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Research paper

Governing Dzud: Community Capacity and Migration Outcomes in Mongolia

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A B S T R A C T

Mongolia's pastoral economy faces recurring threats from dzud, extreme winter disasters combining severe cold, drought, and heavy snowfall, which trigger mass livestock mortality and drive large-scale rural-to-urban migration. While dzud has frequently been treated as an inevitable natural shock, this study argues that disaster outcomes are fundamentally shaped by the quality of disaster risk governance, in this case, local governance rather than climatic severity alone. Drawing on a qualitative comparative case study of Jinst soum, Bayankhongor province, across two major dzud events (1999–2002 and 2009–2010), the study examines how community-based governance capacity mediates disaster impacts and migration decisions. Primary data from semi-structured interviews with local government officials, program managers, and herders, conducted in July 2025, are triangulated with existing literature on dzud governance and pastoral livelihoods. The findings reveal that the 1999–2002 dzud produced severe livestock losses and widespread outmigration largely due to a governance vacuum following post-socialist decentralization, while the 2009–2010 dzud resulted in substantially reduced losses and migration as a result of governance capacity built through a UNDP-supported grassland management program. However, the study also documents the fragility of externally driven governance interventions, as community-based arrangements partially deteriorated following program withdrawal. These findings underscore the need for governance strategies that prioritize long-term institutional sustainability, meaningful authority transfer to local actors, and the complementary roles of community resilience and national disaster safety nets.

Keywords: dzud, disaster risk governance, climate-induced migration, local governance, governance vacuum, Pastoral livelihood

1. Introduction

1.1 Background: Mongolia's Pastoral Economy and Vulnerability to Dzud

Pastoralism has long been central to Mongolia's economy and social structure. Despite the transition from socialism to a market economy, livestock herding remains a dominant livelihood, with approximately 40% of the population engaged in pastoral activities and more than 70 million animals grazing across a substantial portion of national territory

(Michler et al., 2024; Tseren et al., 2023). However, this system is inherently vulnerable to climatic extremes. Among these, dzud—an extreme winter disaster caused by severe weather conditions and drought—poses a recurring and severe and recurring threat to pastoral livelihoods (Ahearn, 2018). Dzud occurs when livestock are unable to access pasture due to extreme cold, heavy snowfall, or degraded grazing conditions, often resulting in mass livestock mortality (Ahearn, 2018; Fernandez-Gimenez et al., 2012). The frequency and severity of dzud events have increased in recent years due to climate change (Roekert &

Kraehnert, 2022).

The impacts of dzud extend beyond livestock loss. Recurrent events have driven large-scale rural-to-urban migration, particularly toward Ulaanbaatar, which now accounts for approximately 45% of the national population (National Statistical Office of Mongolia, 2025; So et al., 2018). This influx has placed significant strain on urban infrastructure, contributing to the expansion of informal settlements, environmental degradation, and worsening public health conditions (Jun, 2021). As a result, dzud functions not only as an environmental shock but also as a driver of broader socio-economic transformation, raising concerns about sustainable urbanization and inequality (Roekert & Kraehnert, 2022).

Dzud has frequently been treated as an inevitable shock, with policy responses focused primarily on post-disaster relief rather than preventive governance (Fernandez-Gimenez et al., 2012; Baival & Baljinnyam, 2013). However, disasters such as dzud cannot be understood solely as natural phenomena but must be analyzed in relation to underlying social and institutional vulnerabilities. From this perspective, disaster outcomes depend on the capacity of governance systems to anticipate, absorb, and respond to shocks (Ahrens and Rudolph, 2006; Kelman, 2020; Manyena, 2006). This insight is particularly relevant in post-socialist contexts, where rapid institutional transformation has often produced a governance vacuum (Sternberg, 2010).

Mongolia illustrates this dynamic clearly. Under socialism, pastoral production and disaster response were centrally coordinated through the *negdel* system, which regulated herd management, pasture use, and winter preparedness (Fernandez-Gimenez et al., 2012; Hahn, 2018). The transition to a market economy in the 1990s dismantled these mechanisms through decentralization reforms, shifting responsibility for risk management to local governments and individual herders (Ahearn, 2018; Chadraabal et al., 2022). However, local institutions lacked the administrative and financial capacity to assume these roles effectively, resulting in a governance vacuum and fragmented risk management (Ahearn, 2018).

