



MONGOLIA ANTICIPATION OF HARSH WINTER

2018 -2019 IMPACT ASSESSMENT



Save the Children
100 YEARS



CONTENTS

01	INTRODUCTION	3
02	METHODOLOGY	4
	2.1 RESEARCH QUESTIONS	4
	2.2 SAMPLING AND DATA SOURCES	4
	FINDINGS	
03	WAS THE FORECAST CORRECT?	7
	3.1 KEY FINDINGS	7
	3.2 PERCEPTIONS OF WINTER 2018-2019	7
	3.3 FORECASTING HARSH WINTER	8
04	WAS THE INTERVENTION EARLY?	9
	4.1 KEY FINDINGS	9
	4.2 WAS OTHER ASSISTANCE RECEIVED IN 2019?	9
	4.3 WHEN DO HERDERS WANT ASSISTANCE?	9
05	WAS THE INTERVENTION EARLY?	10
	5.1 KEY FINDINGS	10
	5.2 PREPARING FOR WINTER	10
	5.3 WHAT ACTIONS DID YOU TAKE, AND WHEN?	12
	5.4 CASH SHORTFALLS	14
	5.5 GAPS IN PREPAREDNESS	14
	5.6 SEASONAL AND ANNUAL VARIATIONS	15
06	WERE HERDER LOANS AND DEBTS IMPACTED BY THE PROJECT?	17
	6.1 KEY FINDINGS	17
	6.2 LOANS AND WINTER CONDITIONS	18
	6.3 WINTER CONDITIONS AND INTEREST RATES	19
	6.4 RAISING CASH TO PREPARE FOR WINTER	19
07	PROJECT IMPACTS ON LIVESTOCK	20
	7.1 LIVESTOCK LOSSES	20
	7.2 CIRCUMSTANCES OF LIVESTOCK LOSSES	21
08	HERDER WELLBEING	23
09	PROJECT IMPACTS ON LIVESTOCK	24
10	REVIEW RECOMMENDATIONS	25
	ANNEXE 1	26

01 INTRODUCTION

Mongolia is unique. 30% of the population earn their primary income from herding livestock¹, leading a traditional nomadic life to enable their animals to access pasture throughout the year. This way of life is necessary due to the very harsh climatic conditions. Winters are long, cold and stormy with temperatures averaging -21°C² in January but can slip as low as -50°C or -60°C, while rainfall can be low. Herders, and therefore the wider Mongolian economy are vulnerable to the impacts of extreme weather events. Dry summers followed by extreme winters can cause mass livestock mortality known as 'dzud'.

While harsh winters pose a serious risk to livelihoods and herder wellbeing, they can also be predicted, making it possible to act early to mitigate the harm and loss they cause. The National Agency of Meteorology and Environmental Monitoring (NAMEM) produce annual dzud risk maps which they update during the winter months. These classify dzud risk across the country in five levels ranging from 'the least risk' to 'very high risk'

In December 2019, World Vision and Save the Children alerted the Start Fund to anticipate a harsh winter, when NAMEM identified most of the areas of four aimags (provinces) of Mongolia as at very high risk of dzud-like conditions. Recognising that herders in these aimags had also experienced these conditions in 2016, 2017 and 2018, decision makers allocated £200,000 (\$244,720) to act early to mitigate the risks of harsh winter conditions to herders and their herds. The intervention took place in Khovd, Bayan-Ulgii, Uvs and Gobi-Altai. It consisted of a distribution of cash, hay and fodder, combined with a booklet on protection of children and family members and nurturing weak livestock. This study took place in May 2019. It aimed to assess the impact of the intervention on the condition of recipients finances, livestock and wellbeing. It also sought build understanding how and when herders prepare for and cope with winter, to inform future programming.

¹ As reported by Naranchuluun Gelegjamts, Senior Officer for livestock policy implementation and coordination, National Agriculture Agency

² <https://climateknowledgeportal.worldbank.org/country/mongolia>



02 METHODOLOGY

A theory-based approach to designing this study. The expected chain of events from the release of funds to impact on herder wellbeing was set out, and research questions identified to look across this:

01

Start members can access forecasting and risk analysis to predict dzud in Mongolia

02

Combined with their knowledge of exposure and vulnerability, this enables reliable prediction of dzud impacts for identified population groups

03

Start Network decision makers will allocate funds, which enabling an intervention to begin before the main impacts of the dzud are felt by herders

04

Receiving a cash payment and fodder can enable herders to mitigate the main impacts of a dzud, in a way which would not have been possible without intervention.

05

Because herders were able to take additional preparations and mitigation measures, less loss occurred, particularly of the herds, and experienced better wellbeing

Research questions were developed to explore each of these links in turn, to understand attribution and the different types of impact the project had.

2.1 RESEARCH QUESTIONS

- 1 Can Start members access dzud forecasting information of sufficient quality? Was the prediction correct in terms of geography, groups effected, intensity?
- 2 Was the anticipation alert earlier than other harsh winter related interventions? Was the intervention considered timely?
- 3 Did beneficiary communities prepare for and cope with the impacts of dzud differently to non-beneficiary communities? If so, how? Did beneficiary communities experience different types or severity of impact from the winter conditions? If so, how?
- 4 Can we demonstrate that the cost of the cash transfer and fodder is less than the loss experienced by non-beneficiaries, through increased interest on loans, lost livestock & lost newborns, and diminished livestock condition?

2.2 SAMPLING AND DATA SOURCES

Different data sources were identified for each question. A household survey was carried out reaching 95 beneficiary households and 93 control households, across seven of the fifteen soums (districts) in the four intervention aimags. Households were intended to be sampled according to the same criteria as the initial distribution, herding their own livestock and owning fewer than 200 sheep head unit (SHU each). During implementation, the lack of availability of herders resulted in 27 families with herds larger than 200 SHU being sampled, of whom 21 were in the control group. Their data has been removed for questions where statistical tests have been conducted, including all of those quantifying livestock.

In addition to owning less than 200 sheep head unit, we ensured that families with infants, disabled members, children in higher education, pregnant and lactating women and senior citizens were represented across the sample. Local Government officials supported the identification of relevant respondents. The research would otherwise not be possible, where families within one soum can be hours apart and do not have fixed addresses. The first table shows the sampling by region, the second compares the characteristics of the control and beneficiary groups.



SAMPLING

AIMAGS	SOUMS	TRADERS	LENDERS	LOCAL GOVERNMENT	HOUSEHOLDS SAMPLED	BENEFICIARYS	CONTROL
Gobi-Altai	Bayan-Uul	1	1	1	17	53%	47%
	Khukh morit		1	1	13	38%	62%
Bayan-Ulgii	Bulgan		1	1	55	45%	55%
Khovd	Chandmani	1			24	50%	50%
	Erdeneburen	3	1	1	29	52%	48%
Uvs	Malchin			2	25	52%	48%
	Tarialan		1	2	25	64%	36%
					188	95	93

HOUSEHOLD INTERVIEWEE CHARACTERISTICS

	AVERAGE FAMILY SIZE	MEAN SHU ALL	MEAN SHU, LARGE HERDS REMOVED	AVERAGE # VULNERABILITY CRITERIA MET	AVERAGE # OF INFANTS
Beneficiary	4.11	115	107	3	1.3
Control	4.55	150	109	3	1.4

The household survey consisted of a mixture of quantitative and qualitative questions, focused the following areas:

- Perceptions of the previous winter and summer
- The steps households took to prepare for winter and summer, and how they access resources for this
- Loans and debt
- Livestock losses and condition
- Wellbeing of children and family members

Interviews with livestock traders, money lenders, local Government stakeholders and one for Ulaanbaatar based practitioners were also conducted to triangulate information from the herders. Local Government stakeholder interviewed targeted those responsible for supporting herders in their soums, including local governors, animal husbandry and emergency management experts. We took recommendations on which local stakeholders to interview from the soum administrative offices. Interviewees in Ulaanbaatar were sampled purposively based on their work on early action. They included representatives of the following organisations:

- 1 Ministry of Food, Agriculture and Light Industry
- 2 National Emergency Management Agency
- 3 National Agency for Meteorology and the Environment Monitoring
- 4 Food and Agriculture Organisation
- 5 Mongolian Red Cross Society
- 6 Mercycorps

A link to the data collection tools can be found in annex 1.

We paid close attention to when different approaches to coping with winter were taken, to test the rationale for intervening in January.

LIMITATIONS:

Sampling in clusters was necessary due to the extremely dispersed nature of Mongolian herder communities. The size of the sample was impacted by an unseasonal snowstorm, which delayed travel to the field and therefore reduced the number of days available to conduct the research. Herder economic and livestock data was highly variable with large ranges, statistical tests showed low confidence and as such quantitative results should be treated as indicative.

The sections on cash and loans required recall of expenditure and loan payments over winter 2018-2019. Figures provided in this section should be regarded as ballpark figures, rather than precise measurements, due to the relatively small sample and likely recall issues. Equally, respondents may have an idea of what they think enumerators are looking for in terms of answers, and tailor their answers accordingly. This is a particular risk related to questions around the cash grant and expenditure during the period the cash grant was provided.



FINDINGS

03

WAS THE FORECAST CORRECT?

3.1 KEY FINDINGS

- 1 Descriptions and perceptions of winter conditions vary significantly by stakeholder group. Ulaanbaatar based stakeholders generalised across the whole country, while local stakeholders are better placed to comment on severity of conditions in their own areas.
- 2 The dzud risk map should be complemented by other information sources, for example sub-seasonal weather forecasts. While the map gave the highest risk level for the aimags targeted, three out of four of these did not report experiencing severe winter conditions.
- 3 A minimum of 50% of herders in each aimag described winter conditions as 'harsh'. 40% of herders in Uvs described conditions as 'very harsh'. Lenders and traders did not see harsh winter conditions manifest in the business they do with herders in 2018-2019.
- 4 Onset of winter conditions is hard to predict and can be as early as November. Stakeholders reported being able to predict winter conditions at the end of summer, depending on rainfall and hay harvests.

