



## ADAPTATION FUND

AFB/PPRC.37/Inf.23  
16 March 2026

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Adaptation Fund Board  
Project and Programme Review Committee  
Thirty-seventh Meeting  
Bonn, Germany, 7-8 April 2026

## PROPOSAL FOR MONGOLIA



ADAPTATION FUND

## ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Pre-Concept for a Regional Project

**Countries/Region:** Pakistan and Mongolia

**Project Title:** Climate-proofing livestock value chains in vulnerable communities in Mongolia and Pakistan

**Thematic focal area:** Food security

**Implementing Entity:** United Nations Industrial Development Organization (UNIDO)

**Executing Entities:** UNIDO and the Asian Disaster Preparedness Center (ADPC)

**AF Project ID:** AF00000476

**IE Project ID:**

**Requested Financing from Adaptation Fund (US Dollars):** 20,550,000

**Reviewer and contact person:** Ahmad Ghosn

**Co-reviewer(s):**

**IE Contact Person(s):**

### Technical Summary

The project "Climate-proofing livestock value chains in vulnerable communities in Mongolia and Pakistan" aims to climate-proof livestock value chains in Mongolia and Pakistan and enhance national and regional food security and related climate change adaptation capacities. This will be done through the four components below:

Component 1: Strengthening institutional capacity for enhanced adaptation planning for food security and livelihood resilience (USD 2,300,000).

Component 2: Implementation of adaptation interventions to climate-proof the livestock value chain (USD 7,800,000).

Component 3: Preparedness for climate-related hazards (USD 7,000,000).

Component 4: Knowledge Management (USD 600,000).

Requested financing overview:

Project/Programme Execution Cost: USD 981,818

Total Project/Programme Cost: USD 18,681,818

Implementing Fee: USD 1,868,182

Financing Requested: USD 20,550,000

The proposal includes a request for a project formulation grant of USD 30,000.

	<p>The first technical review raises several issues, such as: further substantiation of the project regional rationale; revising project components and finance table; clarifying some issues related to components description; clarifying few issues related to project cost effectiveness, sustainability, duplication, alignment with related regional/ bilateral plans, etc.; providing details on project implementation/ execution arrangements; among others as indicated in the Clarification Requests (CRs) and Corrective Action Request (CARs) raised in the review.</p> <p>The second technical review finds that a few CRs and CARs remain on calculation of PFG costs and alignment of document.</p> <p><i>Please be advised that the findings of the AFB Secretariat's review of the funding proposal(s) do not reflect, indicate, or prejudge the outcome of the reaccreditation process currently underway. The Implementing Entity (IE) shall acknowledge that the funding proposal will not be approved by the Board if the IE's accreditation has expired, and reaccreditation has not been achieved at the time of the Board's decision. Notwithstanding this potential risk, the IE has elected to proceed with the development of the funding proposal.</i></p>
Date	<b>16 December 2025</b>

Review Criteria	Questions	First Technical Review Comments October 31, 2025	Second Technical Review Comments 16 December 2025
Country Eligibility	1. Are all of the participating countries party to the Kyoto Protocol and/or the Paris Agreement?	<b>Yes.</b>	-
	2. Are all of the participating countries developing countries particularly vulnerable to the adverse effects of climate change?	<p><b>Yes.</b></p> <p>Both countries experience significant warming trends, extreme weather events and climate-induced disasters that have profound impacts on herders, livestock productivity and the broader value chain.</p>	-

Project Eligibility	1. Have the designated government authorities for the Adaptation Fund from each of the participating countries endorsed the project/programme?	<p><b>Yes.</b></p> <p>As per the Endorsement letter of Mongolia's DA dated 09 June 2025, and Pakistan's DA Endorsement letter dated 16 September 2025.</p>	-
	2. Has the pre-concept provided necessary information on the problem the proposed project/programme is aiming to solve, including both the regional and the country perspective?	<p><b>Yes.</b></p> <p>See As Part I, pp. 2-3. <b>However,</b> owing to the facts that Pakistan and Mongolia lie in different Asian regions (Pakistan in South Asia and Mongolia in East Asia), separated by large distances, have different cultures and languages, etc., further justification for the regional approach is needed. It is also to be noted that while sector commonalities could justify the regional approach, interventions to face/ adapt with related "globally" similar climate impacts may differ due to country specifics.</p> <p><b>CAR1:</b> Under Part I "Project/Programme Background and Context" or under Part II, please add a dedicated subheading/ section to substantiate/ rationalize the project regional approach, in terms of advantages/ added value, cost effectiveness and greater impact, compared with single country project modules.</p>	<p><b>CAR1: Cleared.</b> See Part I, pp.3-5 and Part II, pp.7-8. Part I was revised to further clarify the common adaptation challenges in livestock sectors of Mongolia &amp; Pakistan, the similar vulnerabilities faced by herders and SMEs, and the higher impact/ cost effectiveness of the regional approach.</p>

	<p>3. Have the project/programme objectives, components and financing been clearly explained?</p>	<p><b>Yes.</b></p> <p><b>However, further refinement is required.</b></p> <p>See Part I, pp. 3-5. <u>However</u>, the components financing table, pp. 4-5, need to be revised. It is also recommended to consider rephrasing the overall objective statement for more clarity.</p> <p><b>CR1:</b> The overall objective statement is lengthy. Please consider revising to be more concise and to reflect regional aspects. Maintain related discussions provided under “Project/Programme Objectives”, p. 3, including specific objectives. A proposed overall objective is: “to climate-proof livestock value chains in Mongolia and Pakistan and enhance national and regional food security and related climate change adaptation capacities.</p> <p><b>CAR2:</b> Align the components financing table with AF format:</p> <ol style="list-style-type: none"> <li>1. Add numbering in front of listed components and adjust items numbering for the remaining entries accordingly.</li> <li>2. Indicate totals at output, outcome and component levels.</li> <li>3. Delete blank rows/ cells in items numbered 6,7 and 8.</li> </ol>	<p><b>CR1: Cleared.</b> See Part I, p. 5.  <b>CR1 (NEW):</b> <u>On page 1 of the proposal please update the stage of submission and to indicate that this is a re-submission and the last date of submission.</u></p> <p><b>CAR2: Cleared.</b> See Part I, pp. 5-7.</p>
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	<p>4. Has the project/programme been justified in terms of how:</p> <ul style="list-style-type: none"> <li>- it supports concrete adaptation actions?</li> <li>- it builds added value through the regional approach?</li> <li>- it promotes new and innovative solutions to climate change adaptation?</li> <li>- it is cost-effective?</li> <li>- it is consistent with applicable strategies and plans?</li> <li>- it incorporates learning and knowledge management?</li> <li>- it will be developed through a consultative process with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund?</li> <li>- it will take into account sustainability?</li> </ul>	<p><b>Yes.</b> See Part II, pp. 5-7. Concrete actions include: flood-resilient livestock shelters in lowlands, heat-tolerant fodder varieties for arid/ semi-arid zones, mobile insulated barns/ water troughs for cold-prone rangelands; promoting emerging technologies and financial tools through demonstration-based platforms; improving existing EWS (e.g.: digital alert systems, early warning platforms, biomass sensors, disease outbreak triggers, dzud risk maps, etc.); and related capacity building, regional knowledge sharing/ exchange, as discussed under components description, pp. 5-6. <b>However</b>, the below issues warrant further clarification.</p> <p><b>CR2:</b> Consider providing some initial thinking around the analysis of alternative interventions, if any, at appropriate sections of the PCN (e.g., Part I, Background and Context).</p> <p><b>CR3:</b> Please confirm whether the gender considerations are incorporated and guided by input of stakeholders. <u>Be sure to include the gender remit during the PFG phase.</u></p> <p><b>CR4:</b> Please address the following:</p> <ol style="list-style-type: none"> <li>1. Clarify whether the planned activities under components will be identical/ very similar and reflect this in the regional rationale, if it is the case. See CAR1 above.</li> </ol>	<p><b>CR2: Cleared.</b> See Part I (para. 1,5 &amp; 6, pp. 3-4) revisions to clarify selected interventions rationale. Further analysis of alternatives/ cost-effectiveness will be provided at CN stage.</p> <p><b>CR3: Cleared,</b> See Part II, p. 9 “Consultative Process”.</p> <p><b>CR4: Cleared.</b> 1. (see p.7, first para); 2. (see p.4, first para); 3. (see p. 8, 2nd sentence under component 3); 4. (see p.8 “Component 4”); 5&amp;6. (see p.9); 7. (see top of p.10); 8&amp;9 (see p.10).</p>
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		<p>2. The last para on p. 2, states " However, these systems are ..... in grazing areas and livestock management". Please clarify/ specify which systems.</p> <p>3. Under the discussion of component 3 "Preparedness for climate-related hazards", second sentence, p. 6, refers to "Existing systems". Do you mean Early Warning Systems? Please clarify/revise.</p> <p>4. The discussion under component 4, p. 6, "Knowledge Management and Monitoring" states that "<u>Activities will build on recent bilateral agreements/ regional platforms.</u> Please specify these bilateral agreements/ regional platforms.</p> <p>5. Under "Cost-effectiveness", p. 6, it is stated that "The regional approach further enhances value for money by pooling resources and enabling shared delivery models". Clarify this statement. Does it relate to project implementation/execution arrangements, and/or assume that interventions to be implemented are identical?</p> <p>6. Under "Consistency with national policies, strategies and plans", p. 7, please include related regional plans/ bilateral cooperation agreements, if any.</p> <p>7. Under "Sustainability", p. 7, please reflect related regional arrangements, if any.</p>	
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	<p>8. Under "Economic, social and environmental benefits", p. 7, it is stated that "<u>If an environmental and social assessment is required for the project, it will assess all potential risks and propose a risk management plan, in compliance with the Environmental and Social Policy of the Adaptation Fund</u>". <u>Kindly note that Environmental and social assessment and related management plan are required by AF</u>. Please revise the statement.</p> <p>9. Under "Duplication of project with other funding sources", p. 7, please indicate that further related projects will be identified at concept stage.</p> <p><b>CAR3:</b> Please clarify if the project will ultimately contain USPs and if so, please ensure that the revised concept adequately recognizes the use of USP in the project and provides a logical justification for their use. Please refer to the updated guidance document on USPs <a href="https://www.adaptation-fund.org/wp-content/uploads/2021/05/Updated-guidance-on-USPs-.pdf">https://www.adaptation-fund.org/wp-content/uploads/2021/05/Updated-guidance-on-USPs-.pdf</a></p>	<p><b>CAR3: Cleared.</b> Based on IE response, the project will not include USPs. All pilot adaptation measures, target sites and SME participants will be identified and agreed during the concept and full proposal stages.</p>
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	<p>5. Does the pre-concept briefly explain which organizations would be involved in the proposed regional project/programme at the regional and national/sub-national level, and how coordination would be arranged? Does it explain how national institutions, and when possible, national implementing entities (NIEs) would be involved as partners in the project?</p>	<p><b>Yes. However additional information is required.</b> See pp. 7-8. UNIDO will serve as IE and will also execute components 2&amp;4 whose cost is \$8,400,000 or about 47% of total components cost (USD 17,700,000). ADPC will execute components 1&amp;3 (USD 9,300,000). More details on the roles of UNIDO and ADPC is needed. Also, the roles of national entities need to be emphasized to ensure effective delivery and sustainability of project outcomes. Moreover, please clarify where the Regional Project Steering Committee (RPSC) will be hosted and how it will deliver its functions (e.g.: via virtual or physical periodical meetings, etc.).</p> <p><b>CAR4:</b> Under Part III, pp. 7-8, please provide more details on UNIDO's and ADPC's implementation and execution arrangements (<i>Note: UNIDO has a Field Office in Pakistan but does not have an office in Mongolia which is represented by its <a href="#">Regional Office in China</a>; ADPC has a formal presence in Pakistan but does not appear to have an office in Mongolia</i>). <u>Also</u>, clarify the role of national institutions in the project implementation and execution. <u>Moreover</u>, please clarify where the RPSC will be stationed and how it will deliver its functions.</p> <p><b>CAR5:</b> As per the Board (decision B.18/30), please provide written evidence that execution services by the Implementing Entities on an exceptional basis has been requested by the recipient countries, involving designated authorities in the process, and providing rationale for such a request. The responsibility for these services</p>	<p><b>CAR4: Cleared.</b> See Part III, p. 10.</p> <p><b>CAR5: Cleared.</b> Formal request from Mongolia is attached. <u>Request from Pakistan is being finalized and will be shared with AFSEC upon receipt.</u></p>
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		shall be stipulated, their budget estimated in the fully developed project/programme document and covered by the execution costs budget of the project/programme. Please provide further justification and evidence as per the above for UNIDO's involvement in project execution.	
Resource Availability	6. Is the requested project / programme funding within the funding windows of the programme for regional projects/programmes?	<b>Yes.</b>	-
	7. Are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 10 per cent of the project/programme for implementing entity (IE) fees and at or below 10 per cent of the project/programme cost for the execution costs?	<b>Yes.</b>  The execution costs are USD 981,818 or 5.26% (taking into account the IE involvement in the execution of components 2&4) please note that the portion of the IE fee to UNIDO will be \$126,000 representing 1.5% of the components being executed by the IE as per Decision B.38/42.	<b>No.</b>  <b>CAR6:</b> 1. The PFG budget has an overage of \$450 as a result of breakdown in column 3 row 2 related to Workshop expenses: US\$ 2,450. Please address.