The consequences were evident during the 1999–2002 dzud, when large-scale livestock loss and widespread outmigration exposed the limitations of both state and individual responses (Baival & Baljinnyam, 2013; Fernandez-Gimenez et al., 2012). However, later experiences suggest that these

outcomes are not inevitable. The 2009–2010 dzud demonstrated that strengthened local governance—particularly through community-based organization—can significantly reduce vulnerability and alter disaster outcomes (Ahearn, 2018; Fernandez-Gimenez et al., 2012). Despite increasing recognition of local governance's role in shaping dzud outcomes, existing research has given relatively limited attention to the mechanisms through which community-based governance capacity is constructed and how it mediates migration decisions (Roekert & Kraehnert, 2022; Mayer, 2016). This study addresses that gap:

How does community-based governance capacity shape disaster risk governance effectiveness and migration outcomes during dzud events?

To address this question, the study adopts a qualitative comparative case study design, examining Jinst soum in Bayankhongor province across two major dzud events — 1999–2002 and 2009–2010 — under contrasting governance conditions (Ahearn, 2018; Fernandez-Gimenez et al., 2012). Primary data were collected through semi-structured interviews with five key stakeholders, including local government officials, program managers, and herders, conducted in July 2025. These interviews provided empirical insight into governance processes and their longer-term sustainability that are not captured in existing literature. Secondary data draw on existing studies of dzud governance and pastoral livelihoods in Mongolia. By triangulating these sources, the study analyzes how governance capacity shaped disaster outcomes across the two periods and evaluates the durability of community-based governance arrangements following the withdrawal of external support. The paper will first develop the theoretical framework of disaster risk governance and its relationship to climate-induced migration. Next, it will examine the evolution of disaster risk governance in Jinst soum across the two dzud periods and synthesize a comparison of two dzud events. Section IV will discuss the limitations of externally driven governance interventions, and Section V draws conclusions and policy implications.

2. Theoretical Background and Literature Review

2.1. Disaster Risk Governance

Disasters are not merely natural hazards but situations in which damage exceeds the coping capacity of a community due to imbalances between vulnerability and institutional capacity. Their essence lies not in natural events themselves but in the structural limitations of governance systems (Kelman, 2020). Ahrens and Rudolph (2006) and Kelman (2020) empirically demonstrate how natural shocks are transformed into disasters through failures in human decision-making and institutional preparedness. These studies collectively support the argument that disaster outcomes are fundamentally shaped by the quality and capacity of governance arrangements rather than by the severity of natural hazards alone.

Building on this foundation, Jones et al. (2015) expand the scope of disaster risk governance beyond state-centric approaches. As governance systems have evolved, responsibilities for disaster preparedness and response have become distributed among multiple actors — including central and local governments, community organizations, and civil society — forming multi-level governance structures. Kato and Shaw (2024) support this through a case study of Nepal, demonstrating that institutionalized cooperation across governance levels and enhanced community participation contribute meaningfully to reducing disaster vulnerability. This body of research reflects a broader shift from top-down, reactive governance toward multi-actor, proactive arrangements that incorporate local knowledge and community-based mechanisms.

Effective disaster risk governance can be constituted, according to Ahrens and Rudolph (2006), through three core functional dimensions: the capacity to anticipate shocks through preparedness, to absorb their immediate impacts through coordinated response, and to adapt institutional arrangements in their aftermath. Governance effectiveness is therefore not reducible to a single moment of crisis response but operates across all three phases. Critically, this framework draws attention to the institutional conditions — administrative capacity, resource availability, inter-organizational coordination — that determine whether governance systems can perform these functions under stress.