3.2 PERCEPTIONS OF WINTER 2018-2019

Funds were disbursed on the basis of a 'very high' risk of dzud occurring, referencing poor conditions in summer 2018 and limited winter preparedness among herder households. Predicted impacts were stress and trauma, livestock mortality and impacts on livelihoods. All participants were asked for their perspectives on 2018-2019 winter conditions.

When reporting on weather conditions, participants in Ulaanbaatar generalised over the whole country, for example remarking on overall livestock losses or % coverage of dzud conditions. Their consensus was that dzud conditions were limited in 2018-2019. Representatives of NAMEM and the Food and Agriculture Organisation also pointed out significant variability across the country. This was reflected by findings from aimag and local level stakeholders, and herder reflections who shared accounts of localised extreme weather.

Herders were asked about their perceptions of winter and the preceding summer. 18% of respondents rated the winter as 'very harsh', of whom 58% were based in Uvs. 68% of respondents reported that winter was 'harsh',

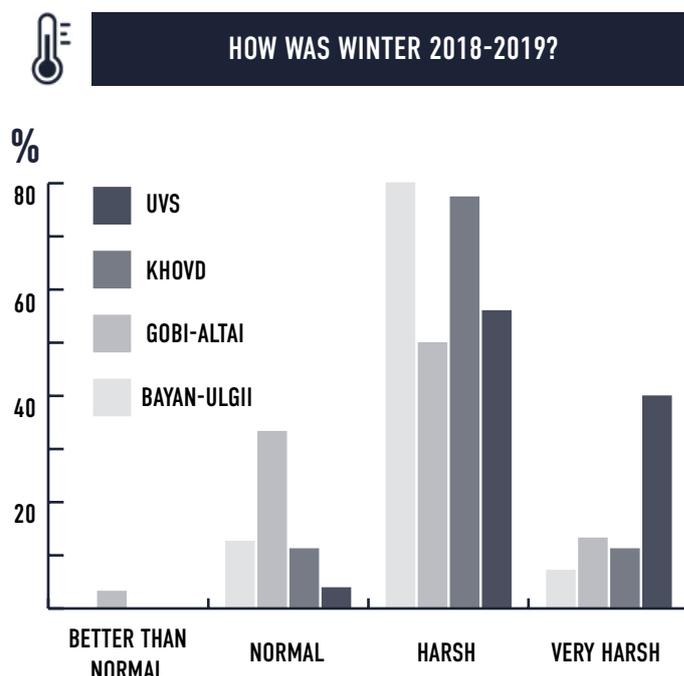
though in Gobi-Altai, 33% of respondents claimed winter was 'normal'. Poor conditions in Uvs were described in a focus group with Local Government authorities in Malchin soum:

"Generally, one of the difficulties had been an icy layer than had covered the ground under the snow. That layer emerged due to extreme fluctuation of temperatures. It was really terrible for livestock because they were not able to graze from earlier period of winter"

Local Government Office Focus Group,
Malchin Soum

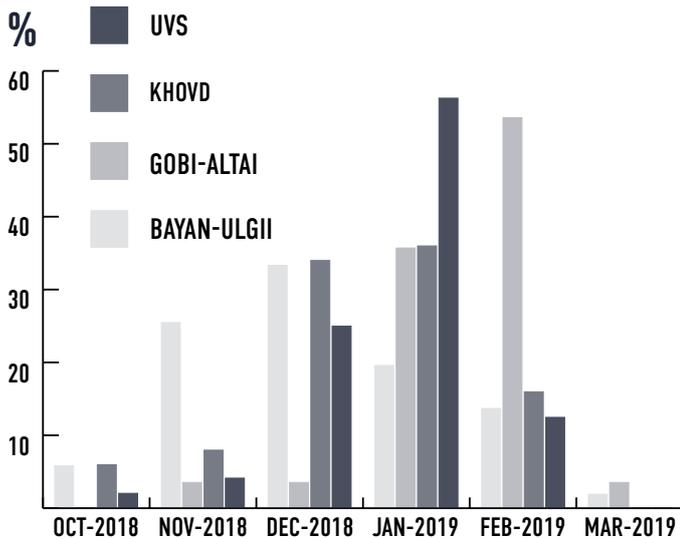
Malchin soum stakeholders reported livestock losses of 3.5%, compared to an average of 2-3%. Government stakeholders in Erdenburen and Bulgan soums elaborated similarly on how harsh winter conditions manifested in their areas. Khovd was reported as the aimag with the highest losses at around 3% by a representative of the Ministry of Food, Agriculture and Light Industry.

Lenders and traders were asked how winter conditions affect their business and whether they had seen these signs in 2018-2019 winter. Those interviewed did not report seeing effects of harsh winter conditions on their businesses.





IN WHICH MONTH DID EXTREME WEATHER START?



Herders were also asked when the poor weather started, there was clear lack of consensus even within aimags as to when the weather began, December and January were chosen most frequently.

3.3 FORECASTING HARSH WINTER

Harsh winter and livestock mortality are well understood in Mongolia, with extremely cold winter temperature and drought conditions in summer having been identified as the key drivers of livestock mortality. Summer conditions are analysed by NAMEM using a range of indicators including rainfall and pasture carrying capacity, which inform the dzud risk map. Aimag level Government stakeholders also anticipate harsh winter by observing summer conditions. Subseasonal weather forecasts of 60-70% accuracy are provided by NAMEM, which can indicate extreme cold with a lead time of between two and three weeks.

Herders, local emergency management officials, and other local stakeholders access weather information via an on-demand SMS system managed by NEMA in partnership with Mercy Corps. They also have traditional ways of predicting winter conditions, for example through observations related to butterflies and marmot behaviour.

"It all depends on previous summer precipitation level. If summer condition is good and pasture is well grown, the next winter will be bearable for herders"

Governor of Shurag Bagh,
Erdenburen Soum

Difficulties emerge when trying to combine weather and agricultural information with vulnerability and preparedness information, which is often dated by the time it is usable.

³ Mukund Palat Rao et al 2015 Environ. Res. Lett. 10 074012



04

WAS THE INTERVENTION EARLY?

4.1 KEY FINDINGS

- 1 Government support comes from February onward if it is made available, most often in the form of discounted hay and/or fodder, as happens in Uvs in 2019.
- 2 Other early action organisations have implemented in December and January over the 2017-2018 winter.
- 3 Herders have differing views on when it is appropriate to provide support, with January having been the most popular month for support when resources are depleted and exhaustion is common. Results of this study show January is an appropriate time for hay and fodder, while cash would be useful earlier.

Crisis Anticipation interventions aim to be earlier or have more appropriate timing than other humanitarian assistance. This was explored through asking herders directly about what assistance they had received, when it's best to receive support and why. We also discussed intervention timing with other early action practitioners in Ulaanbaatar.

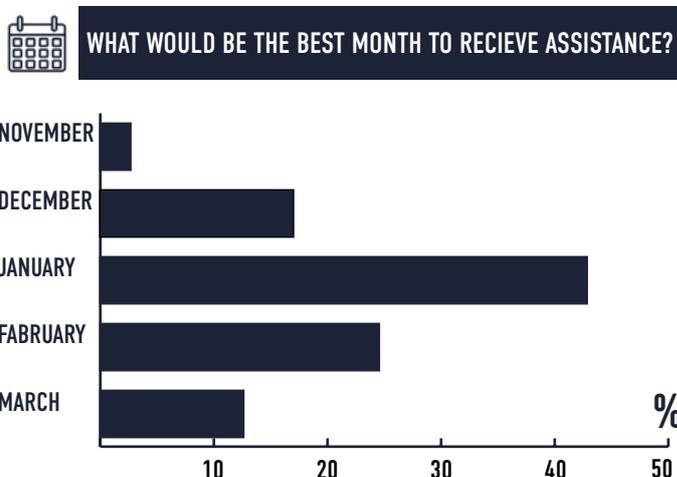
4.2 WAS OTHER ASSISTANCE RECEIVED IN 2019?

28% of herders interviewed received other support in 2019, of whom 48% were beneficiaries. The largest group of recipients of other aid were in Uvs, which reported the worst winter conditions of the four intervention areas. Of these, the overwhelming majority (80%) of was discounted animal feed from the Government, in February, March and April.

The Mongolian Red Cross Society and Food and Agriculture Organisation both have early action mechanisms which did not trigger in 2018-2019. Their threshold of 40% of the Mongolian landmass of very high risk of dzud conditions was not met. Both intervened in 2017-2018, with FAO reaching communities in December though a cash for destocking programme, and Red Cross in January with cash and an animal care kit.

4.3 WHEN DO HERDERS WANT ASSISTANCE?

Herders were asked in which month they would prefer to receive assistance and why, they were invited to choose as many months as they felt appropriate.



January was the most popular month for support, though as this is when the intervention happened, it is possible some herders were primed to mention this month. Herders gave different reasons for seeing support as useful at different times, in November and December, they mentioned it would be useful before livestock deteriorates and the weather gets too harsh. In January and February, requirements for hay and fodder, plus support coping with exhaustion and extreme weather came out more clearly. In March birthing season takes place, which can be risky if the weather is still poor. Local Government stakeholders echoed this, though one participant advocated for activities to begin in early autumn when hay and fodder are being stockpiled.

	DECEMBER	JANUARY	FEBRUARY	MARCH
WHY	Before the weather gets harsh /snows a lot	Extreme cold/winter	Extreme cold	Birthing season
	Before livestock condition deteriorates	Livestock deteriorated and exhausted	Livestock deteriorated	
		Hay/fodder running low	Hay fodder runs out	

"As December starts, winter situation get worse and all livestock start to emaciate."

"[January is an] extremely harsh time, livestock and herders together were severely exhausted."

(quotes from herders are anonymous)



05

DID CONTROL AND BENEFICIARY GROUP HERDERS TAKE DIFFERENT PREPAREDNESS AND COPING MEASURES?