<p>Eligibility of IE</p>	<p>8. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?</p>	<p><b>No.</b> UNIDO's accreditation expired on 30<sup>th</sup> November 2025, and is currently undergoing re-accreditation.</p>	<p><b>No.</b></p> <p><b>CAR7:</b> Please kindly note that the UNIDO focal point as per AF website is Ms Haidara and hence her signature is required. Kindly attach change of IE representative name letter if available.</p> <p><i>Please be advised that the findings of the AFB Secretariat's review of the funding proposal(s) do not reflect, indicate, or prejudge the outcome of the reaccreditation process currently underway. The Implementing Entity (IE) shall acknowledge that the funding proposal will not be approved by the Board if the IE's accreditation has expired, and reaccreditation has not been achieved at the time of the Board's decision. Notwithstanding this potential risk, the IE has elected to proceed with the development of the funding proposal.</i></p>
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ADAPTATION FUND

## CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

### PART I: PROJECT/PROGRAMME INFORMATION

**Title of Project/Programme:** Climate-Smart Rangelands and Livestock Value Chains for Sustainable Adaptation (RAISE) project

**Country:** Mongolia

**Thematic Focal Area:** Food Security

**Type of Implementing Entity:** Multilateral Implementing Entity

**Implementing Entity:** UNDP

**Executing Entities:** Ministry of Environment and Climate Change (MECC), UNDP and UNIDO

**Amount of Financing Requested:** 15,000,000 (in U.S Dollars Equivalent)

**Project Formulation Grant Request (available to NIEs only):** Yes  No

**Amount of Requested financing for PFG:** 150,000 (in U.S Dollars Equivalent)

**Letter of Endorsement (LOE) signed:** Yes  No

*NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: <https://www.adaptation-fund.org/apply-funding/designated-authorities>*

**Stage of Submission:**

- This concept has been submitted before
- This is the first submission ever of the concept proposal In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

**Please note that concept note documents should not exceed 50 pages, including annexes.**

## A. Project Background and Context:

### General Information

1. Mongolia is a land-locked country situated between the People’s Republic of China and the Russian Federation. With a land area of 1.56 million km<sup>2</sup> and a population of 3.5 million, Mongolia is one of the least densely populated countries on earth with about two people per km<sup>2</sup>.<sup>1</sup>
2. The national landscape consists largely of dry grasslands, semi-deserts, and mountain ranges, transitioning from the taiga forests of the north to the Gobi Desert in the south. Rangelands cover 80 percent of the territory - around 120 million hectares - forming the ecological backbone of both livestock production and the country’s biodiversity. Forests account for about 12 percent, and arable land constitutes less than 1 percent. The total water resources are approximately 596.8 km<sup>3</sup>, with lakes holding the largest share (532 km<sup>3</sup>), followed by rivers (34.6 km<sup>3</sup>), glaciers (19.4<sup>3</sup>) and groundwater (10.8 km<sup>3</sup>). For domestic water supply and ecosystem services, Mongolia depends heavily on rivers, lakes, and groundwater.<sup>2</sup>
3. Mongolia remains one of the few predominantly pastoral nations in the world. Contributing 75 percent of gross agricultural output, pastoral livestock production underpins rural livelihoods, food security and light industry while also shaping national identity. Yet this foundation is becoming increasingly fragile. Climate change - manifested in rising temperatures, shifting precipitation patterns, and more frequent droughts, dzuds<sup>3</sup> and other extreme weather events - is accelerating desertification and land degradation while overgrazing and unsustainable land use practices compound these effects. An estimated 76.9% of the country’s territory is affected by desertification (Figure 1)<sup>4</sup>. The most recent 2023–2024 dzud covered 80% of the territory and killed 14.5% of the total livestock herd<sup>5</sup>. The impacts of climate change coupled with socioeconomic vulnerabilities directly threaten the livelihoods of herder households, which constitute nearly two thirds of the rural population.
4. Over the past three decades, Mongolia's population growth has been concentrated almost entirely in a single location - Ulaanbaatar. Between 1990 and 2019, approximately 663 thousand people relocated from rural areas to the capital, equivalent to 45 percent of Ulaanbaatar's 2019 population<sup>6</sup>. Climate variability and natural disasters are primary push factors displacing rural communities. Limited access to quality education, healthcare, and social services in rural areas further accelerates rural-to-urban migration. The share of young people aged 15 to 34 in the total number of herders declined from 57.7% in 1995 to 24.5% in 2024. This raises serious concerns about future workforce shortages and accelerated demographic ageing in rural areas.
5. Mongolia’s economy is dominated by the mining sector—particularly coal, copper, and gold, which contributes 27.9% of gross domestic product (GDP) and over 87.9% of export earnings. Per-capita GDP in current prices has risen from USD 1220.2 in 1990 to USD 6750.6 in 2024<sup>7</sup>. Poverty rates have fallen proportionally, yet absolute numbers remain high, particularly in rural areas where livelihoods depend on livestock and other climate-sensitive natural resources. Agriculture, including pastoral livestock production, employs 22.5% of the labor force and provides a critical social safety net. The economy remains highly exposed to external demand fluctuations, commodity-price volatility, and the cascading impacts of global climate change<sup>8,9</sup>.
6. Mongolia holds the 65th place in the Global Gender Gap Index 2025 Ranking by the World Economic Forum, with subindexes in the categories “Education attainment” and “Health and survival” reaching the global 1st rank. Substantial gender gaps exist in economic participation and opportunity, and political empowerment. Women of working age in Mongolia are 15% less likely than working-aged men to be in the labor force. In 2022, women earned 25% less than men and dedicated twice the amount of time men on paid household activities<sup>10</sup>.

<sup>1</sup> National Statistics Office of Mongolia (NSO), 2025. Mongolian Statistical Information Service <https://www.1212.mn>

<sup>2</sup> Ministry of Environment and Tourism (MET), 2024. Fourth National Communication of Mongolia under the UNFCCC.

<sup>3</sup> Severe weather conditions in winter and spring causing mass losses of livestock, usually following a drought and comprising a combination of extremely low temperatures and heavy snowfall.

<sup>4</sup> Information and Research Institute of Meteorology, Hydrology and Environment (IRIMHE), 2020. Desertification atlas of Mongolia. <https://eic.mn/dldbbase>

<sup>5</sup> NSO, 2025. *Agricultural Sector 2024*.

<sup>6</sup> Mongolian Academy of Sciences, 2023. Issues of determining the effects of migration on population growth in Ulaanbaatar. Proceedings of the Mongolian Academy of Sciences.

<sup>7</sup> <https://data.worldbank.org>

<sup>9</sup> National Statistics Office of Mongolia (NSO), 2025. *Agricultural Sector 2024*.

<sup>10</sup> The World Bank, 2024. *Mongolia Gender Assessment*.

Lower female labor force participation reflects, in part, persistent gendered social norms. According to UNDP's 2020 Gender Social Norms Index, 47% of men and 48% of women in Mongolia agree or strongly agree that men should have priority access to jobs when employment is scarce. These attitudes extend to perceptions of leadership: 52% of men and 44% of women believe that men make better political leaders. Although women are employed at high rates in public administration, they remain concentrated in lower and mid-level positions - constituting only 30% of mid-level managers and 15% of those in senior leadership. Women's voice in political and policy-making processes remains correspondingly limited<sup>11</sup>.

7. In addition to the overall gender gaps present in the society, rural women and girls experience limited access to sexual and reproductive health supplies and care, and increased vulnerability to gender-based violence. Women, along with children and the elderly, are particularly vulnerable during dzuds<sup>12</sup>. The active migration of young women to urban centers reflects the reality of hardships endured by rural women. In herder households, women account for only 24% and 34% in the age groups 15-24 and 25-34, respectively<sup>13</sup>. These facts also reveal the reverse gender gap in education – most of the rural youth pursuing tertiary education in urban centers are women. However, this trend is also fragile with young male herders increasingly seeking tertiary education and better employment opportunities in Ulaanbaatar, the mining sector and abroad.

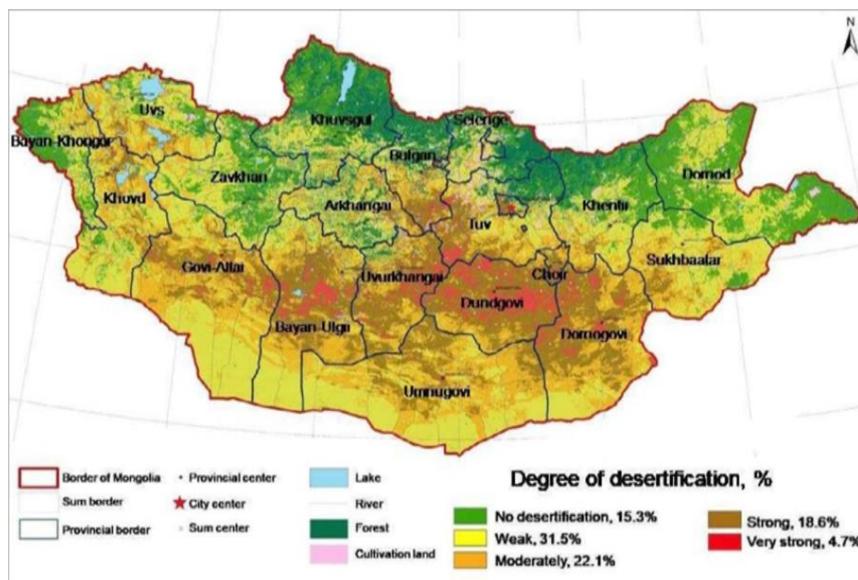


Figure 1. Desertification map of Mongolia (IRIMHE, 2020)

### National Climate Context

8. Mongolia has a highly continental climate characterized by strong seasonality, extreme temperature variability, and generally low and erratic precipitation. Due to its high elevation, the country experiences long, cold winters and short, increasingly hot summers, making climate-sensitive sectors—particularly pastoral livestock systems—highly vulnerable<sup>14</sup>. Seasonal mean temperatures range between -32°C to -8°C in winter (December-February), between 9°C to 29° in summer (June-August), -20°C to 17°C in spring (March-May) and autumn (September-November)<sup>15</sup>.

9. Mongolia is warming at more than twice the global average. Mean surface temperatures during 2013–2022 were approximately 2.3°C higher than in the early 20th century, with most warming occurring since the 1980s. Winter and early spring warming has been particularly pronounced, accelerating snowmelt and increasing evapotranspiration. Rising air and soil temperatures have reduced soil moisture availability and increased the frequency of extreme heat events, undermining pasture productivity despite a longer growing season. Figure 2 illustrates national trends in temperature and precipitation, highlighting widespread warming and increasing spatial and temporal variability of rainfall.

<sup>11</sup> UNDP, 2020. Gender Social Norms Index (GSNI): Tackling Social Norms: A Game Changer for Gender Inequalities.

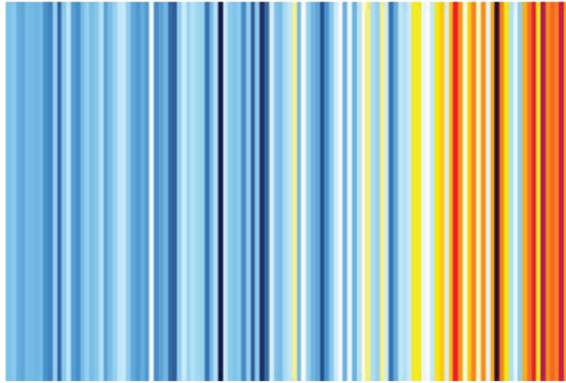
<sup>12</sup> MET, 2024. Fourth National Communication of Mongolia under the UNFCCC.

<sup>13</sup> NSO, 2025. Agricultural Sector 2024.

<sup>14</sup> IRIMHE, 2021. Atlas of monthly and annual climate norms.

<sup>15</sup> MET, 2024. Fourth National Communication of Mongolia under the UNFCCC.