Disaster risk governance effectiveness therefore depends on the interaction between these two institutional layers. Adger (2002) argues that the capacity of societies to maintain function and adapt to

external shocks operates through institutions that include not only formal structures such as laws and administrative bodies, but also informal elements such as norms, traditions, trust, and community networks. For instance, if formal institutions lack capacity, informal community-based mechanisms — reciprocal labor arrangements, shared resource norms, collective early warning practices — may partially compensate, though their effectiveness depends on the degree to which they are recognized and supported within broader governance arrangements.

In post-socialist contexts, where centralized coordination mechanisms are dismantled without adequate local capacity building, a governance vacuum emerges in which formal institutions exist nominally but lack the financial, administrative, and organizational resources to fulfill their mandated roles (Ahearn, 2018). Under such conditions, the burden of disaster risk management falls disproportionately on individual households and community networks, whose capacity is itself unevenly distributed. Governance effectiveness in this context is thus not simply a function of institutional design but of the historical and political processes through which institutional capacity has been built, eroded, or transferred across governance levels.

2.2. Dzud and Climate-Induced Migration

The effectiveness of disaster risk governance is frequently reflected in post-disaster migration patterns. Since migration decisions following natural shocks are mediated by socio-economic capacities and governance arrangements, migration cannot be understood merely as an environmental outcome but as a governance outcome — shaped by the capacity of institutions to absorb shocks and protect livelihoods (Ivanova et al., 2024; Kaczan & Orgill-Meyer, 2020).

Dzud illustrates this dynamic clearly. As a slow-onset disaster combining drought, extreme cold, and heavy snowfall, dzud progressively weakens herder livelihoods before triggering mass livestock loss that compels outmigration (Mayer, 2016; Sumiya, 2015). However, where disaster risk governance is effective, through timely preparedness measures and coordinated response, livestock losses can be mitigated, and the pressure to migrate reduced. Conversely, where governance systems lack the capacity to absorb dzud impacts, migration becomes

the default household-level adaptation strategy.

Despite these linkages, existing research has given relatively limited attention to how local governance shapes migration outcomes (Roeckert & Kraehnert, 2022; Mayer, 2016). This study addresses that gap directly, examining how disaster risk governance capacity — particularly the interaction between formal institutions and community-based mechanisms — mediates the relationship between dzud shocks and migration decisions.

3. Evolution of Disaster Risk Governance in Mongolia

This study examines Jinst soum in Bayankhongor aimag as a comparative case, analyzing two major dzud events under contrasting governance conditions — 1999–2002 and 2009–2010. Jinst soum offers a particularly instructive case because the same locality experienced dramatically different disaster outcomes within a single decade, allowing governance capacity rather than geographic or climatic variation to be isolated as the explanatory variable. Jinst soum is located approximately 100 km south of the center of Bayankhongor aimag, of which over 97% is designated as pastureland. It is one of the top five regions in Mongolia in terms of livestock numbers and herder population (Ahearn, 2018).

Since the transition to a market economy in the 1990s, the region's economic structure and disaster risk governance changed significantly. Decentralization dismantled the centrally managed *negdel* system, forcing herders to respond individually to disasters such as dzud. At the same time, the removal of centralized livestock regulation and pasture management encouraged short-term profit-seeking behavior, accelerating environmental degradation. As a result, Jinst soum faced dual vulnerabilities: weak governance and ecological fragility.

3.1. Dzud in 1999–2002: Governance Vacuum

The severe impacts of the 1999–2002 dzud in Jinst were not solely due to natural causes but were largely the result of a governance vacuum. Following the collapse of the *negdel* system, no effective disaster response system was established. The governance vacuum led to the collapse of the livelihood of herders, losing 75% of total livestock (Fernandez-Gimenez et

al., 2012). A herder (E) described the situation:

“I suffered great losses during the dzud. I had 100 animals, but only 10 remained afterward. I was able to continue herding with support from my family, but many young herders or those without support left.”

The absence of any organized preparedness or response capacity meant that livestock loss translated directly and irreversibly into livelihood collapse. With no governance mechanism to absorb the shock — no collective fodder reserves, no coordinated support networks, no alternative income sources — migration became the only available household-level response. The collapse of livestock assets forced many herders to abandon pastoralism and migrate to urban areas (Baival & Baljinnyam, 2013). The population declined from 2,537 in 1995 to 2,044 by 2005 (Fernandez-Gimenez et al., 2012). A relief official (B) attributed large-scale migration in 2001–2002 to the dzud:

“The migration was due to the dzud. People lost their livelihoods—some lost all 500 animals.”

