

## Management of *dzud* risk in Mongolia: Mutual aid and institutional interventions

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### ABSTRACT

Heavy livestock losses from severe winter conditions (*dzud*) in Mongolia in recent years have prompted a variety of interventions by government and development agencies, aiming to reduce herders' vulnerability to severe weather and other climate factors. Unfortunately, many of these interventions have not systematically diminished risk to herders. In this paper we identify several strategies deployed by herders for managing *dzud* risks and impacts through informal mutual aid networks. We contrast these strategies to interventions taken by international donor agencies operating in Mongolia, which have largely focused on the household as an independent socio-economic unit. We conclude that risk mitigation can be improved through recognition of informal mutual aid networks, and through support to mutual aid institutions.

Keywords: Pastoralism, Mongolia, *dzud*, mutual aid

### INTRODUCTION

Heavy livestock losses from severe winter conditions (*dzud*) in Mongolia in recent years have prompted a variety of interventions by government and development agencies, aiming to reduce herders' vulnerability to severe weather and other climate factors. Unfortunately, many of these interventions have not significantly diminished risk to herders. International assistance provided to *dzud*-affected herders in 2010 was poorly coordinated and late, reflecting last-minute interventions rather than a systematic preparedness strategy (Viguiet et al., 2010). In practice, we found that herders rely heavily on informal mutual aid networks to manage *dzud* risks and impacts. In this paper we contrast herders' informal mutual aid strategies to the household-focused approach widely employed by aid agencies operating in Mongolia.

Most existing research on *dzud* vulnerability focuses on governance and institutional coordination to a greater extent than informal mutual assistance (Fernandez-Gimenez et al., 2014; Upton, 2012; Sternberg, 2010). While adaptive benefits have been associated with community-based groups organized on mutual aid principles (Fernandez-Gimenez et al., 2014; Baival and Fernandez-Gimenez, 2012; Upton, 2012), the absence or weakness of such formal institutions should not be taken as indication that mutual aid among

herders is necessarily poor. Indeed, in many successful adaptive practices we identified mutualistic relations involving non-herders, which are not easily accommodated by formal herder groupings. Previous findings that household or community-level risk management may be hindered by external factors such as cross-boundary movement suggest the need for strengthened governance or community institutions (Fernandez-Gimenez et al., 2012), but also reveal the limitations of measures that rely on households or communities as bounded units. Whereas *dzud* vulnerability and impacts have generally been defined in terms of household-level livestock loss, a household's absolute losses may be less meaningful as an indicator of resilience than the family's ability to rely on its extended social networks to overcome crisis. Given that herder relatives living nearby may be equally affected by *dzud*, and thus unable to provide substantial assistance (Siurua and Swift, 2002), we emphasize the importance of mutual aid operating through multi-sited networks that involve both herders and non-herders.

## METHODS

We developed a typology of herders' risk-mitigation strategies based primarily on data from our participant observation field research conducted in three *soums* in Selenge and Dornogovi *aimags*. This research was performed by Eric Thrift over twelve months in 2011–2012, with follow-up interviews in 2013 and 2014. Approximately 30 herder households and family groups were selected through cluster sampling methods, with the resulting sample reflecting significant variation according to factors of mobility, distance from the *soum* or *aimag* centre, herd size and composition, and income sources. Collaborating herders participated in audiovisual field recordings documenting their everyday and seasonal activities, during or following which they were invited to discuss the economic significance and social organization of the documented activities. Observed or reported tactics for adapting to social-ecological change and uncertainty were then grouped by type, and analyzed to determine the extent to which these tactics were facilitated by mutual aid involving other herders or non-herders.