OBSERVED ANNUAL AVERAGE MEAN SURFACE AIR TEMPERATURE,  
1901 - 2022  
MONGOLIA



OBSERVED ANNUAL PRECIPITATION,  
1901 - 2022  
MONGOLIA



Figure 2. Temperature and precipitation patterns in Mongolia (The World Bank Group, 2024)

Note: In the left-hand pane, blue represents cooler temperatures and orange warmer temperatures over a range of approximately 4°C. In the right-hand pane, darker colors indicate more precipitation over a range of approximately 120 mm.

10. Annual precipitation remains low overall and highly variable. While long-term averages show only a modest increase, inter-annual and intra-seasonal variability has increased sharply<sup>16</sup>. Snowfall has increased in some regions, but earlier snowmelt now results in surface runoff rather than infiltration into frozen soils, limiting moisture availability for vegetation. Warm-season precipitation has not increased sufficiently to offset rising temperatures, while short-duration, high-intensity rainfall events increasingly contribute to flooding and soil erosion<sup>17</sup>.

#### Climate profile of target areas (Dundgovi and Sukhbaatar aimags)<sup>18 19</sup>

11. The target aimags reflect national climate trends. Both have experienced rapid warming over the past decade, with the strongest increases occurring in **March and April**, advancing snowmelt and increasing evaporation before soil recharge can occur. Although annual precipitation has increased modestly, **declining early-summer rainfall**—when rangeland vegetation growth is most critical—limits pasture regeneration.

12. Using 1981-2010 average temperatures recorded at Mandalgobi (Dundgovi aimag centre) and Baruun-Urt (Sukhbaatar aimag centre) as baseline values, comparison with the most recent decade (2015-2024) reveals significant warming. In Mandalgobi, mean annual temperature increased from 1.2°C to 3.3°C—a rise of 2.1°C. In Baruun-Urt, mean annual temperature increased from 0.4°C to 2.7°C—a rise of 2.3°C. Examining monthly changes, March temperatures in both aimags showed the largest increase above baseline levels (+4.2°C in Mandalgobi; +4.6°C in Baruun-Urt). These findings confirm that the target aimags fully reflect the intensive warming trend observed across Mongolia, with spring warming occurring earlier and snowmelt advancing accordingly (Figure 3).

<sup>16</sup> The World Bank Group, 2024. Mongolia: Country climate and development report.

<sup>17</sup> MET, 2024. Fourth National Communication of Mongolia under the UNFCCC.

<sup>18</sup> NAMEM, 2021. Climate service system. <http://climate-service.mn>

<sup>19</sup> NSO, 2025. Mongolian Statistical Information Service <https://www.1212.mn>.

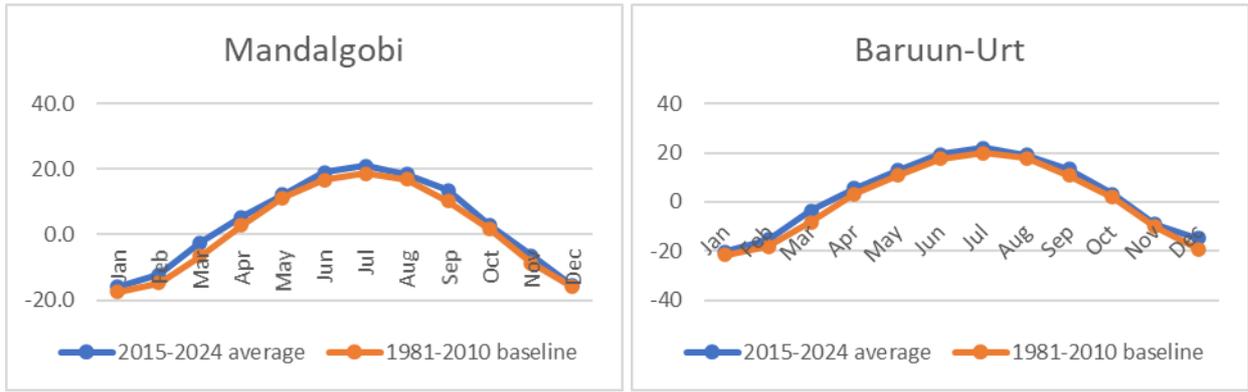


Figure 3. Comparison of monthly mean air temperatures at Mandalgobi and Baruun-Urt stations: 2015-2024 average versus 1981-2010 baseline

13. **Precipitation trends.** Based on all meteorological station measurements for 1991-2020, mean annual precipitation totals 120.6 mm in Dundgovi aimag and 197.3 mm in Sukhbaatar aimag. Comparing the 2015-2024 annual precipitation averages at aimag centres with the 1991-2020 baseline reveals increases of 14.9% in Mandalgobi and 18.4% in Baruun-Urt. At the monthly level, the largest precipitation increases occurred in September in Mandalgobi (+6.56 mm) and in July in Baruun-Urt (+21.03 mm). Conversely, June precipitation declined most significantly in both aimags (Mandalgobi: -1.22 mm; Baruun-Urt: -7.51 mm) (Figure 4).

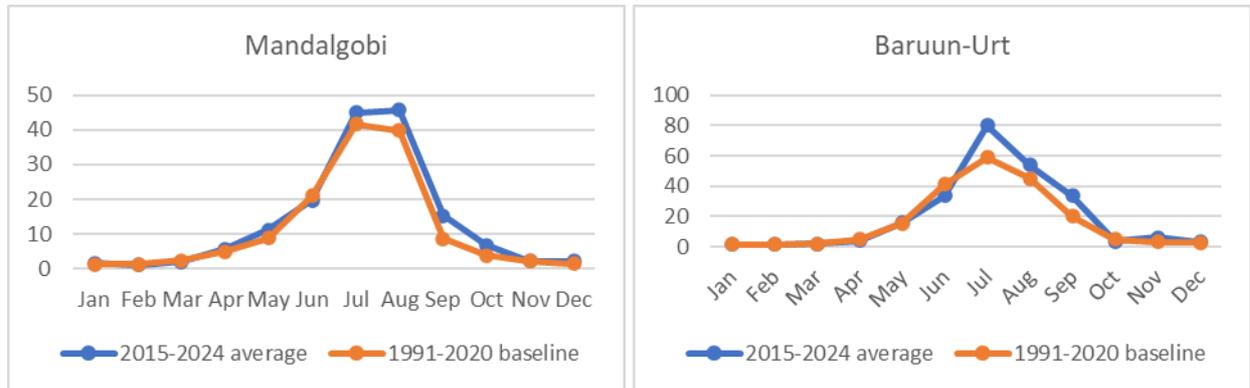


Figure 4. Comparison of monthly precipitation totals at Mandalgobi and Baruun-Urt stations: 2015-2024 average versus 1991-2020 baseline

14. These findings indicate that while overall precipitation has increased in the target aimags, the rapid warming in March and April causes snowmelt water to evaporate rather than infiltrate the soil. Consequently, rangeland vegetation begins its growth cycle under conditions of low antecedent soil moisture. Moreover, declining precipitation in June—when vegetation growth is most active—adversely affects rangeland productivity. This combination of early spring warming, reduced soil moisture recharge, and declining June precipitation creates unfavorable conditions for rangeland ecosystems and increases the vulnerability of pastoral livelihoods to climate variability.

**Climate-related disasters and livestock mortality**

15. Hydrometeorological disasters have caused the loss of 599 human lives, 44.6 million heads of livestock and MNT 816.4 billion in economic damage between 2001 and 2024<sup>20</sup>. The hazard phenomena causing the highest damage to society and the economy include droughts, dzuds, forest fires, snow and dust storms and flush floods. Climate change is increasing the annual frequency of hydrometeorological hazards and disasters, which was 98 per year on average during the decade 1994-2024 - compared to 60 for the period 1990 and 2024<sup>21</sup>.

16. Drought frequency ranges from 10% in forest-steppe regions to 80% in desert regions, with a national average of approximately 20%, which indicates that a drought occurs roughly every five years<sup>22</sup>. Droughts cause

<sup>20</sup> MET, 2024. Status report of environment in Mongolia 2021-2023.

<sup>21</sup> National Agency of Meteorology and Environmental Monitoring (NAMEM), 2025. Meteorological disasters in 2024. <https://namem.gov.mn/d/danger/282>

<sup>22</sup> Gomboluudev et al., 2018. Climate of Mongolia. Rangeland Ecosystem of Mongolia - Ulaanbaatar, pp: 75-107

yield losses in the crop sector and directly affect pasture vegetation, resulting in both inadequate livestock fattening and insufficient hay and fodder reserves. Droughts are often followed by dzud events, and vulnerability of livestock is increased when summer droughts have restricted the possibility to prepare sufficient hay and fodder reserves for the winter.

17. Dzud frequency and severity have increased significantly since the 1990s, culminating in major events during 1999–2002, 2009–2010 and in 2023–2024. The consecutive dzuds during the period 1999–2002 affected more than 80% of the country’s territory and caused the loss of 11.17 million livestock. In 2009–2010, more than 90% of the total area was affected, and the livestock losses were 10.32 million, with 43,555 households losing their entire herd while an additional 163,780 households lost at least half of their livestock<sup>23</sup>. The 2023–2024 dzud killed 9.364 million animals, causing a 33% decline in the gross output of the livestock sector<sup>24</sup>.

18. Although characterized as an extreme weather “event”, a dzud has lasting consequences. Rangeland forage becomes scarce in April and remains so until vegetation begins in May. Mother animals have a very low survival rate even after the dzud, mostly until June. The productivity of the surviving livestock declines. Prices of live animals and livestock products drop, leading to reduced purchasing power of herders and limiting their capacity to overcome the dzud e.g., by purchasing hay and fodder<sup>25</sup>. Poor and vulnerable herder households suffer the difficulties and consequences of dzuds most, often facing food shortages and malnutrition. Many herders that lost their livestock and migrate to Ulaanbaatar live in ger areas without adequate sanitation and exposure to indoor and outdoor pollution<sup>26</sup>.

19. While other climate-related disasters such as floods, high-intensity rainfall events, and dust and snowstorms endanger human lives and health, cause livestock losses, and damage essential infrastructure, the dzud remains the principal disaster directly threatening herder livelihoods at both regional and national scales. Therefore, the proposed project focuses on dzud resilience as the foundation for strengthening adaptive capacity among pastoral communities.

### Current impacts of climate change on the livestock sector

20. **Rangeland degradation.** The Government of Mongolia’s National Adaptation Plan (2024–2030) identifies three interrelated drivers of national vulnerability: high exposure to multiple climate hazards (dzud, drought, floods, and dust storms). Climate change increases the frequency and intensity of droughts, and the scale of aridity throughout the country<sup>27</sup>. Drought is the main climatic reasons leading to rangeland degradation, which is further exacerbated by the increase in dust blowing days<sup>28</sup>.

21. **Increasing threat of dzud.** The increasing frequency and intensity of droughts correlates with an increase in the frequency and severity of dzuds. Historical records and time-series data indicate that a dzud occurred once every 110 years between 1740 and 1940<sup>29</sup> and roughly once every 10 years between 1940 and 2000<sup>30</sup>. Since 2000, five dzuds occurred, (2000–2001; 2001–2002; 2009–2010; 2022–2023; 2023–2024), with a frequency of once in five years. Causing mass losses of livestock, dzuds pose a direct threat the livelihoods of herder households, which earn 90 to 96.4% of their income in animal husbandry<sup>31</sup>.

22. **Decrease in livestock productivity.** Live weights of livestock are decreasing due to heat stress, reduced time of grazing resulting from the increasing number of extremely hot days, delayed summer seasons and the decline of rangeland biomass. There is also a declining tendency in the sheep wool output, while the goat shedding time has been shifted by 5–10 days backwards, reducing quality and market value of cashmere.

23. **Reduced availability of water.** The total flow norm of rivers in Mongolia for the period 1991–2020 decreased by 10% compared with the 1975–1990 period. In comparison with 1945, total number and area of lakes decreased by 13.4% and 7.4%, respectively, by 2020. The total area of glaciers decreased from 535 km<sup>2</sup> in 1940 by 37% to 338 km<sup>2</sup> in 2019. The proportion of the country’s territory covered by permafrost declined from 63% in 1971 to 29.3% in 2016. Overall, water availability for both rangeland vegetation and livestock as well as for

<sup>23</sup> SCM (2016). Dzud Response Outline. Save the Children Program in Mongolia.

<sup>24</sup> NSO, 2025. Agricultural Sector 2024.

<sup>25</sup> UNDP, 2025. Socio-economic impact assessment of dzud 2023–2024: Dzud resilience strategy policy recommendations.

<sup>26</sup> World Bank, 2024. Mongolia – Assessing the Adaptiveness of Social Protection and Enhancing the Resilience of Herders Facing Climate Shocks.

<sup>27</sup> Natsagdorj, L and Erdenetssetseg, B., 2020.

<sup>28</sup> MET, 2024. Fourth National Communication of Mongolia under the UNFCCC.

