



List of partnerships.

- Idren Zalan Jinst
- Irves
- Cashmere Cooperative
- Khairkhanii Iveel
- Tsarmiin Tsagaan

Operations

- Protection of springs and wildlife
- Production (handicrafts)
- Sales of sheep's wool, cashmere and leathery
- Organizing meetings and competitions
- Improving pasture use and management

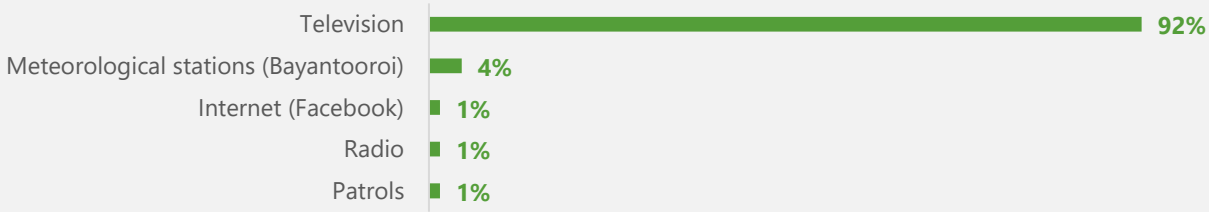
The biggest concern in rural areas was said to be water scarcity. For example, 62.3% of respondents said they were concerned about water issues, 40.6% said environmental degradation and pasture use, 20.3% said mining activities, and 5.8% said increased numbers of wolves.

Table 27. The biggest concerns of the local people, by location, %.

Activities	Water scarcity	Mining	Environmental degradation and pastureland adequacy	Increased number of wolf	Did not know
Idren bagh, Bayan-Undur soum, Bayankhongor aimag	35.0	40.0	25.0	0.0	0.0
Urtyn gol, Shinejinst soum, Bayankhongor aimag	40.9	18.2	40.9	0.0	0.0
Urt bagh, Altain soum, Gobi-Altai aimag	52.9	0.0	29.4	17.6	0.0
Bayantooroi bagh, Tsogt soum, Gobi-Altai aimag	55.6	11.1	27.8	0.0	5.6
Ulziit bagh, Erdene soum, Gobi-Altai aimag	50.0	0.0	25.0	6.3	18.8

Most (91.6%) of the respondents received climate and weather forecast from television, 4.2% from meteorological stations (Bayantooroi), 1.4% from the Internet (Facebook) and 1.4% from the rangers.

Figure 47. Sources of weather forecasts, N=69.



The survey did not collect information on student eco-clubs which (based on results of online searches) are mainly based in soum centre schools. There was a total of eight eco-clubs in the five target soums. They included *Umbrella* eco-club of Shinejinst soum (Bayankhongor aimag). The eco-club was formed in 2004 to educate children about the environment. More information, is available via the following link here: Б.О.Х "Шүхэр зүйл" эко клуб | Facebook.

During the data collection, it was observed that activities of the eco-club had been reduced due to the COVID-19 pandemic, and the number of student members decreased. More information about the Eco Club can be obtained from the ZSL's project *Supporting Nomadic Herders and Protecting Flat Camels in the Great Gobi; 2021-2024*.

Goal 5. Promoting sustainable use of herders' natural resources and financial sustainability

Respondents were asked to state the importance of various activities; to determine their perceptions and attitudes towards environmental conservation and the buffer zone management system.

The share of respondents that highlighted the importance proposed activities was high in all three cases. For example, 73% of respondents said that the preservation and protection of nomadic heritage was '*extremely important*', 51% identified the preservation of natural waters for wildlife, and51% the restoration

and protection of endangered species. A fifth (20%) of respondents said that setting a maximum number of livestock per herder HH would not be so effective, to balance pasture carrying capacity and reduce land degradation. However, 10% said it would be '*slightly effective*', 12% said '*moderately effective*', 29% said '*effective*', and 28% said '*very effective*'. Table 28 shows the herders' opinions on conservation and the buffer zone management system.