We contrasted herders' informal adaptive tactics to the more formal risk-mitigation mechanisms promoted in government policy and implemented through several international development projects. As a primary contributor to the UNDP study of humanitarian response to the 2010 *dzud* (Viguier et al., 2010), Byambabaatar Ichinkhorloo conducted field surveys in *dzud*-affected areas, holding focus groups and individual interviews with herders and local officials to identify their responses to *dzud* and the effectiveness of institutional measures. Byambabaatar additionally communicated with representatives of government and international development agencies who played a role in the *dzud* response, to document the nature and extent of each organization's actions. In revisiting this earlier study, we held anonymous discussions with former development practitioner colleagues regarding the shortcomings of institutional responses and the herder dissatisfaction captured in interviews from 2010, identifying areas of compatibility or conflict with the observed informal tactics practiced by herders.

## RESULTS

For the purposes of our study, we considered a "*dzud*" to involve conditions brought about by a sequence of summertime drought, preventing livestock from gaining significant body weight from grazing, followed by extreme cold and/or deep snowfall in winter. Although no *dzud* event occurred during the participant observation component of our field research (2011–2012), we observed herders' strategies taken in response to the 2010 *dzud* in Selenge, as well as mitigation strategies taken by herders in Dornogovi due

to dry conditions in the summer of 2012, considered a potential precursor to *dzud* in the following winter.

The key risk-mitigation strategies we documented included (1) high mobility (frequent or distant *otor* moves) during times of crisis; (2) maximizing herd sizes in good years so as to build a buffer against loss during *dzud*, with acceptance of periodic loss of livestock as a “natural” feedback mechanism; (3) pursuit of diversified subsistence strategies, including non-pastoral sources of income; (4) reliance on reciprocity obligations in obtaining material assistance from relatives or others at times of crisis; and (5) targeted winter preparation in years when a harsh winter was expected. The adaptive responses we outline are consistent with those documented by other authors (e.g., Middleton et al. 2015). Whereas individual households with above-average wealth and herd sizes were better positioned to engage on their own in vulnerability-reducing practices such as *otor* (Murphy, 2011), we found that for a majority of herders, at least some strategies were implemented with assistance from people beyond the immediate household (Table 1). Central to the success of these mechanisms was a fluidity of the pastoral system. Households or individual herders were able to shift from town to country and back, with more or fewer people stationed with livestock depending on current needs and herd sizes. Additionally, herders relied on collaborative relations with non-herders in obtaining supplementary income, which could offset economic losses due to *dzud*.

These informal strategies stand in contrast to the institutional interventions discussed by development planners following the 2009–2010 *dzud*. In summer 2010 we conducted a review of *dzud* impacts and the coordination of disaster response among national institutions and international donor organizations, commissioned as part of the “Strengthening Early Recovery Planning” component of the UNDP Early Recovery Programme (Viguier et al., 2010). Although the draft version of this report identified significant operational failings in international donor agencies’ response to the *dzud*, the final version focused on inadequate winter preparation among herders and local government. We ultimately concluded that while policies were in place for effective management of *dzud* impacts, the severe lack of institutional coordination and leadership impeded the effectiveness of both preparedness and emergency response interventions (see also Fernandez-Gimenez et al., 2012; Sternberg, 2010).

Unsurprisingly given this lack of institutional support, herders have largely relied on informal mutual aid mechanisms to address *dzud* risk. Some of the strategies listed above were acknowledged by development planners – ACF (2010), for example, acknowledges the existence of “solidarity mechanisms” whereby herders who had lost many animals in the *dzud* would stay with relatives who had been less severely affected. By and large, however, the donor community has underrepresented or ignored the role of mutual aid networks extending beyond the household. In effect, international organizations have framed the issue of *dzud* as one of “emergency preparedness”, focusing on household-level subsistence rather than resilience at the scale of social networks. Humanitarian interventions in 2010 were thus represented as assistance for *households* who had become destitute as a result of the *dzud*. In the language of one ADB press release, for example, affected households were described as having “exhausted their wood and cooking fuel”, having lost their “main source of livelihood”, and being “unable to access medical care and other social support services” (ADB, 2010).