3.2. Dzud of 2009–2010: Transformation of Local Disaster Risk Governance

The contrast in outcomes between the two dzud events cannot be attributed to differences in natural conditions alone. Rather, it reflects a qualitative transformation in local disaster risk governance capacity — specifically, the degree to which formal institutions and community-based mechanisms became capable of functioning as proactive, coordinated actors across the anticipate-absorb-adapt dimensions of disaster risk governance (Ahrens & Rudolph, 2006). The “Sustainable Grassland Management Program” implemented by UNDP from 2003 to 2008 functioned as an external vehicle through which this transformation was initiated. By filling in the governance vacuum left by post-socialist decentralization, the program rebuilt the organizational, informational, and relational foundations that effective local governance requires. Its significance lies not in what UNDP delivered, but in what local institutions and communities became capable of doing as a result. This capacity-building process operated across three interconnected dimensions: constructing community-based organizational capacity, shifting local government

from reactive to proactive disaster management, and establishing multi-level coordination networks.

Constructing Community-Based Organizational Capacity

The program addressed the governance vacuum by constructing the organized community-level institutions capable of collective action. Six herder groups were established, each comprising approximately 10 to 15 households, and were deliberately designed as self-managed units rather than program-dependent structures (personal interview, July 25, 2025). To build genuine organizational capacity rather than nominal membership, the program invested in knowledge transfer through study visits to Inner Mongolia, enabling group members to observe and adapt grassland management practices to local conditions. This experiential learning process was significant: rather than receiving externally designed rules, the program manager and 50 group members collaboratively designed a pasture management system suited to Jinst soum's specific conditions (Program Manager C, personal communication, July 25, 2025). The groups subsequently established rotational grazing rules, installed fences around designated areas, repaired six wells for household and pasture use, and developed collective hay storage strategies for winter preparedness (Program Manager C, personal communication, July 25, 2025; Fernandez-Gimenez et al., 2012).

Furthermore, the community-level governance was strengthened by knowledge networks. Group members systematically shared disaster experience and technical knowledge with younger and fellow herders through both everyday interactions and formal bagh meetings, creating horizontal information flows that had not previously existed (Herder E, personal communication, July 24, 2025). As program manager C observed:

“Since the Sustainable Pasture Management Project began in 2003, people’s perceptions have changed. The project taught herders, especially younger ones, the importance of cooperation.”

This shift from atomized individual responses to organized collective action represented a foundational change in community-level governance capacity — rebuilding, in new form, the coordinating

function that the negdel system had previously performed through top-down administration. As Adger (2002) argues, informal institutions such as trust, norms, and community networks are constitutive elements of governance capacity, not merely supplements to formal structures. The herder groups, in this sense, were not simply program outputs but nascent governance institutions.

Shifting Local Government from Reactive to Proactive Disaster Management

Secondly, the transformation of local government from passive recipient of central directives into a proactive manager of disaster risk strengthened the disaster risk governance at the local level. This shift is analytically significant because it corresponds directly to the anticipatory capacity dimension of effective disaster risk governance — the ability to act before a shock rather than only during or after it (Ahrens & Rudolph, 2006).

Prior to the program, the local government lacked both the technical knowledge and institutional orientation to engage in systematic dzud preparedness. The program addressed this through targeted capacity-building across three interconnected preparedness practices: pastureland preservation, herd density management, and livelihood diversification (Fernandez-Gimenez et al., 2012; Program Manager C, personal communication, July 25, 2025)).