Table 28. Respondents' opinions on activities to be undertaken, %, N=69

Activity	Degree of importance					
	Not important at all	Slightly important	Fairly important	Important	Extremely important	Mean
Rehabilitation and conservation of endangered wildlife	3	3	9	35	51	4.28
Leave natural water to wildlife	1	1	9	38	51	4.35
Preservation and inheritance of nomadic heritage	1.4	1.4	1	23	73	4.64
Establishing a nursery for endangered species	7	7	25	32	29	3.68
Pasture rehabilitation through livestock headcount control	4	3	12	36	45	4.14
Coordination of pasture use through partnership and group ownership	3	9	20	33	33	3.87
Specifying the maximum number of cattle per herder HH	20	10	12	29	28	3.34

If a criterion is met either all three indicator or particular indicator, the respondent should be considered to have knowledge and understanding of the environmental conservation and buffer zone management. The index scores for each statement are shown in Table 29.

Table 29. Environmental conservation, pasture use knowledge and attitudes scores.

Condition	Indicator	Index
Conservation of nature	Rehabilitation and conservation of endangered wildlife	53.62
	Leave natural water to wildlife	
	Preservation and inheritance of nomadic heritage	
	Establishing a nursery for endangered species	
Pasture conservation	Pasture rehabilitation through livestock headcount control	14.49
	Coordination of pasture use through partnership and group ownership	
	Specifying the maximum number of cattle per herder HH	

According to the index of herders' knowledge and attitudes (towards the conservation of nature) the respondents' score on conservation was 53.62. This demonstrated that their knowledge and attitudes had improved. However, the score of the respondents on pasture conservation was 14.49, indicating their knowledge and attitudes in this area was still poor. This was especially true in terms of controlling the number of livestock. This showed that herders did not see reducing numbers of livestock as being effective.

The respondents were asked whether they would agree with the objective of determining herders' attitudes towards conservation and environmental zone management systems. Table 30 details their opinions and attitudes toward the buffer zone's management.

Table 30. The respondents' opinion on the buffer zone management, %, N=69

Statement	Disagree at all	Disagree	Agree	Fully agree	Mean
It is difficult for herder to take time to participate in the conservation activities	3	3	9	35	2.46
Livelihoods of the herders are more important concern than environmental conservation and pasture restoration	1	1	9	38	2.61
It is difficult for humans to breed and conserve endangered wildlife as they are becoming extinct out of human control	1.4	1.4	1	23	2.72
Youth moved to the city and lost interest in the nomadic way of style (herding cattle)	7	7	25	32	3.20
Herders play an important role in conserving the local nature, wildlife and pasture inherited from their ancestors	4	3	12	36	3.55
Herders should do their best to conserve wildlife	3	9	20	33	3.46
Herders' livelihoods have improved in comparison to the past, and now it's time to reduce the number of cattle and restore the pasture	20	10	12	29	3.23

Most respondents agreed with the above-mentioned statements, regarding environmental conservation and pasture restoration. For example, 35% of respondents *'fully'* agreed with the statement that herders were busy and found it difficult to participate in conservation. A third (38%) said herders' livelihoods were more important than conservation and pasture restoration, and 36% said herders played an important role in protecting ancestral nature, wildlife and the pasture.

Four. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

A total of 69 HHs were surveyed, with adults and/or persons with more control over decision making within the HH invited to answer questions. Fifty-two (52) of the 69 respondents were heads of HHs, 14 were spouses, and three were sons or daughters. Fifty-two (52, 75.4%) of the respondents were male and 17 (4.6%) were female. The youngest respondent was 20 years old, the oldest 79, and the average was of 41. On average, the HHs had four to five members, with 4-5 children, and the head of the HH (or main income earner) had lived in the area for an average of 38 years. All the respondents were Khalkhs. Of all the HHs' members, 12 (3.9%) were vulnerable; including one orphan, two widows/widowers, and nine people with disabilities.

The educational attainment of the respondents was relatively low. More than 94.2% of the respondents were covered by health insurance. According to the BMI, 40.4% of the HHs' members were overweight and obese, 51.9% were healthy, and 2.0% were underweight and/or malnourished.

The MPI was 0.114, indicating that 28.2% of the HHs were impoverished. Household property ownership and infant mortality rates were reasonable, but HHs were deprived according to other indicators of living standards. The high percentage of deprived HHs was due mainly to limited access to drinking water, poor sanitation, poor flooring materials in homes and apartments, and fuel for cooking. More than 90% of the HHs were deprived in terms of sanitation and fuel for cooking, while more than 80% were deprived in terms of reliable sources of drinking water and flooring in their accommodation.