<sup>29</sup> Tsedevsuren, D., 1988. Catalog of steel and dzud in Mongolian historical documents.

<sup>30</sup> MET, 2024. Fourth National Communication of Mongolia under the UNFCCC.

<sup>31</sup> Research Institute of Labour and Social Welfare (2018). Study on herders’ livelihoods.

human consumption has reduced<sup>32</sup>.

**Future projections of climate change and expected impacts on the livestock sector**

24. Surface temperature is expected to increase by 0.7-1.4°C until 2030; 1.1-2.9°C until 2050 and 1.2-6.5°C until 2080, depending on emissions scenarios. Winter temperatures will increase rapidly while summer heatwaves will be prolonged by 3.5 days on average. The number of cold days is likely to decrease by 9-37 days and shorter cold spells by 3 days. Winter precipitation is expected to increase by 9-55% and result in thicker snowpacks. The amount of summer precipitation will not change significantly, but an increase in the number of consecutive dry days leading to frequent and severe droughts is expected. The frequency of drought is expected to increase by 5-45%<sup>33</sup>.

25. The expected increase of aridity over the next 30 years will accelerate rangeland degradation. This will be further exacerbated by scarcity of surface water, which will increase the concentration of livestock - thus overgrazing - in areas with sufficient water availability. The above-ground biomass is projected to decline by 15 to 25% by 2050 and 2080. As an indicator of soil fertility and water retention capacity, the organic carbon content is expected to decrease by 18 to 28 percent in different regions by 2050<sup>34</sup>. Rangeland degradation will substantially increase the vulnerability of herders to climate change.

26. By 2050, dzuds are expected to occur once every three years. If no adaptation measures are taken, average annual losses from dzuds could be about 5.8% of the stock by 2050 and 9.6% by 2100 (Figure 5)<sup>35</sup>.

27. Past dzuds have had the hardest impact on herder households with up to 200 animals, often forcing them into poverty and migration to Ulaanbaatar. As of 2024, 54.3% of herder households fall in this category<sup>36</sup>.

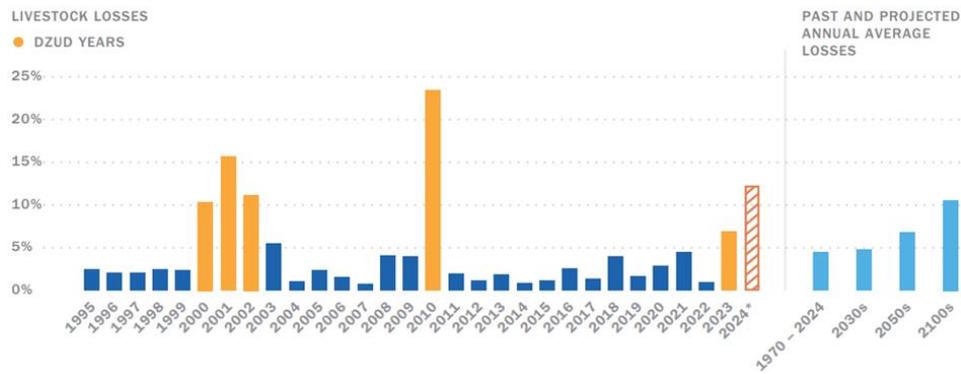


Figure 5. Past and projected livestock losses (The World Bank Group, 2024)

**Problems the proposed project is aiming to solve**

28. Livestock–rangeland systems are the core of the nation’s climate vulnerability. Mongolia contributes minimally to global greenhouse-gas emissions yet bears disproportionate impacts due to its reliance on climate-sensitive rangelands. Recurrent droughts and dzuds, coupled with open-access grazing and weak safety nets, perpetuate cycles of ecological collapse. At the ecosystem scale, land degradation threatens ecosystem services, biodiversity, and carbon storage critical for resilience, while also fragmenting biodiversity corridors for migratory species such as Mongolian gazelle and Asiatic wild ass<sup>37</sup>. At the herder household scale, declining productivity, increasing livestock mortality and debt amplify social vulnerability. Nationally, reduced rangeland resilience undermines the sector responsible for most agricultural output, rural employment, and export potential. Town and city people whose livelihoods are dependent on processing livestock products such as meat and dairy, hides and skins, wool and cashmere and by-products, are impacted directly when supply chains fail. Wholesale and retail chains have been built around livestock products. Meat and milk are legally defined as strategic foods<sup>38</sup>. Hence, the climate vulnerability of the livestock sector endangers the entire economy and food security of

<sup>32</sup> MET, 2024. Fourth National Communication of Mongolia under the UNFCCC.  
<sup>33</sup> MET, 2024. Fourth National Communication of Mongolia under the UNFCCC.  
<sup>34</sup> MET, 2024. Fourth National Communication of Mongolia under the UNFCCC.  
<sup>35</sup> The World Bank Group, 2024. Mongolia: Country climate and development report.  
<sup>36</sup> NSO, 2025. Agricultural Sector 2024.  
<sup>37</sup> MECC, 2025. NAP 2024-2030.  
<sup>38</sup> Food Law of Mongolia, 2012 (last amended in 2024).

Mongolia.

29. The root causes of vulnerability span four interlinked domains that the project addresses through its four integrated components: (i) regulatory and institutional frameworks that fail to translate policy into enforceable practice (addressed by Component 1); (ii) limited climate-risk preparedness infrastructure, extension services, and adaptive management capacity at community level (addressed by Component 2); (iii) underdeveloped value chains that fail to incentivize sustainable production (addressed by Component 3); and (iv) fragmented knowledge systems that prevent learning and scaling (addressed by Component 4). The following analysis sequences these problems in alignment with the project components.

30. Regulatory instruments for sustainable rangeland use are available but not applied effectively. Mongolia's rangelands remain state-owned while the livestock was privatized in the beginning of the 1990s<sup>39</sup>. Under the combined pressures of poverty and migration, informal rules eroded and overgrazing has spread. As of 2024, the total number of livestock equals 110.8 million sheep heads<sup>40</sup>, exceeding the total carrying capacity of rangelands by 49%<sup>41</sup>. Regulation of sustainable rangeland use has been a priority of both the Government of Mongolia and international donors. Their combined efforts resulted in a range of successful models partly adopted into laws. The Law on livestock tax was approved in 2020 with the aim to set a restriction on the number of livestock through headcount-based taxation. The 2024 legal reform, consisting of the approval of the Law on the Legal Status of the Association of Herder Households and amendment of the Land Law, legislated the aimag-level Integrated Land Management Plan (ILMP), the soum-level Annual Land Management Plan (ALMP), and Rangeland Use Agreements (RUAs) between the soum government and Herder Household Associations (HHAs) as the main regulatory instruments. In most soums, however, RUAs are either not approved, not implemented or not monitored. The main reasons include lack of awareness among herders, limited knowledge of soum administrators and land management officers, and lack of HHAs. The establishment of the HHAs is only starting, and this is expected to be a slow process since most herders lack expertise in founding and managing an association. Meanwhile, the livestock tax has yet to generate consistent reinvestment in rangeland restoration<sup>42</sup>.

31. Herders' knowledge of climate-smart practices and access to training and extension services is limited. The tradition of pastoral livestock husbandry in Mongolia has resulted in a wealth of knowledge on managing rangelands and climatic variability. However, a significant proportion of today's herders only became herders after receiving livestock through privatization during the 1990s. Furthermore, the harsh impacts of climate change can only be effectively addressed through combining traditional knowledge with climate-smart practices resulting from applied research and modern technologies. Herders, however, do not have regular access to learning opportunities and extension services. The public extension system reaches herders through livestock officers of soum governments, bagh governors and PUG leaders, and private vets, but delivery of information, advice and professional support only occurs irregularly. Also, these advisors themselves have limited knowledge of climate-smart practices. The Law on Herders (2024) provides for establishment of a "Herder Development Centre" in each soum for the purpose of raising awareness of government policies and regulations, organizing training and facilitating experience-sharing among herders, but implementation is in early stages.

32. Water infrastructure for livestock is inadequate to cope with increasing climate variability. Climate change is reducing surface water availability and increasing the concentration of livestock around remaining water sources, exacerbating localized overgrazing. Snowmelt patterns are shifting, causing water to evaporate rather than infiltrate the soil. Wells and water points are unevenly distributed, and many are poorly maintained. This constrains the mobility essential for rotational grazing and sustainable rangeland management. Without improved water infrastructure, herders cannot redistribute grazing pressure even where rangelands have recovery potential.

33. Veterinary services are inadequate to support climate-resilient livestock production. Weak veterinary services allow the spread of animal diseases, reducing livestock productivity and product quality. Parasite damage and poor animal health result in hide and skin damage that wastes up to one quarter of hides produced. Disease outbreaks during dzud recovery periods compound livestock losses and prolong herder vulnerability. The shortage of trained veterinary professionals in rural areas, combined with limited access to veterinary supplies and infrastructure, undermines efforts to improve herd health and resilience to climate shocks.

34. Climate-risk preparedness infrastructure is inadequate: early warning systems, forage reserves, and

<sup>39</sup> Fernandez-Gimenez, M.E. and Batbuyan, B., 2008. Implementation of Mongolia's 2002 Land Law: Implications for herders and rangelands. Proceedings of the XXI International Grassland Congress /VIII International Rangeland Congress.

<sup>40</sup> NSO, 2025. Agricultural Sector 2024.

<sup>41</sup> MECC, 2025. NAP 2024-2030.

<sup>42</sup> FAO. 2025. The Implementation of the Livestock Tax Law: An Opportunity for Climate Action. Ulaanbaatar. <https://doi.org/10.4060/cd6870en>.

insurance coverage remain limited. Climate projections show dzud frequency and severity will increase, making preparedness a national priority under NDC 3.0 and NAP. However, critical gaps persist. Early warning systems exist at national level but lack localized capacity to translate forecasts into timely action at soum and bagh levels. Emergency fodder reserves are insufficient, with most herders lacking adequate hay and prepared forage to sustain livestock through severe winters. Reserve pasture protocols exist but are rarely operationalized due to weak coordination and unclear activation triggers. Index-based livestock insurance (IBLI), specifically designed to compensate economic damages caused by dzuds, covers only 14.4% of herder households and 8% of total livestock as of 2022. While laws and instruments exist—including aimag/soum response plans, Herder Development Funds, and IBLI - adoption at local level is weak. Response Action Plans with preventive measures are not systematically developed or implemented.

35. Underdeveloped value chains and low prices of livestock products force herders to emphasize herd size rather than productivity. Mongolia’s NAP emphasizes increased and export-oriented meat production as a key strategy to align the number of livestock with the carrying capacity of rangelands. While meat exports have increased during recent years, export prices comparable to or below domestic market prices provide little incentive<sup>43</sup>. Wholesale meat prices of around USD 2 per kg hardly motivates herders to intensify slaughtering. The by-products hide and skin have little value with average cowhides selling for barely US \$1.5. Hence, cashmere production has been established as the main source of herders’ income, and the number of goats has risen five-fold, from roughly 5 million in 1989 to nearly 25 million in 2024<sup>44</sup> with Mongolia now producing roughly 40 percent of the world’s raw cashmere<sup>45</sup>. The rapid increase in goat herding has greatly intensified pressure on rangeland ecosystems since goats graze close to the ground, uprooting perennial vegetation and accelerating erosion.

36. The underlying reasons for the low prices include underdeveloped processing capacity and value chains. The meat industry has the potential for grass-fed, low carbon exports but remains constrained by gaps in disease control, certification, and logistics. Roughly 120 meat processors and 25 tanneries operate below 30% capacity while 70–90 percent of livestock continue to be slaughtered informally in rural areas<sup>46</sup>. Carcass grading, hygienic handling, and animal-welfare standards remain limited, preventing processors from transmitting price signals upstream. The once-prominent leather industry declined because of outdated technologies, weak pollution control, and market access constraints. About 80 percent of cashmere is exported with minimal processing. Herders are paid by weight, not by fineness, provenance, or rangeland stewardship. Mongolia also produces an estimated 40,000 tons of sheep wool annually, yet low market prices and weak processing capacity continue to limit its value to rural households. The result is predictable: herders maintain large, under-conditioned herds as a hedge against winter mortality rather than investing in quality.