On pastureland preservation, the program facilitated coordination between local government, herder groups, and the central government to secure emergency pasture reserves (Fernandez-Gimenez et al., 2012; Program Manager C, personal communication, July 25, 2025)). This multi-actor negotiation process was itself a governance capacity-building exercise. The local government learned to navigate vertical institutional relationships to secure resources for community preparedness. With secured emergency pastureland, herders implemented structured pasture use plans to store fodder and hay reserves (Program Manager C, personal communication, July 25, 2025)). By 2010, this institutional capacity was sufficiently embedded that the local government independently issued a summer dzud preparedness directive, mobilizing herders, NGOs, and private actors to contribute fodder reserves and securing approximately 120 tons of hay across the soum — demonstrating that proactive resource mobilization had become an

institutionalized governance practice rather than a program-dependent activity (Fernandez-Gimenez et al., 2012).

On herd density management, the program introduced a conceptual shift with significant governance implications. Through training led by grassland management experts, local officials and herders came to understand that maximizing livestock numbers as an individual survival strategy actively increases disaster vulnerability (Program Manager C, personal communication, July 25, 2025)). This paradigm shift enabled the local government to adopt and enforce herd reduction policies, including encouraging selling or killing animals before winter and fixed autumn purchasing prices for weak animals, that would previously have lacked both technical justification and community legitimacy (Personal interview, Government Official B, July 25, 2025). Herders internalized this logic and voluntarily reduced herd sizes before winter, using proceeds from livestock sales to purchase additional fodder:

“We separate, slaughter, and reduce numbers. We also sell. Herders observe nature closely—if they can tell what kind of year it will be, they slaughter animals, sometimes over 100, even 300–400. Then we use the money from selling livestock to buy fodder.” (Herder D, personal communication, July 24, 2025)

This voluntary behavior represents the embedding of governance norms at the household level — a form of informal institutional capacity that significantly reduces collective vulnerability without requiring continuous external enforcement.

On livelihood diversification, the program extended its governance capacity-building beyond pasture management to address household-level economic vulnerability. Training in dairy processing, handicraft production, and traditional clothing manufacture provided herder households — particularly women — with alternative income sources during dzud periods, reducing their dependence on livestock assets alone (Program Manager C, personal communication, July 25, 2025). Program manager C framed this explicitly as a form of intellectual investment:

“Even if they do not apply it immediately, they have internalized knowledge about generating income from livestock products. That knowledge has become a

permanent part of them.” (Program Manager C, personal communication, July 25, 2025)

Collectively, these three practices demonstrate that local government and herder groups had developed the anticipatory governance capacity to manage risk systematically across the full preparedness cycle — from summer pasture management through winter fodder reserves — rather than responding only when disaster struck.

Establishing Multi-Level Coordination Networks

The third dimension addressed the coordination failure that had amplified the 1999–2002 dzud impacts — specifically, the fragmentation of information and resources across governance levels. Effective disaster risk governance requires not only capable local actors but functional vertical and horizontal coordination mechanisms that enable timely information flow, resource mobilization, and policy alignment (Ahrens & Rudolph, 2006; Jones et al., 2015).

The program facilitated the construction of these coordination networks across multiple axes. Vertically, more systematic communication channels were established between central and local governments, enabling the local government to coordinate hay procurement at subsidized prices and receive technical support from specialized institutions including the National University of Agriculture and the Ministry of Food and Agriculture (Fernandez-Gimenez et al., 2012; Government Official B, personal communication, July 25, 2025). Field-based monitoring systems were established, allowing local governments to assess herder conditions rapidly and deploy fodder and guidance in a timely manner. Horizontally, coordination with neighboring soums enabled organized management of livestock and herder movements during dzud, systematizing otor pasture access and preventing the concentration of livestock on limited pasture areas — a critical measure against what is known as “hoofed dzud,” in which overgrazing by concentrated herds rapidly depletes remaining forage (UNDRR, n.d.; Fernandez-Gimenez et al., 2012).

Furthermore, the program broadened the governance network beyond state actors, integrating international NGOs such as Veterinarians Without Borders and World Vision into the local disaster

response system. Veterinary support, livestock shelter upgrades, and insulation projects were implemented through these partnerships, significantly improving livestock survival rates. Crucially, local communities were incorporated into resource distribution processes to ensure accountability and reach vulnerable households effectively (Fernandez-Gimenez et al., 2012; Program Manager C, personal communication, July 25, 2025). This multi-actor, multi-level governance architecture directly addressed the coordination vacuum that had made the 1999–2002 dzud so devastating.