This household focus is also apparent in the FAO emergency response, which involved providing emergency supplies of livestock fodder, milk powder, and veterinary packages to 2614 households in seven *aimags* in the spring of 2010. Recipients were warned in an accompanying pamphlet “not to try and share [the supplies] with relatives and friends” (Brown, 2010, 21, 41). Although this advice was clearly grounded in a calculated assumption that the supplies would only be adequate to support a limited number of weak animals over the remainder of the winter, it can also be seen as undermining mutual aid amongst herder households, by limiting the selection of “salvageable” livestock to the animals belonging to the targeted household itself.

**Table 1.** Examples of observed mutual aid involving herders, by risk mitigation strategy

No.	Strategy	Examples of assistance from outside the household
1	Otor moves	<ul style="list-style-type: none"> <li>• Non-herder relatives make a truck or small yurt (<i>otryn ger</i>) available for a move</li> <li>• Neighbours or relatives help watch children and small livestock during a long-distance move</li> <li>• Several households move together to the same distant <i>otor</i> area; those who move first help newcomers get established</li> </ul>
2	Fluctuating herd size: Maximizing growth in good years	<ul style="list-style-type: none"> <li>• People who do not own livestock are hired to manage livestock for herders with many animals, but look for work in town after a <i>dzud</i></li> <li>• Herders who have lost animals in a <i>dzud</i> place their remaining livestock in care of parents or relatives, and move to town until the herd has been built up again</li> </ul>
3	Diversified subsistence strategy including non-pastoral income	<ul style="list-style-type: none"> <li>• Herders join non-pastoral relatives in small-scale, seasonal natural resource extraction (strawberries, <i>Agriophyllum squarrosum</i>, timber, gold)</li> <li>• Herder households provide services to tourists (camel rides, overnight stays) through a travel company</li> <li>• One or more members of a herder household is employed as a public servant in the <i>soum</i> centre or as a worker in the nearby mine</li> <li>• The herder household obtains supplementary income from guarding a natural resource or property (mobile telephone antenna, <i>bagh</i> centre buildings, etc.)</li> </ul>
4	Reliance on material assistance from relatives	<ul style="list-style-type: none"> <li>• Households that have lost animals during a <i>dzud</i> obtain money from urban relatives, or livestock from other herders who were less seriously affected</li> </ul>
5	Targeted winter preparation	<ul style="list-style-type: none"> <li>• Men from different households in Selenge collaborate in making hay, unloading it in turns at each family's winter camp</li> <li>• Herders who own tractors produce extra quantities of hay, which they sell or redistribute to cattle owners who live in town</li> </ul>

The World Bank initiated Indexed Livestock Insurance Program similarly aims to shift responsibility for maintaining emergency reserves from the state to the household, bypassing kin networks altogether. Although many herders have seen the value of household-level livestock insurance, they remain a minority: only 10 percent of herders subscribed to the indexed livestock insurance policy in 2014, a drop from 15 percent in 2013 (Annor-Frempong, 2014). Many of the herders with whom we worked appeared to be uneasy with the individualistic logic of household-based insurance, which would allow less-affected herders to benefit more than others – and indeed at the expense of less fortunate herders in the same area.

## DISCUSSION

The most significant finding of this study is that whereas development agencies defined risk at the household level, none of the herders involved in our research consistently managed their livestock or other resources as independent households, but instead did so through larger networks of relatives. Although day-to-day herding operations were frequently carried out at the household level, a majority of families shared livestock or used livestock to support non-pastoral kin; many also participated in non-pastoral subsistence activities. By managing resources at a scale broader than the household, herders maintained informal mutual aid networks that could be drawn upon at times of need. Whereas from the perspective of the individual household the loss of livestock was often a major shock, such a shock could be absorbed by a broader family network, where that network was sufficiently resilient. We observed that resilience to shock in these networks pragmatically correlated to the presence of sufficiently diverse social and economic relations, extending into distant sites and into urban areas.