5.1 KEY FINDINGS

- 1 Survey results suggest that beneficiary households did not spend significantly more to cope with winter conditions than the control group in the period following the intervention and were not less likely to miss other critical expenses.
- 2 Survey results suggest beneficiary and control group herders were not more or less likely to take out loans following the intervention. Loan sizes in the beneficiary group were slightly smaller on average, but a larger sample would be required to confirm this.
- 3 The majority of cash transactions related to winter take place in autumn months, from September to November. Economic activity related to winter preparedness dropped off significantly from January on, more enquiry would be needed to explore this. It could be that this is when cash runs out, a major winter festival also takes place which likely diverts attention. The timing of this should be considered when planning cash distributions.
- 4 Around 20% of items gathered by herders in preparation for winter are from their own supplies or are gathered from the local environment. This demonstrates the critical importance of non-cash assets such as knowledge, skills and physical capacity are so critical to managing winter conditions.



Herder household in Erdenburen soum, Khovd.

5.2 PREPARING FOR WINTER:

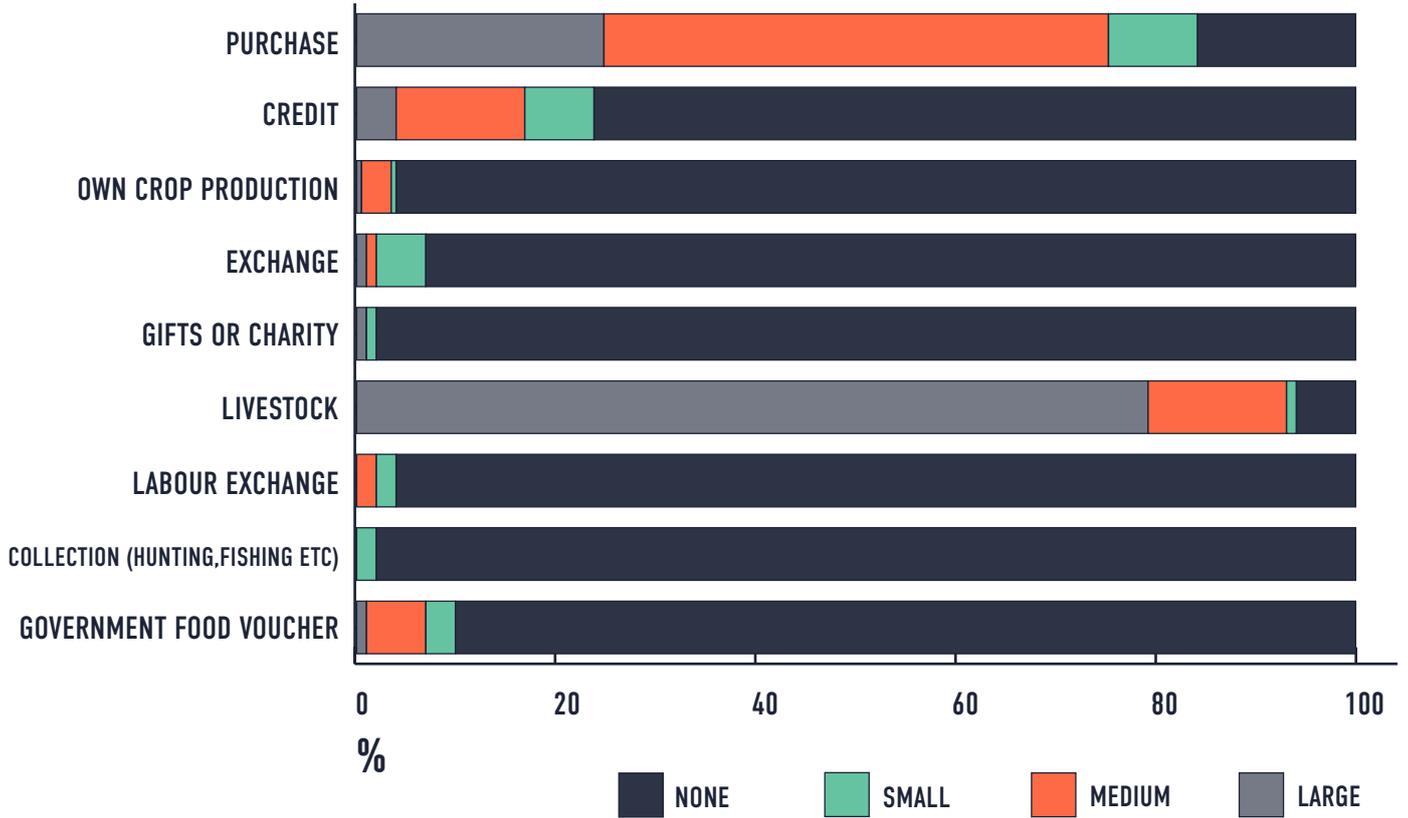
Beneficiary and control group herders were asked what measures they took to prepare for and cope with winter conditions and when, to establish any differences in preparedness measures taken between control and beneficiary groups. The results were then analysed to look at when peak times for winter preparedness are and better understand priorities. The question about what herders did was an open answer question, their answers were then coded into categories as below. Herders were also asked how they access food and income in normal circumstances.



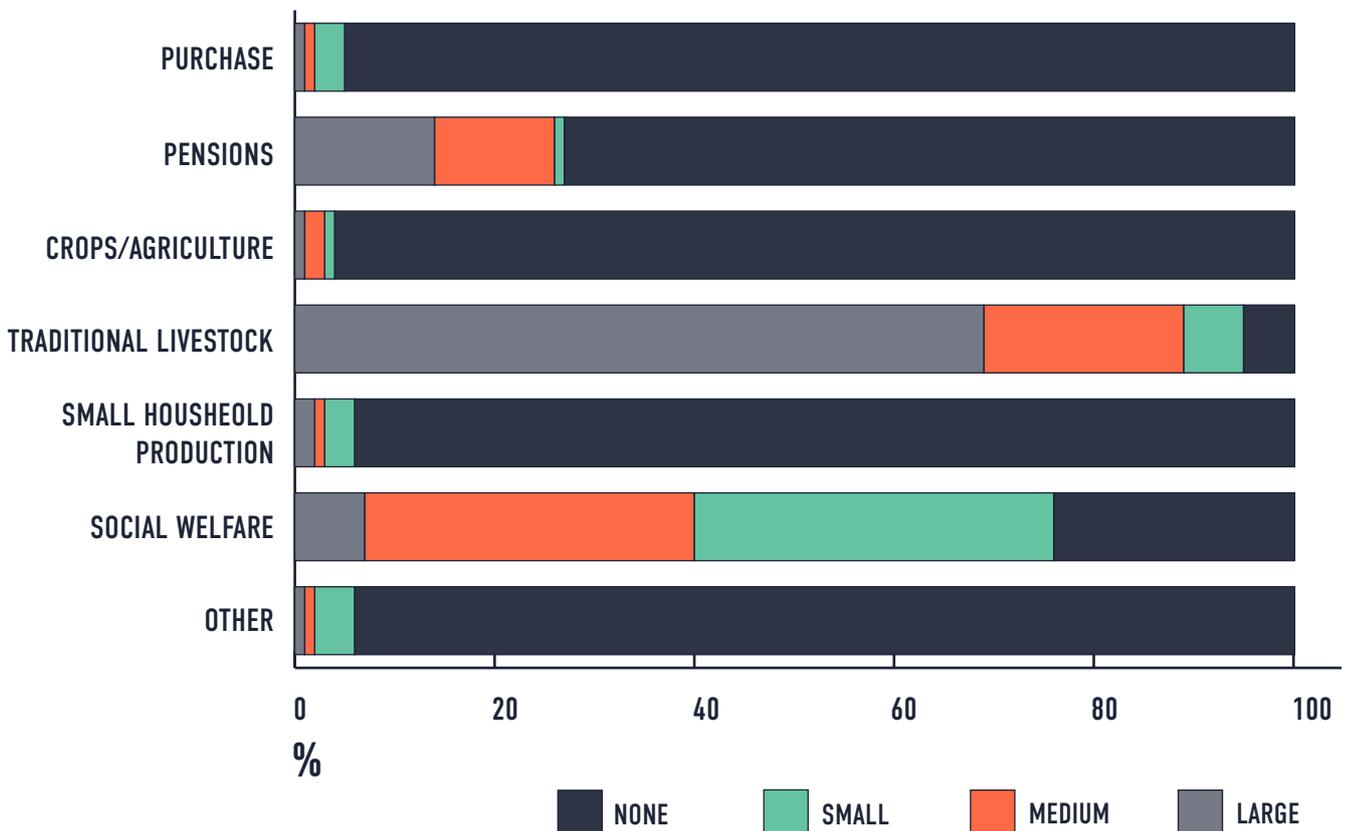
Zagila Bekvan, 66, Erdenburen. Received cash, hay and fodder in January 2018 from Save the Children.



WHAT ARE YOUR MAIN SOURCES OF FOOD?



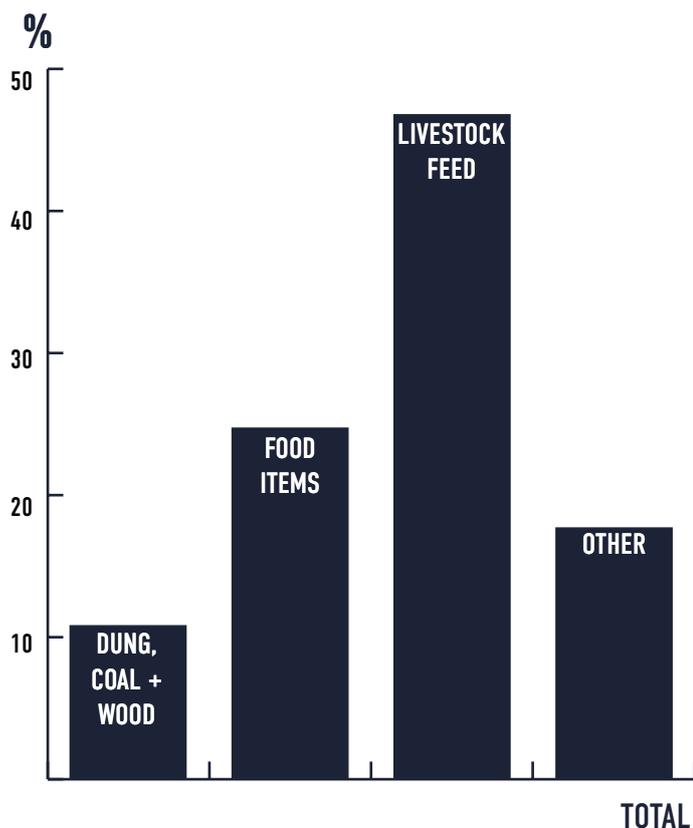
WHAT ARE YOUR MAIN SOURCES OF INCOME?