3.3. Synthesis: From Governance Vacuum to Governance Capacity

Taken together, these three dimensions illustrate how the program functioned as a governance capacity-building vehicle rather than a conventional aid intervention. Where the 1999–2002 dzud had exposed a governance vacuum — atomized herders, reactive local government, and fragmented coordination — the 2009–2010 response demonstrated the operation of a qualitatively different governance system: organized community institutions capable of collective action, a local government equipped to anticipate and manage risk proactively, and functional coordination networks linking community, local, and central governance levels (Fernandez-Gimenez et al., 2012; Program Manager C, personal communication, July 25, 2025).

The outcomes reflected this transformation. Livestock losses were substantially lower, and the pressure to migrate was correspondingly reduced. Population and household statistics from Jinst soum reveal strikingly different migration trajectories following the two dzud events, reflecting the contrasting governance conditions under which each occurred (Fernandez-Gimenez et al., 2012). The total population peaked at 2,537 in 1995 before declining sharply to 2,044 by 2005 — a loss of approximately 493 residents over a decade that coincided directly with the governance vacuum period and the 1999–2002 dzud. This population decline was accompanied by a reduction in total households from 567 in 2000 to 477 by 2005, suggesting that outmigration was occurring at the household level rather than reflecting demographic change alone. The collapse of livestock assets — with some herders losing up to 75% of their animals — left households with no viable livelihood basis, making migration to urban areas the only available adaptation

strategy (Baival & Baljinnyam, 2013).

The post-2009 period tells a markedly different story. Despite the 2009–2010 dzud being climatically severe, the total population remained relatively stable at 2,023 in 2009, 2,024 in 2010, and recovering slightly to 2,052 by 2011. Household numbers similarly stabilized, rising from 548 in 2009 to 587 in 2010. Herder households, which numbered 410 in 2009, increased to 487 by 2011 — suggesting not only that outmigration was contained but that pastoral livelihoods were sufficiently protected to retain and potentially attract herder households back to the soum. This stabilization reflects the concrete effects of the three governance dimensions: community organizational capacity provided collective coping mechanisms, proactive local government management reduced livestock losses before they reached crisis levels, and multi-level coordination ensured resources reached vulnerable households during the event itself.

These divergent patterns support the central argument of this study: migration following dzud is not an inevitable environmental outcome but a governance outcome. Where governance capacity was absent — as in 1999–2002 — livestock loss translated directly into livelihood collapse and outmigration. Where governance capacity had been constructed through community-based organization, proactive local government management, and multi-level coordination — as in 2009–2010 — the same type of hazard produced substantially different migration outcomes. The population data thus provides empirical grounding for the theoretical claim that effective disaster risk governance mediates the relationship between dzud shocks and migration decisions.

Critically, the contrast in outcomes between herders who had internalized governance norms — collecting fodder, reducing herd sizes, participating in collective preparedness — and those who had not underscores that governance effectiveness operated not only through formal institutional channels but through the embedding of risk management norms within the community itself. The case of Jinst soum during the 2009–2010 dzud thus demonstrates that disaster outcomes are not determined by hazard severity alone but by the governance capacity that communities and institutions have built — or failed to build — in the preceding years.

4. Limitations of the Sustainable Grassland Management Program

4.1. Sustainability after the End of External Support

Even with successful outcomes after the Sustainable Grassland Management Program, the program's training and learning were not fully institutionalized within Jinst soum after its completion, and thus failed to ensure long-term sustainability. According to interviews with the soum governor and a former relief official, cooperative relationships between the program manager and herder groups continued after the program ended, and some pasture management activities were maintained. However, these activities were neither as systematic nor as active as during the program period (Program Manager C, personal communication, July 25, 2025).

"However, the herder groups were eventually dissolved. These groups existed only during the project period. Nevertheless, the project laid the foundation for other forms of groups, such as herder partnerships or environmental protection partnerships" (Program Manager C, personal communication, July 25, 2025).