37. Market incentives for sustainable rangeland management are being piloted but participation is insufficient. Global markets are shifting toward regenerative production that links ecosystem stewardship to brand integrity. The Mongolian Agency for Standardization and Metrology (MASM) has begun drafting national Climate-Smart Pastoralism standards under the White Gold initiative. The Mongolian Sustainable Cashmere Platform (MSCP) supported by UNDP and the EBRD is piloting third-party verification, digital traceability, and fair-labour standards. The “Responsible Nomads Code of Practice” introduced by the SDC-funded Green Gold project and the “SFA Animal Fibre Standard 1.0” introduced by Sustainable Fibre Alliance (SFA) are required for soft loans offered by Khan Bank<sup>47</sup>. SFA’s Animal Fibre Standard is directly linked to premium pricing offered by SFA itself. As of 2024, approximately 19 thousand herders organized in 208 herder cooperatives have joined SFA<sup>48</sup>. While these efforts are largely focused on cashmere for export markets, with limited domestic private sector participation only limited to GOBI and a few other large cashmere processors. However, they demonstrate commercial viability and potential for scaling up. Data systems are fragmented and lack the integration needed for adaptive management. While detailed data exists on livestock numbers, rangeland condition, and climatic trends, this information is rarely translated or incorporated into market standards, policy decisions or local planning. The e-Gazar digital land information system and ALAMGaC’s databased have significant potential but are not yet integrated with climate monitoring, early warning systems, or value chain traceability. Without a unified monitoring, reporting and verification (MRV) platform, ministries cannot target investments effectively,

<sup>43</sup> In 2024, the average price of beef, mutton, horse and goat meat exported was USD 3.53 per kg, whereas the retail price in Ulaanbaatar in December 2024 was around USD 4.0 per kg.

<sup>44</sup> NSO, 2025. Mongolian Statistical Information Service <https://www.1212.mn>.

<sup>45</sup> European Bank for Reconstruction and Development (EBRD), 2023. EBRD supports cashmere production in Mongolia. <https://www.ebrd.com/news/2023/ebrd-supports-sustainable-cashmere-production-in-mongolia.html>

<sup>46</sup> Information provided by Mongolian Meat Association.

<sup>47</sup> Khan Bank, 2025. Green loan for responsible herders. <https://www.khanbank.com/personal/product/detail/personal-responsible-herder-loan/>

<sup>48</sup> SFA, 2025. Overview of the activities of SFA’s Mongolia branch in 2024.

local governments cannot demonstrate compliance, and herders cannot access the data needed for adaptive decision-making.

38. .

39. Interventions supporting herders, promoting sustainable rangeland use and addressing climate vulnerability of the livestock sector are fragmented and lack a connective architecture. Pilot initiatives often result in a proliferation of well-intentioned initiatives - each technically sound in isolation - but without the connective architecture that would make them self-sustaining or scalable. National initiatives and legislative reforms such as the livestock tax and RUAs lack enforcement mechanisms and institutional capacity for implementation at the local level. The value chains rarely differentiate between sustainably and unsustainably produced livestock products. In the absence of a national system linking grazing compliance with market rewards or budget transfers, both herders and local governments have few incentives to maintain ecological thresholds once external interventions end.

40. Mongolia's rangeland-livestock system sits at the intersection of climate, economy, and governance. Transformation of the system from a climate-vulnerable to a climate-resilient requires a holistic approach that embeds adaptive management tools validated by science within an integrated governance, financial, and market framework designed to sustain itself beyond the project period.

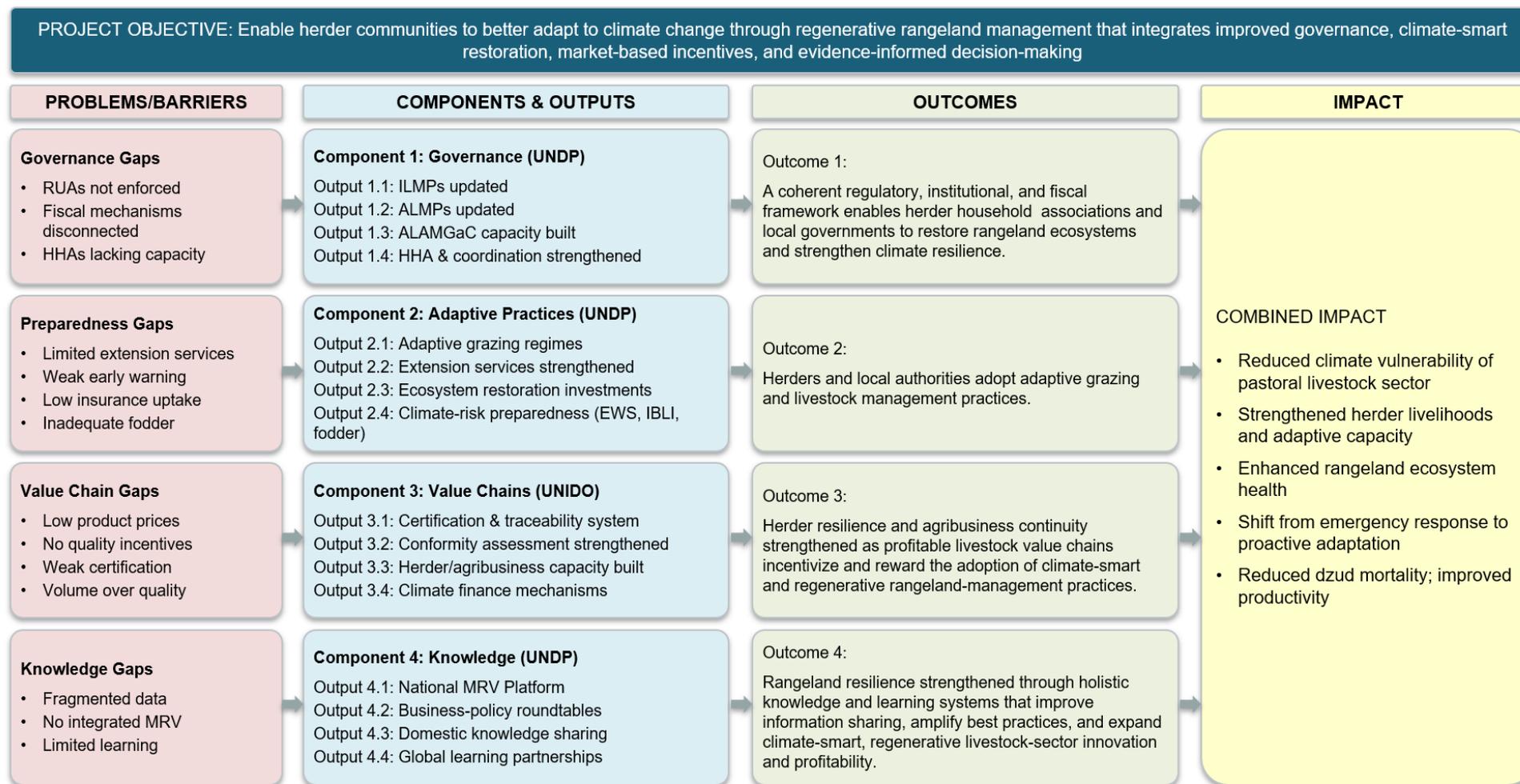
### **Theory of Change**

41. Mongolia's rangeland-livestock system sits at the intersection of climate, economy, and governance, but remains locked in a fragmented, high-volume/low-value model. ILMPs, ALMPs and RUAs value-chain pilots, and insurance schemes exist, yet operate as parallel initiatives rather than as components of a single adaptive governance and market framework. Rangelands are state-owned but function as de facto open access; voluntary grazing rules lapse when projects end; Soum administrations and herder groups lack stable budgets to enforce agreements or maintain monitoring systems. Income structures reward herd size rather than productivity, fiscal instruments such as the livestock tax are not yet systematically reinvested in restoration or Index-based livestock insurance covers only a small fraction of herders. Emergency fodder reserves are inadequate, and early warning systems lack the local capacity to trigger timely action. Water infrastructure constraints limit rotational grazing options. International investments have generated strong technical tools, but these remain localized because incentives, financing, and mandates are not yet aligned.

42. IF (i) a coherent regulatory, institutional, and fiscal framework empowers herder household associations and local governments to restore rangeland ecosystems and strengthen climate resilience; (ii) herders and local authorities adopt adaptive grazing and livestock-management practices that restore rangeland health, improve water security, and enhance resilience to climate shocks through modern extension services, mobile technologies, and targeted ecosystem restoration; (iii) profitable livestock value chains create market-based incentives that reward climate-smart and regenerative rangeland-management practices; and (iv) holistic knowledge and learning systems improve information sharing, amplify best practices, and expand climate-smart innovation and profitability in the livestock sector; THEN herder communities, local governments, and private actors will have the governance structures, technical capacity, financial incentives, and knowledge systems needed to manage rangelands regeneratively, adopt climate-smart practices, and build resilience to climate variability and extremes, BECAUSE when rangeland governance is coherent, practices are adaptive, markets reward sustainability, and decisions are informed by evidence, regenerative management becomes the rational and profitable choice for all stakeholders, LEADING TO Improved rangeland ecosystem health, reduced vulnerability to droughts and dzuds, enhanced livestock productivity, strengthened herder livelihoods, and a systemic shift from reactive crisis response to proactive climate adaptation.

43. The project tackles four interconnected challenges through four integrated components (Figure 6). Component 1 updates ILMPs/ALMPs/SLMPs, operationalizes RUAs via Herder Household Associations, links fiscal instruments to compliance, and digitizes monitoring through the e-Gazar platform; Component 2 revitalizes extension and veterinary services, implements adaptive grazing, restores degraded rangelands, improves water infrastructure, and builds climate-risk preparedness through Response Action Plans, early warning systems, fodder reserves, and expanded insurance; Component 3 develops certification and traceability systems, strengthens conformity assessment bodies, builds capacity for quality-focused production, and establishes climate-responsive financial mechanisms; and Component 4: establishes a national MRV platform, institutionalizes policy and business roundtables, and operationalizes domestic and global learning mechanisms.

**Figure 6. Theory of Change: Climate-Smart Rangelands and Livestock Value Chains for Sustainable Adaptation**



*IF governance + preparedness (EWS, fodder, IBLI) + market incentives → THEN sustainable practices adopted → BECAUSE management becomes profitable & enforceable → LEADING TO reduced vulnerability*

44. This whole-of-value-chain model is enabled by the complementary strengths of UNDP and UNIDO. UNDP brings deep experience in governance reform, climate-risk analysis, ILMP and RUA development, community-based adaptation, and integrated MRV and policy support—ensuring that rangeland management becomes legally anchored, fiscally sustainable, and institutionally embedded from Soum and Aimag levels up to national systems. UNIDO contributes specialized know-how in cleaner production, industrial upgrading, certification, traceability, and private-sector engagement—translating verified ecological performance into competitive economic advantage through climate-smart pastoralism standards, premium offtake contracts, and low-emission processing in meat, leather, wool, and cashmere value chains. Together, the two agencies close the “governance-to-market” loop: aligning science-based thresholds, adaptive grazing and restoration, fiscal incentives, and market rewards so that regenerative rangeland management becomes the rational economic choice, driving a self-reinforcing cycle of resilience from rangeland to market.

**Project Sites**

45. Based on rigorous assessment against comprehensive selection criteria aligned with Adaptation Fund requirements, the project will be implemented in Dundgovi and Sukhbaatar aimags, selected through evidence-based evaluation of climate vulnerability, rangeland condition and recovery potential, institutional capacity, existing baseline investments, demonstration value, and logistical feasibility. Dundgovi exemplifies Mongolia's desert steppe ecosystem with observable degradation, established community organizations and strong market connectivity to Ulaanbaatar, while Sukhbaatar represents the Eastern steppe with high climate vulnerability, ongoing GCF-ADAPT project infrastructure, and strategic cross-border connectivity to China. Together, these aimags offer complementary conditions for demonstrating enforceable RUAs, digital MRV systems, conditional market access, and performance-based governance mechanisms across Mongolia's major rangeland types. The table below briefly summarizes the selection.