5.3 WHAT ACTIONS DID YOU TAKE, AND WHEN?



WHAT DID YOU BUY TO PREPARE FOR OR COPE WITH WINTER?



The above graph shows the breakdown of all items reported by herders to have been purchased, prepared and gathered to manage winter conditions. 'Other' includes investments in animal shelters and supplements, medical supplies, winter clothing, home winterisation in small numbers. Livestock feed is the clear priority, herders either can collect hay from their local areas or purchase it. Both require cash input for transport at a minimum.

Availability of hay and fodder is estimated by the Government through looking at grass yields, grazing capacity and livestock numbers. Herders are requested to make their own hay and fodder reserves, reserves are also kept at all administrative levels and can be sold to herders at 50% discounts if conditions are poor, as reported in Uvs⁴.

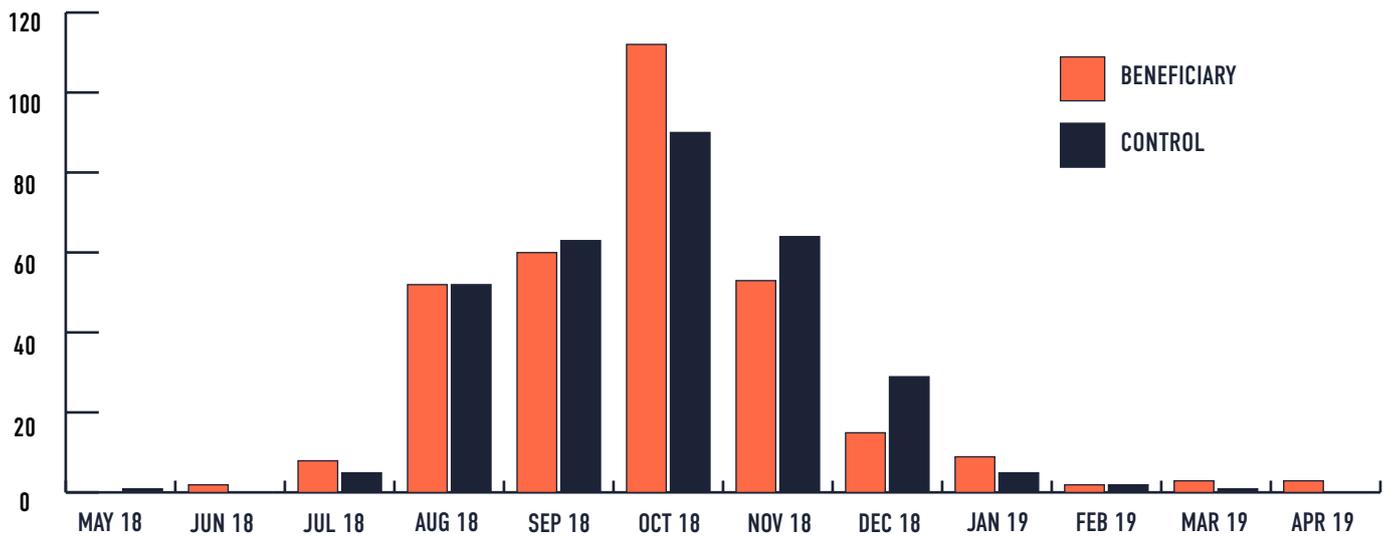
Herders reported carrying out the majority of their winter preparedness measures from August to September, with activity dropping off significantly from January after.

⁴ Reported in focus group in Malchin Soum with the Local Governor and Government authorities





WHEN DID YOU BUY OR COLLECT THE ITEMS YOU NEEDED FOR WINTER?



Asking herders when they took their preparedness measures helps define when early action investments could be most relevant. It also shows that beneficiaries reported a very modest number of additional harsh weather related purchases after the cash distribution compared to the control group; seventeen purchases were reported compared to eight among the control group. Longer time spans, for example 'May – October' or 'Spring and January' were cited an additional 62 times. Fourteen responses were 'monthly', which were all for household food consumption.

Fewer beneficiaries reported taking winter preparedness or coping actions after the distribution than the control group. Grant recipients who did report purchasing additional supplies in January appeared to spend more on average than the control group. Median reported expenditure was 360,000 Tugrik in the beneficiary group, compared to 187,500 in the control group. Further sampling would be needed to confirm this. The fact that fewer members of the beneficiary group reported taking additional measures to cope with winter in January can perhaps be explained in part by the fact that they had also received hay and fodder, making it unnecessary to purchase more in January via other means.

While this study looked specifically at winter preparedness measures taken by herders, the cash grant was designed to enable herders to meet all basic needs during the harsh winter conditions. The post-distribution monitoring survey conducted by Save the Children⁵ in Khovd and Bayan-Ulgii found that 98.4% of the 265 respondents reported that the cash transfer helped families meet their basic needs. The World Vision⁶ post

distribution monitoring survey found that 100% of the 112 respondents increased household expenditure on food and other essential non-food items. These would have captured household needs not classified by herders as specifically related to winter conditions, but likely to be under increased demand during harsh winter conditions, for example fuel, livestock fodder. The research questions were designed on the logic that harsh winter conditions would necessitate increased expenditure for winter coping measures, but in the Mongolian context it is difficult to distinguish some of these items from basic family needs.

Herders were asked where they purchased their items and reflect on their quality. 65% of items used by herders came from the nearest Soum, with a further 10% coming from the nearest Aimag. 22% of items used by herders to manage the winter were either gathered from nature, for example from near by rivers, lakes and mines, or from their own herd or land. This shows the critical importance of herders own knowledge, skills and physical capabilities when considering winter preparedness measures. Overall herders were content with the quality of the items they gathered or bought, rating them as 'good' from a choice of 'poor', 'medium' or 'good' 82% of the time. This suggests if an intervention aims to cover items which herders would usually buy, cash is a valid option to support livelihoods, with the majority of items being available in a suitable location and of adequate quality. Previous market assessments have shown shortages and higher prices for fodder, resulting in the recommendation to deliver actual fodder instead of additional cash for fodder.

⁵Save the Children, March 2019: Post Distribution Monitoring Report ' Mongolia-Dzud Anticipation' project. Bayan-Ulgii and Khovd Provinces, Mongolia. <https://startprogrammes.box.com/s/3mc81dk1kslaosxdoel4lkwj3mravu>

⁶World Vision, March 2019: Post Distribution Monitoring Report Dzud Anticipation project. Uvs and Gobi-altai Provinces, Mongolia. <https://startprogrammes.box.com/s/jagj91f2s7h2o9g8lmb2w2h8knyky4lp>

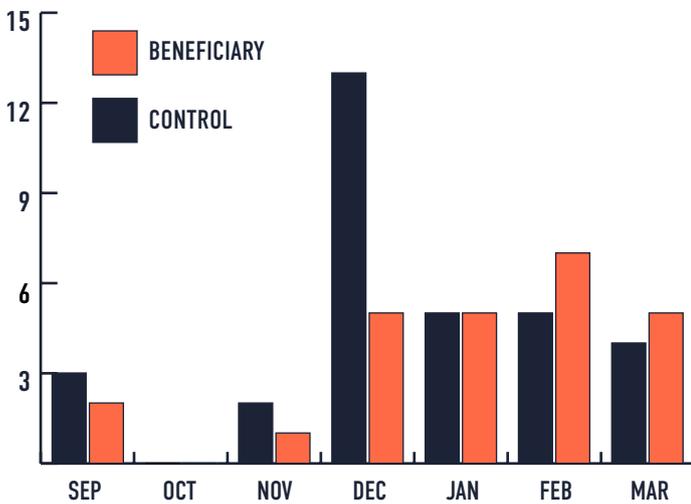


5.4 CASH SHORTFALLS

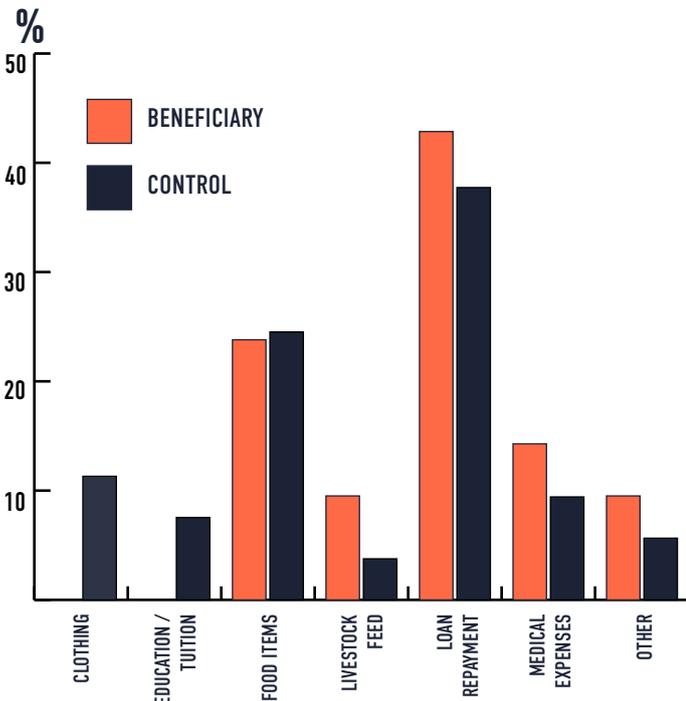
In addition to looking at whether herders took additional winter preparedness actions, they were asked if they had missed any critical expenses during the winter period and when. Some enumerators reflected that herders were unsure how to interpret this question. 37% of beneficiary herders reported having been unable to cover a critical expense, compared to 47% of the control group, however the main differences between groups occur outside of the intervention period. As with the actions which herders took to prepare for winter, this was an open question; items reported by herders were then coded into categories during the analysis process.