Compared to 2020, HH incomes in the buffer zone had increased by 8.6% in 2021, but expenditures increased by 7.7%. Idren bagh (Bayan-Undur soum, Bayankhongor aimag), and Urtyn bagh (Shinejinst soum, Bayankhongor aimag) had high growth of HH incomes. In Urt bagh (Altai soum, Gobi-Altai aimag) incomes decreased by 4.6%. In Gobi-Altai baghs, HH incomes are higher than they need to be, and in Bayankhongor aimags, daily incomes are higher.

Livestock was the main source of income, including sales of dairy products, wool and meat. Compared to 2020, HH incomes from wool and cashmere had increased in 2021, while income from sales of livestock and meat decreased.

Only 31.9% of all HHs had savings; except in Urt bagh (Altai soum, Gobi-Altai aimag), and Ulziit bagh (Erdene soum, Gobi-Altai aimag) where more than half of HHs had savings.

Compared to 2020, the share of borrowed HHs increased by 8.7% in 2021, and the share of borrowed HHs has increased in all target baghs.

Participation in the community savings fund was very poor, with only 2.9% of all HHs covered by it. In addition, only one in five HHs recorded income and expenditure, and made economic calculations. Urtyn Gol bagh (Shinejinst soum, Bayankhongor aimag) had the highest or 35.6%, while Ulziit bagh (Erdene soum, Gobi-Altai aimag) had the lowest or 13.3%.

According to herders in the buffer zone, saxaul forests, pastures and wildlife had all deteriorated over the previous three years. The deterioration was due to reduced rainfall, decrease in the number of water points, and increase in livestock numbers and mining activities.

Among wildlife, the black-tailed gazelle and the wolf (*Canis lupus*) were the most commonly seen, while *Panthera pardus and Equus hemionus* were the least common. Respondents had little knowledge of changes

in poaching, harvesting in saxaul forests, collection of medicinal plant, or artisanal mining in recent years. Local people believed that increasing water points, building wells, reducing the number of livestock (by giving more attention to their quality), fencing pastures, rotating and cloud seeding, would all be helpful to rehabilitate and conserve pastures.

Local people had little information and knowledge about buffer zone management. A quarter (24.6%) of respondents were members of natural resource conservation management partnerships. The partnerships were usually working in the field of environment, trade and production.

RECOMMENDATIONS

Herders in the Great Special Protected Area A were mainly reliant on the income from their livestock products alone. Supporting the diversification of HH incomes through project activities can help protect the environment and reduce the number of livestock. At the same time, herders will have the opportunity to process livestock raw materials, and support the production of wood, wood products and other handicrafts. Most (93%) of the HHs had yaks.

Training, and meetings - on introducing the activities of partnership and the JSF, improving herders' knowledge and skills in recording their income and expenditure - are needed. Under implementation in the five target baghs and nearby soums, are:

- the German-Mongolian joint KfW investment project *Biodiversity and Adaptation to Climate Change*, and
- the Ministry of Environment and Tourism and the United Nations Development Program's *Ensuring Sustainability and Resilience of Green Landscape in Mongolia* are.

It should be determined if there are any other projects being implemented. Community-led partnerships and JSFs were founded, based on implemented and ongoing projects. There is a need to study the existing situations of the communities prior to the implementation of the *Conservation of Mongolia's Wild Camels* project.

Water scarcity was the main concern for the local people. Increasing the number of water points and building wells in different areas would be helpful to disperse/decentralize herders in the buffer zone and reduce the density of the population. Local people agreed that the condition of the saxaul forest had deteriorated over the previous three years. However, they were most likely to be main perpetuators as they used the saxaul forest for their livelihoods. Thus, there is a need to initiate a campaign on conversation of the saxaul forest, and promotion of alternative sources of fuel.

Poaching, harvesting in saxaul forest, and collection of herbs, were carried out in certain months. Therefore, improving surveillance, project-funded patrols, and a security system would be effective in these months.

Local people had little information and knowledge about the buffer zone management and operation. There is a need to provide accurate information on the operation and management of the buffer zone to the local community. Since, 43.5% of respondents had '*little*' or '*no knowledge*' about the local flora and fauna, there is a need to increase this in the area.

Television was the main source of information about weather forecasts, so access to this information should be improved.