Criterion	Dundgovi aimag	Sukhbaatar aimag
1. Alignment with the Adaptation Fund Strategy	<ul style="list-style-type: none"> <li>• 50-70% of land affected by desertification</li> <li>• Desert steppe limits afforestation;</li> </ul>	<ul style="list-style-type: none"> <li>• 47.5% livestock mortality in 2023-2024 (19.5% of national losses)</li> <li>• Climate variables explain 53.7% of livestock mortality variance (above national median)</li> </ul>
2. Logistics	<ul style="list-style-type: none"> <li>• 260 km from Ulaanbaatar (3-4 hours by paved road)</li> <li>• Direct access to central processing facilities and export hubs</li> </ul>	<ul style="list-style-type: none"> <li>• 565 km from Ulaanbaatar (8-9 hours by paved road)</li> <li>• Strategic China border position via Bichigt crossing; planned railway connectivity</li> </ul>
3. Government and community commitment	<ul style="list-style-type: none"> <li>• Both aimag governments formally committed to support project implementation and enforce RUAs</li> <li>• Herder cooperatives and PUGs in both aimags confirmed commitment to innovative, gender-sensitive approaches</li> </ul>	
4. Baseline investments <sup>49</sup>	<ul style="list-style-type: none"> <li>• 8 Soum Federations of PUGs, 66 PUGs with 2205 herder households;</li> <li>• RUAs cover 1.6 million ha; 591 herder cooperatives under “New cooperative” movement;</li> <li>• SLP I-III and Green Gold project foundations.</li> </ul>	<ul style="list-style-type: none"> <li>• 6 Soum Federations of PUGs, 37 PUGs with 1465 herder households;</li> <li>• RUAs cover 1.3 million hectares; ILMP (2023-2037) approved</li> <li>• GCF- ADAPT project (2021-2028); GEF-Dryland Landscapes project (2020-2025).</li> </ul>
5. Avoidance of duplication	<ul style="list-style-type: none"> <li>• The proposed project complements existing investments through digital MRV, systematic rangeland rehabilitation, conditional market access, and enforceable governance mechanisms tied to adaptation outcomes (details in Section F).</li> </ul>	
6. Rangeland condition	<ul style="list-style-type: none"> <li>• ~40% of rangelands in recovery classes I-III; additional 30% in class IV;</li> <li>• Recover potential on ~70% of rangelands within project timeframe.</li> </ul>	<ul style="list-style-type: none"> <li>• ~60% of rangelands in recovery classes I-III; additional 20% in class IV;</li> <li>• Recovery potential on ~ 80% of rangelands within project timeframe.</li> </ul>
7. Water and hydro-met integration	<ul style="list-style-type: none"> <li>• Both aimags covered by IRIMHE dzud early warning systems; ADAPT strengthening climate data capacity;</li> <li>• SDC groundwater studies (2020) provide technical baselines for Gobi regions;</li> <li>• Coordination planned with River Basin Authorities for integrated water resource management.</li> </ul>	

<sup>49</sup> Detailed information is provided in Section F.

8. Demonstration and learning potential	<ul style="list-style-type: none"> <li>• Ecological contrasts enable testing across major rangeland types (desert steppe vs. Eastern steppe);</li> <li>• Market access differences (central vs. border) enable comparative assessment of incentive mechanisms;</li> <li>• 2.9 million ha under RUAs provides backbone for participatory rangeland management demonstration.</li> </ul>	
9. Extension and veterinary services	<ul style="list-style-type: none"> <li>• World Bank LCP strengthening veterinary services and disease surveillance</li> <li>• Extension delivered through soum Divisions of Agriculture, bagh governors, and PUG leaders</li> <li>• Both aimags covered by IBLI; governments committed to expanding extension service quality</li> </ul>	
10. Value-chain linkages	<ul style="list-style-type: none"> <li>• Direct road access to Ulaanbaatar processing facilities and Chinggis Khan Airport export hub.</li> </ul>	<ul style="list-style-type: none"> <li>• Two meat processing factories export to China; SFA certified 4 herder cooperatives;</li> <li>• Planned 846 km railway will enhance international connectivity.</li> </ul>
11. Risk and stability	<ul style="list-style-type: none"> <li>• Stable local governance systems; strong social capital through traditional herder networks;</li> <li>• Climate stresses manageable for project operations; winter-hardened infrastructure in all soum centres;</li> <li>• International organizations have operated without significant security incidents</li> </ul>	

46. Within each Aimag, specific Soums will be selected using clear criteria. During Project Formulation Grant, UNDP and UNIDO in collaboration with MECC, MOFALI, and aimag governments will conduct comprehensive soum-level assessments through field verification, stakeholder consultations, ILMP documentation review, and market connectivity mapping. Candidate soums must commit to whole-of-Soum ILMP and RUA enforcement within six months; provide essential baseline data including carrying capacity assessments, ALAMGaC cadaster records, livestock registry, NDVI time series, and IRIMHE access; post government-financed extension and veterinary officers; and ensure year-round accessibility with practical facilities for field operations. Priority will be given to soums that (i) contain highly degraded but ecologically recoverable rangelands with measurable LDN improvement potential; (ii) include critical ecosystem features such as biodiversity corridors, riparian zones, spring catchments, and dzud-reserve pastures; (iii) demonstrate high climate vulnerability where improved management can reduce risk; (iv) offer safe, cost-efficient logistics for multi-agency operations; and (v) show strong governance commitment, and willingness to adopt enforceable RUAs and conditional offtake contracts. Additional preference will be given to soums demonstrating strong governance commitment and proximity to processors and transport hubs. Final site selections, including supporting evidence and signed commitments, will be validated through multi-stakeholder review and published through e-Gazar and the project's digital MRV platform.

## B. Project Objectives:

### Project Objective

47. The project objective is to enable herder communities to better adapt to climate change through regenerative rangeland management that integrates improved governance, climate-smart restoration, market-based incentives, and evidence-informed decision-making.

### Outcomes

*Outcome 1: A coherent regulatory, institutional and fiscal framework enables herder household associations and local governments to restore rangeland ecosystems and strengthen climate resilience.*

*Outcome 2: Herders and local authorities adopt adaptive grazing and livestock-management practices that restore rangeland health, improve water security, and strengthen resilience to climate shocks through modern extension services, mobile technologies, and targeted ecosystem restoration. Herders and local authorities adopt climate-smart grazing and livestock management practices.*

*Outcome 3: Herder resilience and agribusiness continuity strengthened as profitable livestock value chains incentivize and reward the adoption of climate-smart and regenerative rangeland-management practices.*

*Outcome 4: Rangeland resilience is strengthened through holistic knowledge and learning systems that improve information sharing, amplify best practices, and expand climate-smart, regenerative livestock-sector innovation and profitability*

**Project Components and Financing:**

Project / Programme Components	Expected Outcomes	Expected Outputs	Implementing Agency	Amount (US\$)
Component 1: Climate-Resilient Rangeland Governance and Stewardship	Outcome 1: A coherent regulatory, institutional, and fiscal framework enables herder household associations and local governments to restore rangeland ecosystems and strengthen climate resilience.	Output 1.1: – Integrated Land Management Plans (ILMPs) updated and operationalized for climate-smart rangeland management. Output 1.2: Aimag-level Integrated Land Management Plans and soum-level Annual Land Management Plans updated. Output 1.3: Institutional capacity-building of ALAMGaC and National land-information system Output 1.4: – Inter-agency coordination, Herder Household Association capacity, and policy alignment strengthened.	MECC and UNDP	2,450,000
Component 2: Rangeland Restoration, Extension, and Climate Adaptation Practices	Outcome 2: Herders and local authorities adopt adaptive grazing and livestock management practices.	Output 2.1: – Adaptive rangeland use regimes implemented based on ecological thresholds and traditional knowledge. Output 2.2 Extension services for climate-smart rangeland and livestock management strengthened. Output 2.3 – Community-level adaptation and ecosystem restoration investments implemented through conditional access mechanisms. Output 2.4 – Climate-risk preparedness and social inclusion mainstreamed in herder communities.	UNDP	4,750,000
Component 3: Climate-Smart Livestock Value Chains and Competitive agribusinesses	Outcome 3: Herder resilience and agribusiness continuity strengthened as profitable livestock value chains incentivize and reward the adoption of climate-smart and regenerative rangeland-management practices.	Output 3.1: National certification and traceability system established to create market incentives for climate-resilient rangeland management Output 3.2 - Conformity assessment bodies strengthened to sustain market-based incentives for climate-resilient production. Output 3.3: Capacity of herders and agribusinesses strengthened to reduce climate vulnerability through quality-over-quantity production that improves herd resilience to climate shocks. Output 3.4 – Processing and circular-economy pilots Climate and gender responsive financial mechanisms established to accelerate herder transition to resilient production systems and support post-disaster recovery	UNIDO	4,365,000
Component 4: Climate-Adaptive Rangeland Information Management, Evaluation, Learning and Amplification System	Outcome 4: Rangeland resilience strengthened through holistic knowledge and learning systems that improve information sharing, amplify best practices, and expand climate-smart, regenerative	Output 4.1 – National Rangeland MRV Platform into the existing database system established and operational. Output 4.2 – Business and Policy Roundtables institutionalized to align data, finance, and markets. Output 4.3 – Domestic knowledge sharing and upscaling mechanisms operationalized. Output 4.4 – Global learning and partnerships advanced.	UNDP	950,000

	livestock-sector innovation and profitability.		
Project / Programme Execution Cost			1,309,885
Total Project / Programme Cost			13,824,885
Project / Programme Cycle Management Fee (Implementing Entity)			1,175,115
Total Amount of Financing Requested			<b>15,000,000</b>

48. The proposed financing structure reflects the integrated design of Mongolia’s climate-resilient rangeland system and allocates resources proportionately to the institutional, ecological, economic, and knowledge pillars required for transformational adaptation.

- Component 1 (USD 2.45 million) builds the *institutional backbone* for adaptation—upgrading ILMPs, legalizing RUAs, and operationalizing fiscal instruments that convert voluntary rangeland use rules into enforceable, incentive-linked governance.
- Component 2 (USD 4.75 million) translates governance into *field-level resilience* through adaptive grazing, water-based NbS, revitalized extension and veterinary systems, and institutionalized dzud preparedness.
- Component 3 (USD 4.365 million) creates the economic engine for sustainable adaptation, rewarding verified stewardship through certification, cleaner processing, and results-based finance that link ecological health to profitability.
- Component 4 (USD 0.95 million) secures sustainability and replication by embedding MRV, analytics, and learning systems into national institutions and markets, ensuring verified adaptation drives policy, credit, and trade decisions.

49. Execution costs (USD 1.3 million) cover national coordination, fiduciary management, and technical supervision, while the Implementing Entity management fee (USD 1.17 million) ensures quality assurance, compliance with Adaptation Fund policies, and results-based reporting. Together, these four components create a fully integrated adaptation economy—linking rangeland governance, ecological restoration, value-chain incentives, and national learning systems into a single, scalable framework that strengthens Mongolia’s resilience to climate change while generating inclusive, measurable, and enduring economic benefits.

**Projected Calendar:**

Milestones	Expected Dates
Start of Project/Programme Implementation	1 March 2027
Mid-term Review (if planned)	1 September 2030
Project Completion	1 March 2032
Project Closing	1 June 2032
Terminal Evaluation	1 November 2032

## PART II: PROJECT JUSTIFICATION

**A. Describe the project/programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.**

**Component 1: Climate-Resilient Rangeland Governance and Stewardship**

Lead Agency: Ministry of Environment and Climate Change (MECC) and UNDP in partnership with the Ministry of Food, Agriculture and Light Industry (MOFALI), and Agency for Land Administration and Management, Geodesy and Cartography (ALAMGaC)

*Outcome 1: A coherent regulatory, institutional, and fiscal framework enables herder household associations and local governments to strategically restore rangeland ecosystems and strengthen climate resilience.*

50. As mobility systems have fragmented and ecological carrying capacity has declined, herder livelihoods have become increasingly vulnerable to climate shocks. The 2024 Law on Herder Household Associations marks

a major policy advance, providing the legal foundation for collective action by granting herder household associations (HHAs) the authority to sign contracts, hold budgets, and manage rangeland collectively. Component 1 operationalizes these reforms by creating the spatial, regulatory, and fiscal architecture through which herder household associations and Soum administrations can jointly manage rangelands within ecological limits.

51. The component consolidates four structural pillars: (i) upgraded Integrated Land-Use Plans (ILMPs); (ii) Aimag-level Integrated Land Management Plans and soum-level Annual Land Management Plans updated; (iii) performance-based fiscal mechanisms, including livestock tax reinvestment, Soum Performance-Based Grants (PBGs), and Rangeland Risk Funds; and (iv) the Institutional capacity-building of ALAMGaC and National land-information system. Together, these measures transform isolated project pilots into a coherent, adaptive national governance system. Component 1 will be a pre-requisite for Components 2 and 3. Participation in and benefiting from extension services, restoration investments, and value-chain finance (Components 2 and 3) will be conditional on verified RUA compliance, ensuring that incentives reward stewardship and directly reduce climate risk.
52. The component establishes equity, accountability, and institutional durability. Soum-level governance packages will include standard legal templates, monitoring and mediation training, and basic equipment (vehicles, GPS units, tablets). Women and youth will comprise at least 40 percent of all RUA and HA decision bodies. A three-tier grievance system (HA → Soum → Aimag) and public scorecards will provide transparency and trust. Cross-Soum agreements, coordinated with River Basin Authorities (RBAs), will maintain seasonal mobility and ensure equitable access to drought-refuge pastures.
53. Upgrading ALAMGaC and the e-Gazar system provides national ownership and long-term functionality. For the first time, ILMPs, RUAs, and fiscal instruments will be spatially linked to ecological and hydrological data and automatically flagged when thresholds are exceeded. Training for ALAMGaC and Soum officers will lead to national accreditation for rangeland-management and spatial-planning professionals, creating a permanent human-resource base for future replication. A national roster of certified planners and rangeland specialists will be maintained to support scaling beyond the project sites.
54. By consolidating spatial planning, legal enforcement, fiscal incentives, and digital monitoring, Component 1 creates the institutional backbone for all other project investments. It aligns directly with Mongolia's Nationally Determined Contribution (NDC), Land Degradation Neutrality and the Global Biodiversity Framework (GBF) under the Convention on Biological Diversity (CBD). Collectively, these reforms will move Mongolia from fragmented, donor-driven pilots to a nationally integrated system capable of sustaining rangeland restoration, productive herds, and resilient livelihoods under a changing climate.
55. By project completion, twelve Soums covering approximately one million hectares will implement ALMPs updated with carrying capacity data and operational RUAs. The e-Gazar system will be fully interoperable with IRIMHE and MRV platforms, producing automated alerts and public compliance dashboards. ALAMGaC will function as the national center for regenerative-rangeland spatial planning. Fiscal instruments (livestock tax reinvestment, PBGs, and Soum Risk Funds) will be fully operational and transparently tracked. At least 40 percent of governance participants will be women or youth, and policy reforms will institutionalize the ILMP/RUA system nationwide, with cross-Soum agreements maintaining adaptive mobility.