MONTHS INTERVIEWEES REPORTED MISSING CRITICAL EXPENSES



CATEGORIES OF KEY EXPENSES MISSED



5.5 GAPS IN PREPAREDNESS

Complementing herders' accounts of what happened in the winter of 2018-2019, they were also asked two hypothetical questions about how they would spend any additional funds, to better understand where the perceived gaps are. They were asked a general question about what additional preparedness measures they would have taken over winter if more cash were available, and a specific question about how an additional 250,000 tugrik (just under \$100) would be used in January. As with actual measures taken, if herders were able to do more to prepare for and cope with winter, the overwhelming preference was to provide more food for their herds. Both questions were open ended rather than multiple choice.

In terms of additional measures herders identified if they had more funds available, 67% of additional actions herders said they would take were purchasing livestock feed, while 11% were purchasing food for their families. Herders were able to list multiple additional preparedness measures in this question. The remainder of the answers were a mix of clothing, fuel for the fire, supplements and medicine for animals and other sundry items. Eight respondents said they wouldn't purchase anything else.

If herders were to receive additional funds in January specifically, 71% of responses were either livestock feed only, or a mix of livestock feed and other family needs. Eight interviewees reported spending funds at this time on Lunar new year.



A sack of cashmere in a herder household in Malchin soum, waiting to be sold.

5.6 SEASONAL AND ANNUAL VARIATIONS

SPENDING PRIORITIES: The Start Fund has funded dzud related interventions three times, the previous two were for response in February 2017 and March 2016. We therefore wanted to understand herders perspectives on whether they would take different actions if given cash later, in March. 26% of the beneficiary group and 40% of the control group said they would use the cash differently in March compared to January. Not all specified how they would spend funds differently in March and there was no consensus among those who did specify. The most common answer (ten responses) was that if given in March, herders would spend it to cover the costs of moving. Four herders mentioned if received in January, the funds would be spent on Lunar new year celebrations.

Although priorities for expenditure do not appear to change significantly between January and March, the timing of the intervention is still key. Livestock welfare can decline significantly between January and March, making timeliness key.

FOOD SOURCES: Herders were asked whether food sources changed through the year. 61% either said that food sources did not change, or listed a limited list of foods they eat throughout the year. 15% explained that they ate more meat in the winter and dairy in the summer. April was mentioned as lean month with limited available food by 9% of respondents. The remaining provided different descriptions in numbers too small to be grouped together, for example related to the availability of vegetables. A small number of herders reported planting and trying to grow different vegetables, with limited or unreliable degrees of success.

INCOME: Income follows a regular pattern among the herders interviewed, with cash generated primarily in May when cashmere is sold and between September and December when animals are sold for meat while their bodies are in good condition. Many families reported using loans between these periods, and paying them back when cash became available.

“Herders don’t have cash. Therefore it is common to get credit for food and goods. They pay the credit when they sell cashmere in May and June. This time is the richest time for herders to have cash in their hands”

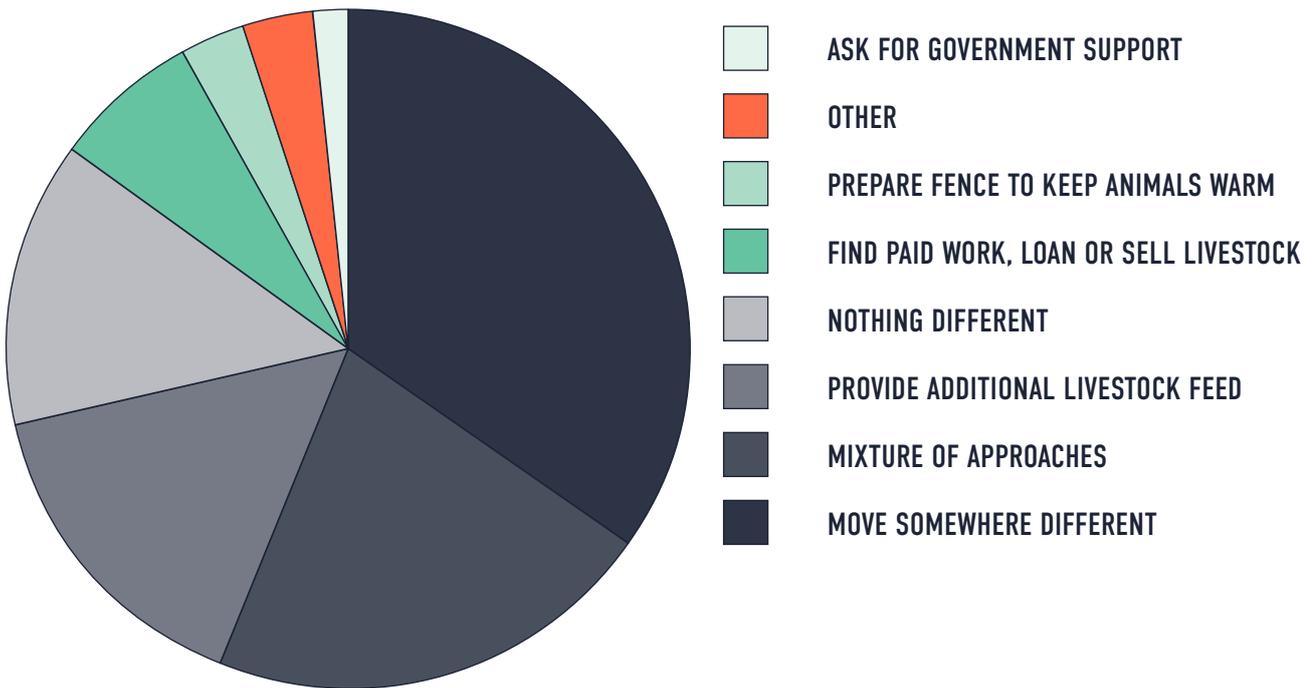
Tumenjargal Basan,
World Vision Data Collector + Project Coordinator,
describing the situation in Gobi-Altai province

DIFFERENCES IN A HARSH WINTER: Alongside normal seasonal differences, herders were if they did anything differently in a particularly harsh winter. Local Government stakeholders were asked an equivalent question. Moving was the most frequent answer, with 35% of respondents saying they move when conditions are too poor, the practice is traditionally called Otor. Typically herders move four times annually, to a different place for each season, but decisions around moving relate to conditions. Soum Governors reported having contracts with neighbouring soums to accommodate each others herders if needed. Moving during harsh conditions can be dangerous, especially for pregnant livestock. Only 7% reported taking measures specifically to access cash, including taking a loan, selling livestock or finding paid work.

	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
CASH		Main winter preparedness purchases			Lunar new year, popular time for loans				Cashmere sales, debts are paid
LIVESTOCK			Fattened animals are sold off for cash			Most losses occur if conditions are harsh			
							Birthing season		
WEATHER		Temperature drop	Dzud Risk Map published		Coldest conditions				
FOOD			Mainly meat and wheat products are consumed					Shortages most likely	Dairy is more available



WHAT DO YOU DO DIFFERENTLY IN A HARSH WINTER?



Bavuudorj Khasbaatar, a retired school teacher who received support to manage harsh winter from Save the Children in January 2018.



06

WERE HERDER LOANS AND DEBTS IMPACTED BY THE PROJECT?

6.1 KEY FINDINGS

- Herders commonly take food from their locals shops on credit and pay back when they sell the cashmere from their goats in May.
- 61% of herders reported having at least one type of loan. Interest rates do not appear sensitive to harsh winter conditions, neither herders nor lenders reported rising interest rates during harsh winters.

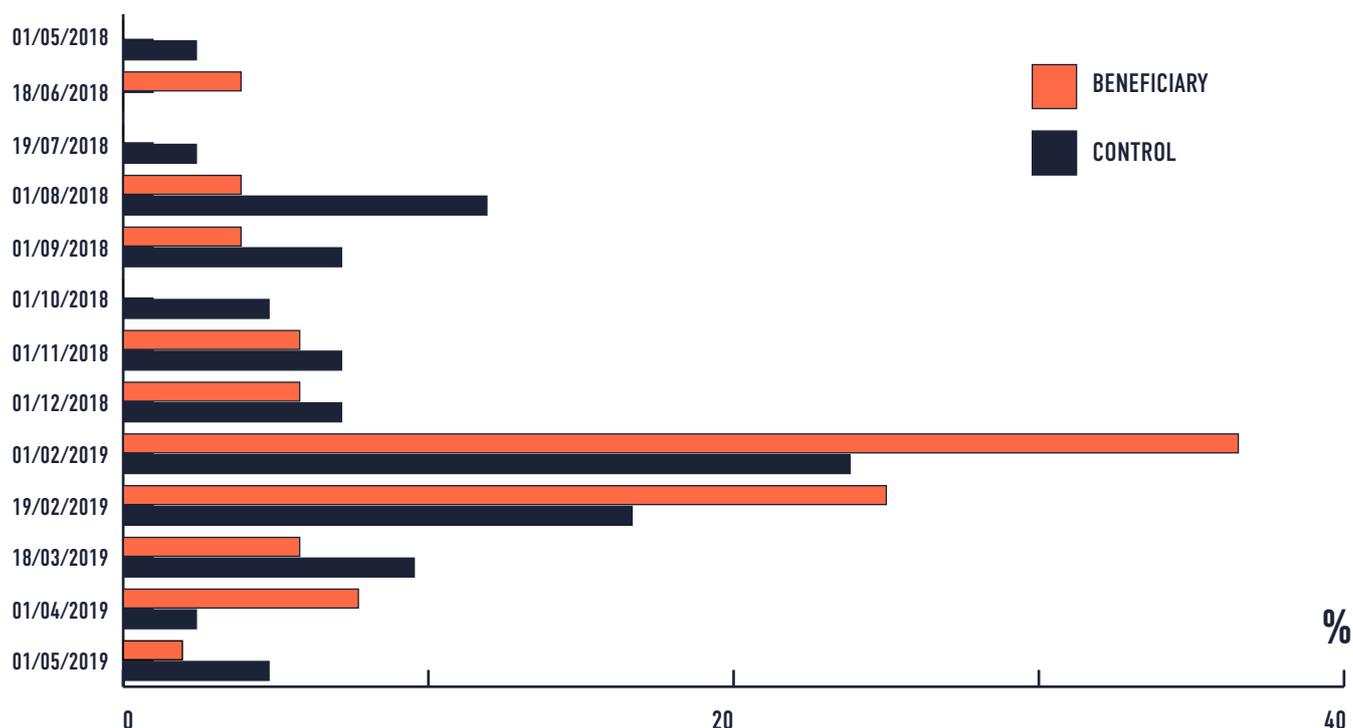
Loans and debt are a key element of herders economic situation. 53% of herders who had received the cash grant reported having taken a loan between January and the Interview in May, compared to 48% in the control group. The median loan size among the control group was 900,000 tugrik, compared to 700,000 tugrik in in the beneficiary group. The mean loan size in the beneficiary group was 1,056,968, compared to 1,301,916 in the control group. This suggests that while a cash grant has little impact on taking out loans, it limits their size, resulting in savings on interest payments for herders. Further sampling would be needed to confirm this.