## IMPLICATIONS

Our research indicates that efforts to develop more effective management of *dzud*-related risk in Mongolia will need to address the allocation of resources and informal aid through suprahousehold networks, which often – and ideally, from a risk mitigation perspective – extend into non-pastoral spheres.

We suggest two follow-up areas. First, it will be desirable to develop a method for assessing herders' economic vulnerability that looks beyond the household, to aid in guiding more targeted interventions. Second, we identify the need for institutional interventions that strengthen mutual aid amongst herders and non-herders above the level of the household. Herder groups, herder cooperatives, and pasture user groups have been established by a variety of projects in order to promote collective action amongst herders who share common rangeland resources, but from a risk mitigation perspective it is necessary to maintain *diverse* mutual aid groups or networks that include non-herders and non-livestock capital. Our research indicates that informal mutual aid mechanisms already exist in the form of kin networks, but these networks cannot necessarily be expected to help herders with limited social capital. The primary recommendation from our research, therefore, is that further work is needed toward establishing and strengthening mutual aid institutions that link herders and non-herders. These institutions could take the form of cooperatives, but – unlike the herder cooperatives currently being established in Mongolia – would require a broader role than simply marketing commodities. The specific roles of mutual aid institutions in assisting the most vulnerable, small-scale herders is a topic necessitating future research attention.

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## REFERENCES

- Action Contre la Faim (ACF). (2010). *Dzüüd Affected Herders in Bayan Ulgii and Uvs Provinces, Mongolia: ACF Food Security Follow-up Assessment*.
- Annor-Frempong C. (2014). *Mongolia – MN-Index-Based Livestock Insurance: P088816 – Implementation Status Results Report: Sequence 12*. World Bank Group, Washington.
- Asian Development Bank (ADB). (2010). *Mongolia Gets ADB Support for Herder Families Battling Natural Disaster*. Press Release, Manila.
- Baival B, Fernandez-Gimenez ME. (2012). Meaningful learning for resilience-building among Mongolian pastoralists. *Nomadic Peoples*, 16, 53-77.
- Brown N. (2010). *Final Report: OSRO/MON/001/AUS, OSRO/MON/002/CHA, TCP/MON/3301*. FAO, Ulaanbaatar.
- Fernandez-Gimenez ME, Batkhishig B, Batbuyan B. (2012). Cross-boundary and cross-level dynamics increase vulnerability to severe winter storms (*dzud*) in Mongolia. *Global Environmental Change*, 22, 836-851.
- Fernandez-Gimenez ME, Batkhishig B, Batbuyan B, Ulambayar T. (2014). Lessons from the *dzud*: Community-based rangeland management increases adaptive capacity of Mongolian herders to winter disasters. *World Development*, 68, 48-65.
- Middleton N, Rueff H, Sternberg T, Batbuyan B, Thomas D. (2015). Explaining spatial variations in climate hazard impacts in western Mongolia. *Landscape Ecology*, 30(1), 91-107.
- Murphy DJ. 2011. *Going on otor: Disaster, mobility, and the political ecology of vulnerability in Uguumur, Mongolia*. PhD dissertation, University of Kentucky.
- Siurua H, Swift J. (2002). Drought and Zud but no famine (yet) in the Mongolian herding economy. *IDS Bulletin-Institute of Development Studies*, 33, 88-97.
- Sternberg T. (2010). Unravelling Mongolia's extreme winter disaster of 2010. *Nomadic Peoples*, 14, 72-86.
- Upton C. (2012). Adaptive capacity and institutional evolution in contemporary pastoral societies. *Applied Geography*, 33, 135-141.
- Viguier L, Ichinkhorloo B, Tsend-Ayush T. (2010). *Dzud National Report 2009–2010: Report of the Study, Project 00074253*. UNDP / NEMA.