**Output 1.1 – Integrated Land Management Planning (ILMP) updated and operationalized for climate-smart rangeland management**

56. Mongolia's ILMP system is intended to be the fundamental instrument to ensuring sustainable land management, and reduction of climate change exposure and risk. Unfortunately, this powerful tool too often lacks spatial planning that consistently integrates climate-risk data, ecological thresholds, or budget linkages directed towards regenerative rangeland management. Under this output, ILMPs will evolve from static administrative documents into dynamic, evidence-based planning instruments.
57. Revised ALMPs will embed carrying capacity datasets to guide seasonal use, rest periods, and restoration priorities. Each target Soum will delineate seasonal pastures, otor corridors, reserve and dzud pastures, biodiversity corridors, and water-protection zones, validated by RBAs for hydrological coherence. Participatory mapping with herder household associations will align traditional mobility with climate-risk and IRIMHE early warning data, ensuring that rotational-use regimes remain both ecologically sound and culturally legitimate.
58. Digitized ILMPs and ALMPs will be uploaded into the national e-Gazar allowing for transparent oversight and monitoring along with linkage to fiscal instruments. Restoration and conservation priorities (e.g., reseeding

zones, reserve pastures, and water NbS) will be explicitly budgeted under livestock tax by-laws and Soum PBGs, ensuring sustained financing. The ILMPs and ALMPs will thus serve as the operational bridge between governance, investment, and market engagement, forming the spatial platform and strategic guidance upon which Components 2 and 3 depend.

### **Output 1.2. Soum-level Annual Land Management Plans (SLMP) updated.**

59. Effective rangeland governance requires that land management planning instruments are grounded in reliable data on rangeland conditions and carrying capacity. Currently, Sukhbaatar aimag's Integrated Land Management Plan lacks an evidence-based rangeland management component, while Dundgovi aimag has yet to develop an ILMP. At soum level, Annual Land Management Plans similarly lack systematic integration of carrying capacity thresholds and climate-responsive provisions. This output will address these gaps by supporting the development or updating of ILMPs in both target aimags and ALMPs in 12 selected soums.

60. The project will facilitate a participatory planning process under ALAMGaC's technical guidance. Herder communities will be actively engaged in plan development to ensure that local knowledge and rangeland use practices inform the updated instruments. Plan content will be strengthened through integration of carrying capacity thresholds derived from the enhanced assessment methods under Output 1.1, climate-responsive provisions including dzud preparedness protocols and drought response triggers, and spatial zoning for seasonal rangeland use. ALMPs will delineate seasonal pastures, otor corridors, reserve and dzud rangelands, biodiversity corridors, and water-protection zones while ILMPs will specify cross-soum grazing areas enabling equitable access during droughts. The updated ILMPs and ALMPs will establish the regulatory foundation for Rangeland Use Agreements under Output 1.3. Updated plans will be formally approved by aimag and soum Citizens' Representatives Khurals, ensuring institutional endorsement and legal standing for implementation.

### **Output 1.3 – Institutional capacity-building of ALAMGaC and National land-information system**

61. Transparent, climate-aware data systems are essential for long-term adaptation. ALAMGaC currently manages e-Gazar as a cadastral registry but lacks analytical capacity for ecological monitoring and fiscal integration particularly in terms of regenerative grazing, biodiversity conservation, and climate risk assessments. This output upgrades both the institution and the platform so that e-Gazar functions as a national decision-support tool for regenerative rangeland planning.

62. The project will build this capacity. This may include training along with hardware such as software, and spatial-analytics modules enabling real-time tracking of rangeland condition, climate risk assessments, biodiversity, and fiscal performance. Application-programming interfaces (APIs) may support de-siloing, including coordinating target site e-Gazar to IRIMHE's dzud indices, RBA water databases, and the MRV platform (Component 4), generating a much more efficient and effective system for monitoring carrying capacity thresholds. Public dashboards will display verified spatial and financial information to all users, increasing transparency and coordination across ministries, herders, and investors.

63. Under Component 2, the project will support the use and integration of satellite tracking data for domestic herds within the target zones linked to the e-Gazar to promote real-time observations to inform monitoring, modeling and decision-making. ALAMGaC staff will be trained and nationally certified in advanced GIS, carrying capacity modelling, and state-and-transition analysis, while joint MECC-ALAMGaC guidance on climate-risk indicators will institutionalize common standards. These measures ensure that adaptive governance becomes part of Mongolia's routine public-sector capability rather than a project dependency.

64. Illustrative activities: institutional assessment and capacity-building plan for ALAMGaC; installation of hardware and analytics software; configuration of carrying capacity and fiscal modules; development of APIs linking e-Gazar with IRIMHE, RBA, and MRV; training and certification of staff; publication of national technical guidance.

### **Output 1.4 – Inter-agency coordination, Herder Household Association capacity, and policy alignment strengthened**

65. This output creates permanent coordination and learning mechanisms linking national policy, local governance, and community practice. Building on the intent of the Law on Herder Household Associations, an Inter-Ministerial Working Group (IMWG) composed of MECC, MOFALI, ALAMGaC, the Ministry of Economy and Development (MED), and RBAs will harmonize the Land, Water, and Herder Household Association laws and oversee standardized ILMP and RUA implementation.

66. Coordinated institutions and capable, inclusive herder associations are the foundation for sustained climate adaptation, improved trust, and long-term resilience. Soum land officers will receive capacity packages such as

transport, GPS units, tablets, and Standard Operating Procedure manuals to strengthen enforcement, service delivery and generate comparable data sets. Each participating herder household association will be supported to develop by-laws, financial-management systems, and grievance procedures. Leadership and mediation training will institutionalize women's and youth's participation. Cross-Soum mobility MoUs will formalize seasonal corridors with clear activation and dispute-resolution protocols, reducing conflict and ensuring access to emergency climate resiliency grazing zones.

67. Policy-learning activities will analyze historical lessons and best international practices in terms of adaptive quota systems and fee design while explicitly respecting traditional grazing regimes that avoid rangeland privatization or elite capture. Annual policy labs and cross-Aimag exchanges, inclusive of the suite of on-going donor, government and private sector investments, will feed directly into national reform processes linking with established platforms (e.g., White Gold).

68. Illustrative activities: convene quarterly IMWG meetings; conduct annual policy labs and cross-Aimag exchanges; publish legal and fiscal briefs; provide equipment and training for Soum officers; deliver leadership programs for women and youth; formalize cross-Soum mobility agreements with RBA concurrence.

### **Component 2: Rangeland Restoration, Extension, and Climate Adaptation Practices**

Lead Agency: UNDP, in partnership with the Ministry of Environment and Climate Change (MECC), the Ministry of Food, Agriculture and Light Industry (MOFALI), the Information and Research Institute of Meteorology, Hydrology and Environment (IRIMHE), and the Mongolian University of Life Sciences (MULS).

*Outcome 2: Herders and local authorities adopt adaptive grazing and livestock-management practices that restore rangeland health, improve water security, and strengthen resilience to climate shocks through modern extension services, mobile technologies, and targeted ecosystem restoration.*

69. Component 2 is the operational arm of the project supported climate-resilient rangeland system. It translates the spatial, institutional (e.g., herder household association) and legal frameworks established under Component 1 into tangible field outcomes that regenerate degraded landscapes, stabilize ecosystems, and reduce the vulnerability of herder households to climate change risks.

70. The component introduces adaptive grazing regimes, targeted restoration, revitalized extension and veterinary systems, and standardized preparedness for climate shocks. These interventions are anchored in resilient and regenerative grazing thresholds data and are conditional on verified Rangeland Use Agreement (RUA) and Integrated Land Management Plan (ILMP) compliance—ensuring that every investment reinforces the strategic and informed decision-making architecture established in Component 1.

The component builds on the scientific foundation established under historical investments such as the Green Gold Project, the FAO/GEF Dryland Sustainable Landscapes Impact Programme (DSL IP), and the GCF-financed ADAPT project, all of which have demonstrated that rotational grazing and water-focused nature-based solutions (NbS) can restore biomass and soil function. However, these interventions often remained localized because incentives were temporary and extension services too weak to sustain them. Component 2 fills this gap by embedding adaptive management in enforceable ILMP/RUA systems, linking support to verified compliance, and revitalizing public extension and veterinary services so that herders have the knowledge, credit, and institutional backing to maintain resilience independently.

#### **Outcome 2: Herders and local authorities adopt adaptive grazing and livestock management practices.**

71. Capacity building demands a professional, high-capacity delivery mechanism. Extension, veterinary, and field staff capacity is a major focus. With project support, each target Soum will host at least two trained officers. All training will lead to accredited professional certification by MOFALI, building a national cadre of rangeland and livestock-extension professionals capable of supporting adaptive management beyond the project's lifespan. Herder Field Schools (HFS) will provide peer learning at the household and herder-association levels, ensuring gender and youth inclusion and emphasizing the economic benefits of improved practices. These officers will be linked to national ministries and institutions through digital platforms for continuous learning, data exchange, and feedback.

72. The component also focuses on Mongolia's critical water-rangeland interface. By restoring degraded springs, riparian zones, and wetlands, the project enhances infiltration, groundwater recharge, and the water-storage capacity of rangelands. Vegetation restoration, fodder reserves, and cut-and-carry systems will reduce dry-season pressure on rangelands. Hydrological NbS interventions will be annexed to ILMPs, ensuring that local governments can plan and finance ongoing maintenance. Preparedness for dzud will be institutionalized

through early-warning indices, reserve closures, mobility guidance, and feed release protocols financed through Soum Rangeland Risk Funds. Together, these actions transform Mongolia's rangeland management from reactive crisis response to proactive, evidence-based adaptation. They build a continuous feedback loop between ecological monitoring, local decision-making, and national policy—closing the gap between data and practice, and between resilience and profitability.

73. By project completion, approximately twelve Soums covering one million hectares will operate adaptive grazing regimes with verified carrying capacity thresholds, measurable improvements in vegetation cover, and higher rangeland productivity. At least twenty-four extension/veterinary officers will be trained, certified, and deployed, while two thousand herder households will complete HFS or digital training. At least sixty water NbS and restoration investments will be constructed or rehabilitated and maintained with operational plans. Dzud early-warning and SOP systems will function in all target Soums. Women and youth will represent at least 40 percent of direct participants. Adaptive grazing and NbS approaches will be replicated by non-project Soums through the learning mechanisms established under Component 4.

**Output 2.1 – Adaptive rangeland use regimes implemented based on ecological thresholds and traditional knowledge**

74. Mongolia's nomadic grazing system evolved to largely withstand climate variability, but climate change presents new challenges. Decades of institutional erosion have replaced mobility with continuous grazing, leading to loss of perennial vegetation and reduced resilience. This output will help build herder capacity to engage in adaptive mobility and seasonal balance with community-based grazing systems guided by carrying capacity data and ILMP guidance.

75. Each target Soum will delineate rotational blocks and reserve/dzud pastures within its ILMP and establish RUAs that define seasonal use, rest periods, utilization limits, and reserve management. These agreements will integrate IRIMHE early-warning data and MRV indicators to adjust rules every three to five years as conditions evolve. Herders will receive practical training to identify recovery indicators—plant density, composition, and soil stability—and use mobile and satellite applications to record data, synchronize rotation calendars, and receive alerts. Localized dashboards will display rotation schedules, rest periods, and reserve closures, reinforcing transparency and accountability.