Including loans which were opened before the intervention period, 61% of interviewees reported having at least one open loan. Of these, 60% were from a bank or other formal lender, 23% were from the supermarket, where goods are often given directly instead of cash. The remainder were from friends, family, or other informal lenders.

51% of loans were reported to have been taken out in January and February, with others being taken out relatively evenly throughout the year. January and February coincides with lunar new year celebrations which drive demand for credit at the beginning of the year. August and September are the second periods when demand for loans is high as tuition fees are due.



WHEN DID YOU TAKE YOUR LOAN?



6.2 LOANS AND WINTER CONDITIONS

73% of beneficiary herders with loans reported having taken their loan specifically to cope with harsh winter conditions, compared to 77% in the control group. 60% of the beneficiaries with loans claimed that winter conditions had adversely effected their ability to pay back loans, compared to 62% of the control group herders who had loans.

Reasons for this fell into two categories, first, that winter weather had harmed their livestock and therefore reduced their income. For example, through miscarriage among pregnant animals or by delayed or reduced cashmere output. The second category was that conditions meant that herders had to increase the size of their additional loans, for example to buy additional hay and fodder. There was not a significant difference in priorities for spending loans between control and beneficiary groups, animal feed, food items and children's education items were the three priorities.

“Because of the extreme coldness we spent all of our money to buy livestock feed and couldn't pay back our loan”

“We have not constant income so mostly we take loans from shops or bank to maintain our lives. Paying back directly depends entirely on our livestock. Wool and cashmere is sole source of income for us.”

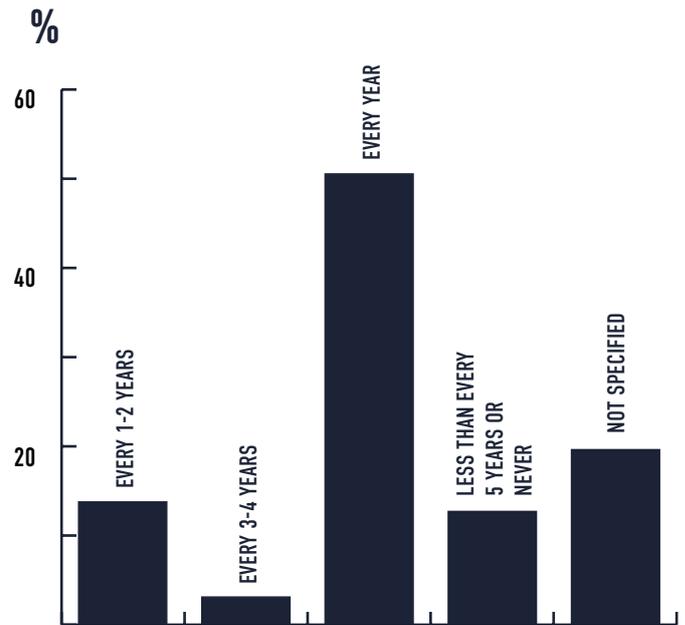
(anonymous herders from Uvs + Khovd)

50% of interviewees reported taking a loan every year to manage winter conditions. 10% claimed to take one every five years or less, and 20% did not specify. All but three of those who did not specify did not have any open loans, suggesting they also rarely or never take loans. September, January and February were identified as the most common times to take loans to manage winter conditions. Beneficiary herders appeared slightly less likely to have to borrow or rely on assistance from neighbours or relatives, with 36% saying they had done so between January and March, compared to 42% of the control group.

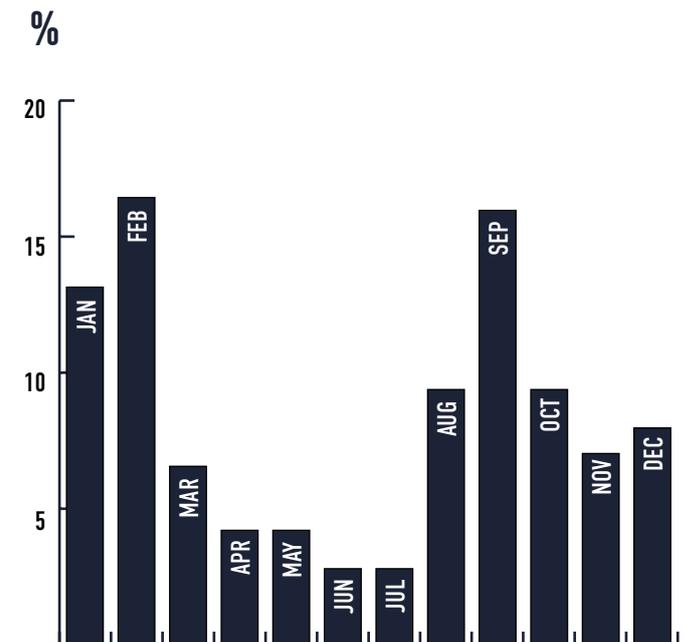
Access to credit is determined by the size of a herd, some herders reported being unable to obtain loans due to the small number of animals in their herd.



HOW OFTEN DO YOU TAKE OUT A LOAN TO COPE WITH HARSH WINTER?



WHEN WOULD YOU USUALLY TAKE OUT A LOAN FOR A HARSH WINTER?



Herders who had received the cash grant were asked directly if it had any impact on taking new loans or paying old ones. 64% replied that the grant did have an impact, of these 41% highlighted that it helped pay back an existing loan or avoid having to take a new one. 18% mentioned that they bought livestock feed straight away, despite having received hay and fodder within the scope of the intervention.

6.3 WINTER CONDITIONS AND INTEREST RATES

Taking loans appears to be slightly more common during deep winter months of January and February. It is not evident from either herders or lenders that interest rates fluctuate during this time, even if the situation is unusually difficult. Lenders tend to provide a fixed interest rate, if they are a formal institute rates are set centrally and are the same across Mongolia. For example, a representative of the Khaan Bank in Bayan-Ulgii explained their rates for herders had just decreased from 2-2.5% to 1.8%, a rate set in Ulaanbaatar and implemented at all branches. Many herders could not recall their interest rates, the most common quotes rate was 1.5%, with the highest being 8%.

“There is not change in any interest rates depending on any circumstances. Generally, it is constant. If the loan interest rate changes, the decision from headquarter will be issued to all departments”

Tsetsegmaa.D,
Communication Manager,
Khaan Bank, Bayan-Ulgii

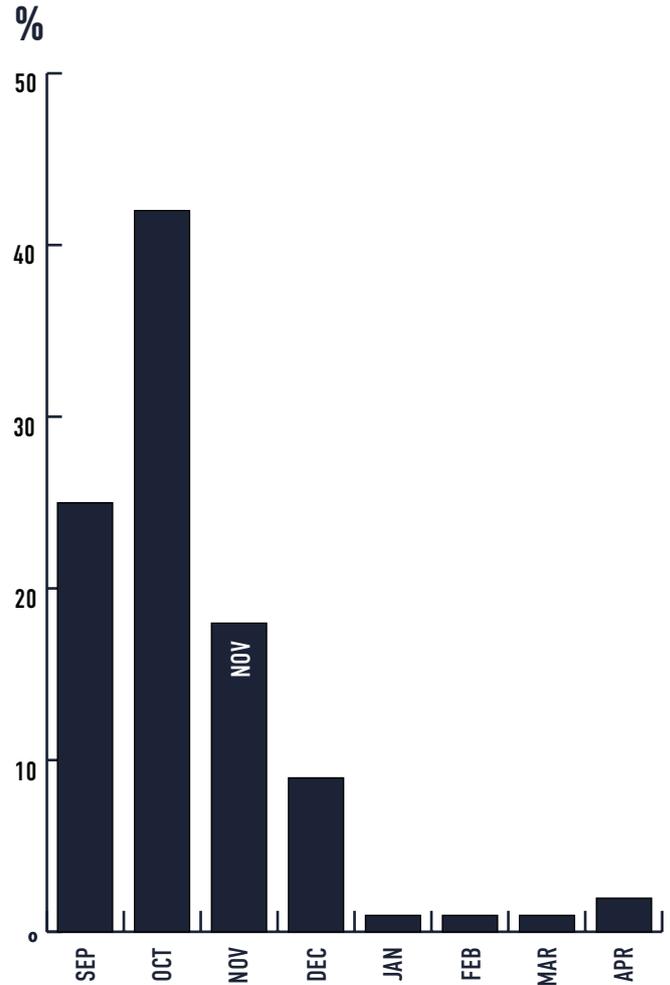
This suggests that while a cash payment may reduce loan amounts taken by herders in winter, their savings on interest rates are likely to be small in proportion to the cost of the distribution. Herders and lenders reported that the typical time to pay off loans is during May when the cashmere is sold.

6.4 RAISING CASH TO PREPARE FOR WINTER

Herders interviewed typically raise cash between September and December to invest in winter preparedness, by selling livestock. Only five livestock sales were recorded to have taken place between the January – May. 40% of herders reported selling animals between September and December, median income from these was 900,000 Tugrik. Comparing this to the median estimated expenditure on winter preparedness, which was 634,404 Tugrik suggests many herders are likely to have a small amount of income over winter months to manage others costs, such as tuition, medical, or other family related costs.