Although a subsequent external program was launched in Jinst soum, improving cashmere quality projects funded by the French government, the differences in project objectives led to discontinuity rather than reinforcement of pasture management efforts (Program Manager C, personal communication, July 25, 2025). This highlights the challenges of achieving sustainability in externally driven programs and the need for integrated, long-term development strategies.

4.2. Distortion of the Concept of Collective Pasture Management and Privatization Conflicts

Another unintended consequence was the distortion of the program's core concept of collective pasture management. After the program ended, the idea of "managed pasture use," originally introduced as a communal system, was misinterpreted as an opportunity for private ownership.

This led to attempts by individuals to enclose and privatize pastureland, resulting in excessive fencing and fragmentation (Government Official B, personal communication, July 25, 2025).

"Gradually, some households fenced excessively, to the point where vehicles could no

longer pass. Residents invested in fencing on their own. As fencing increased around 2010, the land law was revised in 2015 to reopen pastureland. Since pasture is a public good, individuals have no legal right to privatize it. We forcibly removed the fences" (Government Official B, Personal communication, July 25, 2025).

According to the program manager, some herders justified privatization by linking livestock numbers to land ownership, arguing that larger herds entitled them to larger areas. To address this issue, most fences were removed, except in limited areas. Only in 2023 was restricted private pasture management reintroduced, allowing selected households to use up to two hectares under regulated conditions (Program Manager C, personal communication, July 25, 2025).

"They did not obtain permission from the soum governor. They decided on their own. They thought, 'If the herder project fenced five hectares for ten households, now that we have more livestock and better livelihoods, we can fence even larger areas ourselves.' So they fenced between 100 and 400 hectares" (Program Manager C, personal communication, July 25, 2025)).

This case demonstrates how externally introduced concepts can be reshaped in local contexts, sometimes in ways that undermine the original intent of the program.

5. Limitations of the Study

First, this study focuses on a single case—Jinst soum—and therefore its findings may not be generalizable to all regions of Mongolia. In particular, the Sustainable Grassland Management Program was implemented with external assistance, which represents a specific context. Regions without such support may follow different trajectories in strengthening local governance and resilience. Therefore, the findings should be interpreted within this contextual limitation.

Second, the study relies heavily on specific sources in the literature. To mitigate this limitation, in-depth interviews were conducted with various stakeholders, including program managers, government officials, and herders. These interviews provided insights into post-program developments that are not captured in existing literature. However, the possibility of bias in the information cannot be entirely

excluded.

Third, this study does not fully examine the impact of recent policy changes introduced by the Mongolian government on disaster response capacity. Future research should analyze policies such as the revised land law, dzud response policies, and livestock insurance schemes to better understand how evolving governance frameworks influence resilience and vulnerability. This would complement the temporal limitations of the present study and provide a more comprehensive understanding of governance evolution.

6. Conclusion and Policy Implications

This study demonstrates that strengthening community-level governance significantly improves disaster risk governance, reducing both disaster impacts and migration between the 1999–2002 and 2009–2010 dzud events in Jinst soum was the establishment of a new form of locally driven disaster governance.

These findings highlight that addressing disaster impacts and migration requires not only post-disaster recovery but also the strengthening of preventive, locally grounded governance systems. At the same time, it provides several lessons we can apply in the future. First, international aid programs should go beyond short-term projects and develop clear exit strategies that ensure long-term governance sustainability. During implementation, external actors should transfer meaningful authority and responsibility to local communities and governments to enable self-sustaining systems.

Second, when introducing new concepts, emphasis should be placed on localization through communication and education. As seen in the misinterpretation of “collective management” as privatization, externally introduced ideas can be reshaped in unintended ways. Continuous engagement and investment in education are necessary to ensure proper understanding and internalization.

Finally, local capacity and national safety nets should be understood as complementary. As both prior research and interviews indicate, dzud-induced livelihood loss often leads to migration, creating broader social costs such as urban poverty, infrastructure strain, and environmental degradation. While Jinst reduced vulnerability through strengthened local governance, national-level support remains

insufficient. Strengthening local capacity should not replace state responsibility. Rather, governments must invest more in enhancing local resilience and building robust national disaster governance systems to reduce long-term social costs.

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