WHAT MONTH DID YOU SELL ITEMS TO COPE WITH A HARSH WINTER?



07 PROJECT IMPACTS ON LIVESTOCK

1 The impact of the project on livestock was clearer, median losses in the beneficiary group were 6.95 sheep head unit, compared to 9.25 in the control group. The range of losses also differed, with members of the control group experiencing between 0 and 122.5 losses and members of the beneficiary group experiencing between 0 and 53.4 losses.

2 Members of the beneficiary group were 1.34 times more likely than the control group to survive winter without any losses occurring in their herds. In Uvs, which reported the worst weather conditions, this rose to 2.33 times more likely to experience winter with no losses. This suggests early action may have a greater impact during harsher conditions.

3 Livestock losses were reported primarily to have occurred in February and March, making the January hay and fodder distribution a relevant and timely intervention. Herders also prioritised hay and fodder overwhelmingly over all other goods in all questions about what they had bought or would buy with increased availability of funds.

Баянхадирхан Бад

Төрөл	Бүтэц	Эр	Тол		1Нэс		2Нэс		3Нэс		4Нэс		5Нэс		Хяналт
			Эр	Эм	Эр	Эм	Эр	Эм	Эр	Эм	Эр	Эм	Эр	Эм	
ТЭ	234	5	13	17	14	14	4	4	6	10	7	10	24	54	68
АА	1331	42	111	116	72	51	39	19	50	32	455	329			367
УХ	1750	30	201	223	175	173	100	96	161	591					682
ХО	31565	190	5085	5092	3821	2079	4749	10524							12593
ЯМ	12325	96	107	114	174	752	230	430							5014
АН	47195														18719
УУНЭВС	15814														1341

Мал буйхуй өрх = 169
Малчид өрх = 134
Малчид өрх = 79
Мал буйхуй өрх = 6
Уунэвс эр = 384
Эм = 301

Баянэрдэнэ Бад

Төрөл	Бүтэц	Эр	Тол		1Нэс		2Нэс		3Нэс		4Нэс		5Нэс		Хяналт
			Эр	Эм	Эр	Эм	Эр	Эм	Эр	Эм	Эр	Эм			
ТЭ	190	1	15	13	9	7	1	1	1		4	4	56	68	72
АА	1220	31	99	80	58	49	16	13	25	12	456	376			393
УХ	1769	20	229	239	142	154	36	43	164	735					778
ХО	28338	157	4665	4734	265	412	5633	1266							13038
ЯМ	13638	83	1001	1020	168	160	318	522							5938
АН	45000														20219
УУНЭВС	44040														1885

Мал буйхуй өрх = 147
Малчид өрх = 135
Малчид өрх = 11
Мал буйхуй өрх = 1
Уунэвс эр = 325
Эм = 390

2008 Livestock census from Malchin Soum Governor office, Uvs. Showing births and deaths of goats, sheep, horses, cows and camels.

new-born animals, compared to a median of 9.25 SHU of grown animals and 0 SHU of new-borns in the control group. The range for lost adult animals in the control group was significantly larger, running from 0-122.5 SHU, compared to 0-53.4 in the beneficiary group. The range for new-borns in the control group was also larger, running from 0-95.3 compared to 0-78 in the beneficiary group.

Herders who had received hay and fodder were 1.34 times more likely to survive winter with no losses in their herds, rising to 2.33 times more likely in Uvs, where the harshest conditions were reported. Additionally, Bayan-Ulgii is home to the largest sample of herders who reported no losses, although herders from each aimag are represented in the group.

Livestock loss and wellbeing is monitored carefully by the Mongolian Government, who take a livestock census each December to stay abreast of current numbers. Stakeholders at all levels offer precise numbers of livestock losses, births, deaths of new-borns and overall reflections on the condition of animals, including cashmere and milk production. When asked about their own herds, some produced a log book, used to track their herds through the year.

In a very harsh year, losses can be up to 10 or more %. An index insurance product is available to herders when losses at the soum level hit 6%, however this does not seek to limit loss but releases funds after losses have been counted. In 2018-2019, livestock losses were recorded at around (CHECK %), which was not regarded by central stakeholders as beyond normal. Losses in Malchin, which recorded the worst weather conditions were around 3.5% according to local Governor office interviewees.

Across the sample, beneficiary herders reported losing a median of 6.95 SHU of adult animals and 3.75 SHU of



IMPACT ON LIVESTOCK

		HERD SIZE	NEW-BORNS	LOST NEW-BORNS	DETERIORATED CONDITION	LOST SHU
BENEFICIARY N = 90	MEDIAN	103.15	22.95	3.75	0	6.95
	INTERQUARTILE RANGE	75.75 - 143.56	10.88 - 37.53	0 - 17.85	0 - 11.25	0.93 - 14.43
CONTROL N = 72	MEDIAN	111	20.25	0	0	9.25
	INTERQUARTILE RANGE	58.89 - 6.54	21.51 - 2.39	16.54 - 1.83	19.84 - 2.20	20.91 - 2.32

7.2 CIRCUMSTANCES OF LIVESTOCK LOSSES

Herders were asked about the circumstances of losses of new-born and adult animals, 56% of interviewees drew attention to extremely harsh weather conditions between January and March. This demonstrates the critical importance of a timely distribution to herders, ensuring hay and fodder are received before the risk of livestock losses peaks. Herders and local Government stakeholders also mentioned the impact individual storms can have, especially if they take place while herders are moving from one place to another.

"In March, heavy snow and strong wind had impacts especially on pregnant animal resulting miscarriage. Most of lost new-borns were miscarried."

"All female livestock miscarried and we didn't have any new-borns this spring."

(Anonymous beneficiary and control herders from Gobi-Altai + Bayan-Ulgii)

"It is directly related to financial condition. if we have more cash we can prepare more hay and fodder. Price for hay and fodder is high. There is no loan or credit for hay/fodder in needy situation."

"In summer of 2018, there was no rain and grass growing was poor. Also, it's closely related to poor financial condition."

(Two anonymous beneficiaries, Gobi-Altai)

To better understand conditions for livestock, herders were also asked about access to hay and fodder, milk production and livestock prices. Despite the fact that some herders had received hay and fodder, the two groups responded similarly when asked about access to hay and fodder. 51% of beneficiaries described it as poor or very poor, when given 'enough', 'poor' or 'very poor' to choose from, compared to 57% of the control group.

When discussing their lack of access to animal feed, cash limitations were the most frequently cited reason for poor access. Herders sometimes collect hay from their surrounding fields instead of purchasing it, which requires cash to fund transport back to their homes. Herders who mentioned transport costs in their winter preparedness expenditure estimated spending 100,000 – 500,000 tugrik, with most falling towards the lower end of the range.

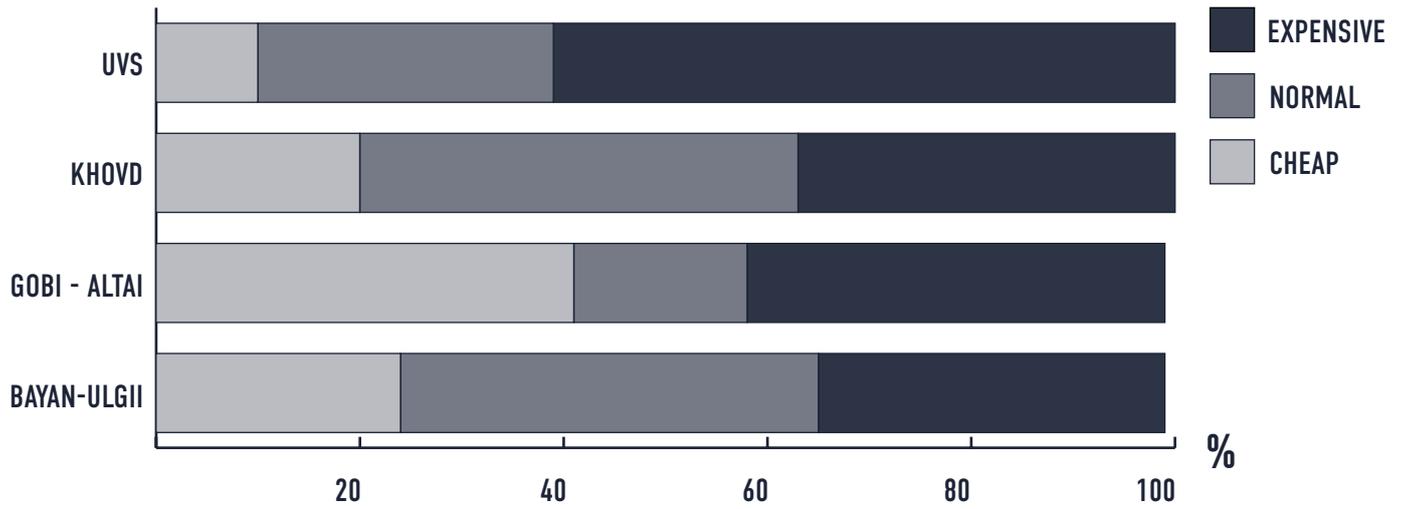
Livestock prices and milk production were finally looked at to get a more detailed picture of the overall condition of animals. Livestock traders explained that during harsh weather in Mongolia, livestock prices rise due to lack of supply, so high prices can indicate poor weather. This triangulates with herders account of the weather, with Uvs reporting both the worst weather conditions and the highest livestock prices in January. Poor milk production suggests poor livestock conditions and points to possible impacts on nutrition, with dairy being a key food source for herders.



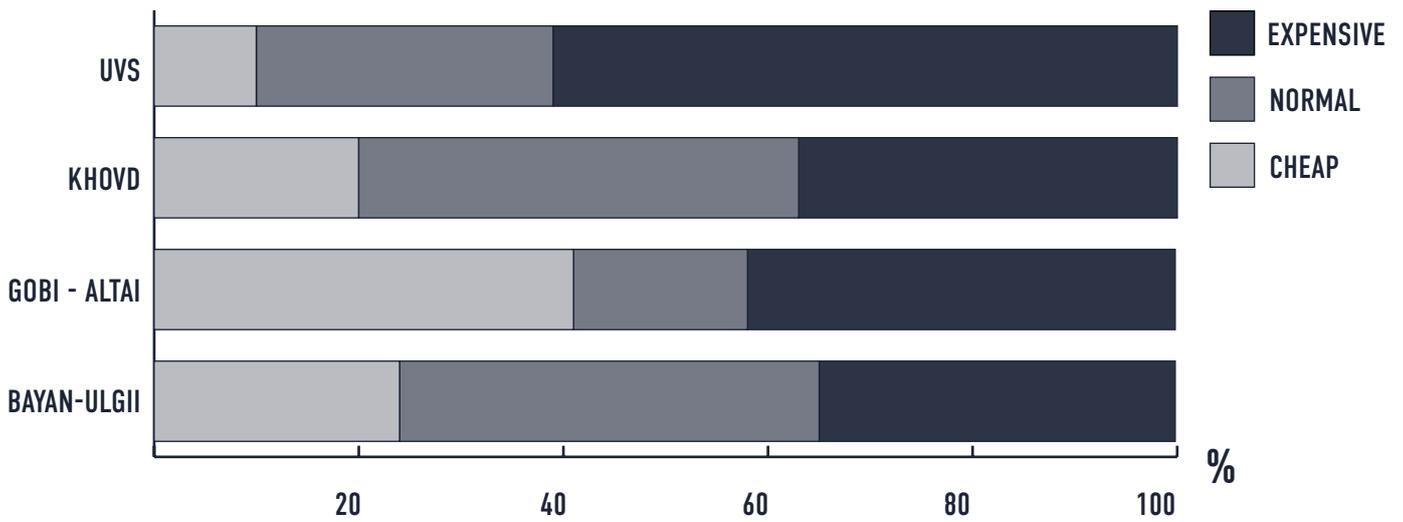
Young goats in Erdenburen, Hovd.



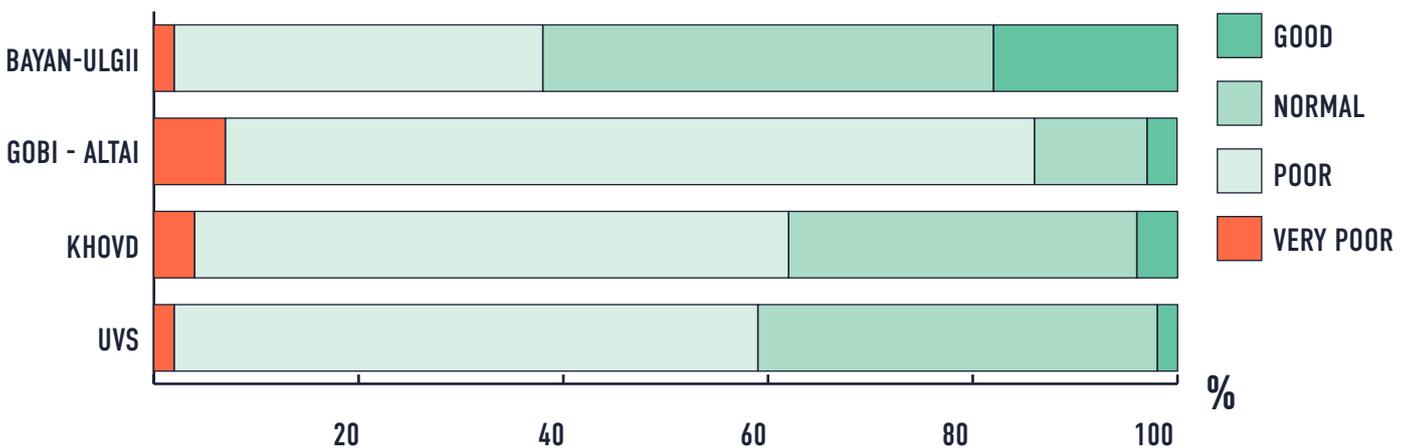
HOW WERE LIVESTOCK PRICES IN JANUARY COMPARED TO A NORMAL WINTER?



HOW ARE LIVESTOCK PRICES NOW?



HOW HAS MILK PRODUCTION BEEN COMPARED TO NORMAL, SINCE DECEMBER 2018?



08

HERDER WELLBEING

Herders reported on a set of wellbeing indicators, relating to them and their children's access to food, anxiety levels and sleep quality. The responses did not show a conclusive difference in these areas between beneficiary and control group herders. Many variables impact these factors and the time lag between the study make recall of any initial impact on wellbeing less likely. The welfare of herds and psychosocial wellbeing of herder families are known to be closely connected, for example, one herder household reported the suicide of their eighteen year old son after their livestock were lost in a storm years before. By supporting families to maintain their livestock through the winter, the likelihood of this trauma and associated livelihood concerns are reduced.



Mr and Mrs Donoi of Malchin soum received supplies from World Vision in January 2019. Their livelihood is entirely from livestock, they own sheep, goats and one horse. Mrs Donoi explained that receiving the cash in January minimised her livestock losses, while also helping her feel supported psychologically.

Mr and Mrs Donoi of Malchin soum received supplies from World Vision in January 2019. Their livelihood is entirely from livestock, they own sheep, goats and one horse. Mrs Donoi explained that receiving the cash in January minimised her livestock losses, while also helping her feel supported psychologically. The wellbeing of herders remains a significant concern, particularly among local and National Government agencies. Herds are often the priority when deciding how to spend cash, while herders themselves face significant challenges to their wellbeing in the winter months. Exhaustion in the early months of the year was raised as a significant issue, while families are often separated as children are educated in soum centres where they board. Interventions to support wellbeing are likely to be beyond scope of what would be possible in a 45 day Start Fund intervention.

“If livestock start to emaciate, possibility of regaining it's strength and fat is very low. If that already happens, support and activities should be taken to improve physiological wellbeing of herders”

Azat Z,
Senior specialist of Disaster Risk Planning
Department, Bayan-Ulgii, State Inspection
officer of disaster management

“Health and social care for herders is very key. Livestock is emphasised but lots of education and social needs are unmet. Six to seven year old children and mums are in the soum centre. Dads are away with the herds, families are separated. More help is also needed for young herders”

Naranchuluun Gelegjamts,
Senior Officer for livestock policy
implementation + coordination,
Ministry of Food, Agriculture and Light Industry

09

PROJECT IMPACTS ON LIVESTOCK

The cost of the intervention was \$120 per household, including all logistical, management and monitoring costs. The value of one sheep unit is around \$60 (May price) depending on the size and condition of the animals. This means that interventions with even modest reductions in livestock mortality can generate savings greater than the project costs. Value for money can be calculated through calculating the approximate value of the avoided losses.

In addition to the value of the animal itself, herders lose associated products including milk, meat and cashmere or wool when an animal dies. These calculations have taken only estimated difference in livestock mortality into account and use and not lost value from animal products, making the estimates low. A range of potential savings has been calculated, using avoided losses at the bottom, middle and top of the interquartile range of livestock losses reported by beneficiary herders.

These calculations should be regarded as indicative only.

SAVINGS BASED ON ESTIMATED LIVESTOCK MORTALITY REDUCTION X ESTIMATED VALUE OF LIVESTOCK		
\$122,220 total project savings	\$60 per household	LIVESTOCK MORTALITY REDUCTION OF 1 SHU PER FAMILY
\$855,540 total project savings	\$420 per household	LIVESTOCK MORTALITY REDUCTION OF 7 SHU PER FAMILY
\$1,711,080 per household	\$840 per household	LIVESTOCK MORTALITY REDUCTION OF 14 SHU PER FAMILY



10 REVIEW RECOMMENDATIONS

- 1 While some humanitarian agencies set clear threshold to trigger for early action, it is important to develop a consensus around common thresholds, risk indicators and scale (nationwide vs. localized crises) among humanitarian agencies and government counterparts such as NEMA and MoFALI. Close collaboration and joint planning could enable the early action approach to be fully scaled in Mongolia.
- 2 Agreed thresholds should take into account the point at which existing Government response capacity is exceeded and the fact the results suggest activities have a greater impact on households in harsher conditions.
- 3 The dzud risk map is key but should be complemented with other information sources for predicting impacts or harsh winter, including a sub-seasonal forecast.
- 4 The window of opportunity for early action opens in September and October through November when an idea of possible winter conditions emerges from observed conditions in summer. Low risk preparatory activities such as information gathering and analysis and stakeholder coordination should be undertaken through in autumn, when summer conditions have been poor, to ensure readiness for early action should a serious forecast be issued.
- 5 Animal feed is a relevant and timely intervention in January. The survey showed that the majority of livestock deaths occurred in February and March, and that herders who received feed were more likely to survive winter with no animal losses. Distribution before February is key to ensure optimal impact of animal feed distribution.
- 6 Cash based interventions would be useful earlier in October to November, when herders are purchasing the items needed to prepare for winter. Cash transfers in January and February can coincide with lunar new year celebration so conditional cash transfer is recommended if taking place in these months.
- 7 The survey recommends that interventions support non-cash assets such as knowledge, skills and physical capacity of herders. For example in animal husbandry and preparing supplies for winter. Special attention should be paid to herders with disabilities who may lack the physical strength needed for managing their households and herds. recommended if taking place in these months.
- 8 Herders are highly reliant on their knowledge, skills, physical capability in addition to financial capabilities. Programming with herders can take this into account if considering other interventions. Early action should only be used in extreme scenarios, can support herders' capacity with less acute programming to support their overall resilience to dzud.
- 9 Level of understanding and significance of anticipation based early action is still weak among some government agencies at national and local level, thus, further efforts is needed to advocate for early warning and early actions.

ANNEXE 1

Data collection tools used during this research can be found here:

<https://startprogrammes.box.com/s/orncgmiibg7orouw2ov7ntas34vnp43q>

ABOUT START NETWORK

Start Network is made up of more than 40 aid agencies across five continents, ranging from large international organisations to national NGOs. Together, our aim is to transform humanitarian action through innovation, fast funding, early action, and localisation.

We're tackling what we believe are the biggest systemic problems that the sector faces - problems including slow and reactive funding, centralised decision-making, and an aversion to change, means that people affected by crises around the world, do not receive the best help fast enough, and needless suffering results.

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