76. Adaptive regimes reduce overgrazing, maintain ground cover, and store biomass for harsh winters. By combining scientific thresholds with traditional knowledge, they also strengthen community legitimacy and social cohesion. As rangelands recover, herders will experience reduced livestock losses, improved feed quality, and greater economic stability and profitability. This will include opportunities to unlock better market conditions and associated resilience benefits under Component 3.

77. Illustrative activities: participatory carrying capacity mapping and community validation; delineation of rotational and reserve blocks; updating RUAs with rotation schedules and thresholds; training herders on ecological indicators; installing lightweight fencing or natural markers for protected zones; uploading seasonal rotation data to e-Gazar and MRV systems.

**Output 2.2 Extension services for climate-smart rangeland and livestock management strengthened.**

78. Less than effective extension coverage has limited Mongolia's capacity to maintain herd health and climate-adaptive practices. This output revitalizes public extension by embedding trained officers in each target Soum, connecting them to MULS and national agencies through a digital platform for continuous learning, diagnostics, and two-way communication with herders.

79. Each project associated extension/veterinary officer will provide integrated services covering herd health, breeding, disease prevention, nutrition, rangeland management, and business planning focused upon reducing climate change vulnerability at scale. FFS cycles and para-veterinary training will disseminate adaptive practices and encourage peer to peer learning and innovation. E-learning modules coordinated with on-going advances (e.g., World Bank projects) will ensure accessibility and broad uptake. All extension officer training will lead to nationally recognized accreditation through MULS and MOFALI, building a professionalized system for livestock extension and rangeland management. Access to extension support and associated benefits will be conditional on verified RUA/ILMP compliance, ensuring that public resources reinforce stewardship. Over time, these positions will be institutionalized within Soum structures, co-financed by livestock tax reinvestment and PBGs. This creates a self-sustaining, nationally embedded extension network that continuously reinforces adaptive management.

80. Illustrative activities: recruit and train extension/veterinary officers; equip with diagnostic kits, and tablets; develop and localize digital learning modules in partnership with MULS; establish e-learning hubs at Aimag agricultural offices; accredit training curricula nationally; conduct FFS and leadership courses for herders and youth; integrate extension data into MRV dashboards.

**Output 2.3 – Community-level adaptation and ecosystem restoration investments implemented through conditional access mechanisms**

81. Degraded rangelands and damaged hydrological systems are major amplifiers of climate vulnerability. This output finances tangible, community-managed adaptation assets that restore ecosystem function and buffer climate extremes. These investments will be strategic, predicated upon and guided by adopted ILMPs and RUA. Again, participation in and completion of Component 1 fundamentals will be a pre-requisite condition for receiving Component 2 benefits. These investments will be more fully shaped during formulation of the full project document. Investment will align fully with AF programming directions. Ultimately, priority investments will be determined via ILMP on a site-by-site basis depending upon vulnerability assessments that clearly identify climate risks and root causes

82. Illustrative investments may include spring and riparian restoration, vegetative stabilization of erosion hotspots, over-sowing and reseeded of native grasses, willow regeneration, and micro-catchments (e.g., beaver dam analogs) that increase infiltration and groundwater recharge. Fodder banks, natural hayfields, and cut-and-carry systems will reduce grazing pressure during critical periods, while biodiversity corridors will be mapped and maintained to preserve connectivity for wildlife and ecosystem services. Each investment will carry a clear custodianship linked to herder household associations with an operational and management plan. These will be connected to fiscal allocations through livestock tax by-laws and PBG budgets. Access to these assets will be strictly conditional on RUA compliance, ensuring that restoration translates into sustained ecological improvement. Implementation will use local labor and small enterprises to build ownership and provide short-term income for vulnerable households.

83. Illustrative activities: participatory identification and design of NbS and restoration investments; fencing and re-vegetation of springs and riparian zones; over-sowing and reseeded priority sites; construction of small weirs and micro-catchments; establishment of fodder reserves and hayfields with O&M/user-fee plans; annexation of assets to ILMPs and integration with MRV monitoring.

**Output 2.4. Climate-risk preparedness and social inclusion mainstreamed in herder communities**

84. Recurrent dzuds and droughts remain the most immediate climate threats to Mongolia's pastoral livelihoods. This output institutionalizes climate-risk preparedness at community level and strengthens the participation of women and youth in adaptation leadership.

85. The primary instrument for institutionalizing preparedness is the Response Action Plan (RAP) provided for under the Law on Herders. The project will collaborate with soum governments and HHAs to prepare gender-sensitive and youth-inclusive RAPs for each target soum. RAPs will specify preventive measures including emergency fodder reserve requirements, early-warning triggers, reserve pasture activation protocols, mobility guidance, controlled off-take arrangements, and feed release procedures. RAPs will define roles and responsibilities for soum governments, HHAs, and other stakeholders, and will be linked to financing through Herder Development Funds established under Output 1.4.

86. Working with the Information and Research Institute of Meteorology, Hydrology and Environment (IRIMHE) and the National Emergency Management Agency (NEMA), the project will strengthen early-warning systems and link them to the rangeland monitoring framework under Output 1.1. Climate alerts will trigger pre-agreed standard operating procedures: reserve pasture openings, mobility coordination, timed feed releases, and facilitated off-take to processors under Component 3. This forecast-based approach converts early warning into early action, reducing livestock mortality and emergency response costs.

87. Index-Based Livestock Insurance will be promoted as a complementary risk management tool. The project will support awareness campaigns and facilitate herder access to IBLI products, enabling households to transfer catastrophic risk while maintaining productive assets. Linkages with Component 3 value chain actors will explore opportunities for bundling insurance with market access agreements.

88. Women and youth will be positioned as leaders in community-level adaptation. The project will deliver targeted leadership and management training for women and youth within HHAs, building skills for roles in association governance, fodder production enterprises, veterinary services, and climate-smart agribusinesses.

Micro-grants channeled through Herder Development Funds will support women-headed households and youth entrepreneurs to establish adaptation-oriented enterprises. Selection criteria for all community investments under Output 2.2 will prioritize proposals that demonstrate women's and youth participation in design and implementation.

89. Public awareness campaigns through radio, SMS, and community meetings will promote a culture of preparedness and reinforce understanding of climate-smart grazing practices. These campaigns will be designed to reach remote households and will include content specifically addressing women's and youth perspectives on climate risk and adaptation.

90. Together, these measures operationalize Mongolia's national disaster risk reduction strategy embedded in the “Medium-term strategy for implementation of the Sendai Framework for disaster risk reduction in Mongolia”, and align with the Law on Promotion of Gender Equality and the Cross-Sectoral Strategic Plan for Promoting Gender Equality in Mongolia (2022-2031) - ensuring that climate adaptation strengthens both social equity and ecological resilience.

### **Component 3: Climate-Smart Livestock Value Chains and Competitive Agribusinesses**

Lead Agency: UNIDO, in partnership with the Office of the President (OP) in line with the White Gold and Food Revolution programmes, provincial governments, herder cooperatives, conformity assessment bodies, industry associations and vocational training institutions *Outcome 3: Herder resilience and agribusiness competitiveness strengthened as profitable livestock value chains incentivize and reward the adoption of climate-smart and regenerative rangeland-management practices.*

91. Component 3 addresses a core driver of climate vulnerability in Mongolia’s pastoral system: the economic pressure to maintain large, low-value herds that overgraze rangelands, weaken animal condition, and collapse under dzud and drought. By creating market and financial systems that reward smaller, healthier, higher-value herds, the component reduces exposure to climate shocks while building household capacity to absorb and recover from losses. Certification, traceability, and cleaner processing convert verified rangeland stewardship into price premiums and stable market relationships, giving herders a direct financial incentive to adopt regenerative practices that restore ecological resilience. The resulting “adaptation economy” reduces climate risk at multiple points: healthier rangelands buffer against drought; well-conditioned animals survive harsh winters; diversified and higher-value income streams provide financial reserves; and processing enterprises maintain operations despite climate-disrupted supply. By embedding these incentives in national law and policy, the component creates a self-sustaining system that continues to reward adaptation well beyond the project’s lifetime. .

92. Mongolia’s livestock sector—nearly 5.5 percent of GDP and more than 75 percent of agricultural output—remains constrained by a low-value equilibrium. Domestic and international markets rarely reward improved breeding, animal health, or verified rangeland stewardship. Leather, wool, cashmere, and meat are generally purchased for quantity rather than quality, perpetuating high-volume, low-profit models that exacerbate ecological stress. Large, low-productivity herds overgraze open rangelands and enter winter in weak condition, increasing mortality during dzud events and deepening vulnerability to climate extremes.

93. Growing but uneven market signals show that this paradigm is shifting. Both national and global buyers increasingly demand traceable, sustainable products raised through regenerative rangeland management, particularly in cashmere, wool, meat, and leather. Yet the mismatch between emerging demand and unsustainable supply keeps herders exposed to price volatility and climate risk, limiting their ability to capture high-value export opportunities.

94. Component 3 addresses this structural gap by strengthening climate-resilient production more profitable than high-risk, high-volume alternatives. By connecting herders, cooperatives, extension services, common service providers, traders, processors, and buyers, through certification and traceability systems the component creates market demand for the regenerative rangeland practices that restore ecosystem resilience. The adaptation logic is direct: certification criteria tied to carrying-capacity compliance and RUA adherence ensure that market premiums flow only to herders who reduce grazing pressure and improve rangeland condition. Higher-quality products from healthier animals command better prices, enabling herders to maintain income security with smaller herds that are less vulnerable to climate extremes. Processors that adopt cleaner production and business-continuity planning can maintain operations during and after dzud events, protecting both their own enterprises

and the market access that incentivizes herder adaptation. This “adaptation-economy” loop ensures that each verified improvement in climate resilience generates economic returns that sustain further adaptation.

95. Through targeted training, technical assistance, and cooperative development, herders will align regenerative grazing with productivity and quality objectives. Activities will include improved breeding, fodder and nutrition planning, veterinary support, and hygienic handling that link animal condition to market standards with cooperatives and producer associations which will receive coaching to meet export benchmarks—micron, staple length, carcass weight, hide grade, and fibre cleanliness—under decent job and gender-equity principles. This approach advances the Food Revolution and White Gold initiatives as well as the NDC 3.0 implementation and complements the World Bank’s Livestock Commercialization Project, merging value-chain competitiveness with climate adaptation building on UNIDO’s contribution to the outcomes of the Export Development Project.

96. Component 3 scales these experiences nationally through a unified certification system for climate-smart pastoralism linked to internationally recognized standards along the lines of existing GAP and organic certification in Mongolia, QR-based traceability, and conditional financial mechanisms that reward compliance. Cleaner-production upgrades in selected meat and leather hubs—identified during full-proposal preparation—directly support adaptation by building climate-resilient processing capacity that can absorb supply-chain disruptions during dzud events, reduce resource consumption under increasing water stress, and maintain operational continuity despite climate variability. Cooperative based product consolidation, direct sales to industry and pre-processing will diversify herder income streams - a critical adaptation measure that reduces dependence on any single climate-sensitive livelihood activity. Supply chain continuity under climate stress is essential for sustaining the market linkages that reward herder adaptation.

97. Ultimately, Component 3 aligns NDC 3.0 to reduce grazing pressure by introducing smart technologies for Mongolia’s sustainable trade and industrial development with climate adaptation by ensuring that every verified improvement in rangeland condition translates into higher income and market opportunity. Regenerative production and better feed management will yield fewer but healthier and more valuable animals with less rangeland impact. Cleaner processing and circular-economy investments will reduce waste and emissions, while certified supply chains attract green finance and long-term buyers. By embedding these fiscal, financial, and market incentives in national law and policy, the component creates a self-sustaining system that continues to reward adaptation well beyond the project’s lifetime—closing the loop from rangeland to market and securing the economic foundation of Mongolia’s pastoral resilience.

98. By completion, Mongolia will operate a fully functional voluntary certification and traceability System for climate-pastoralism to promote free-range grassfed livestock products responding to needs of processing industries for domestic and international markets endorsed by government decree and anchored in national standards. At least 30 cooperatives and processors will achieve certification, and 20 SMEs will adopt cleaner-production and circular-economy models in selected industrial hubs. National commercial banks will offer soft and green loans with favorable interest rates for the SMEs based on their quality and sustainability-based performances. National certification and accreditation bodies will meet international benchmarks, while vocational and technical curricula for meat, fibre, and leather processing will be modernized through partnerships such as the Japanese Meat Academy and the Leather Working Group. At least 40 percent of all direct beneficiaries will be women or youth.

99. Results and impact. By the end of the project, Component 3 will have established a self-sustaining market system that continuously rewards climate-resilient pastoral practices. For herders, the transition to smaller, higher-value herds will reduce direct climate vulnerability (fewer animals to lose during dzud, healthier animals with higher survival rates) while maintaining or improving income through premium prices. Diversified income from multiple value chains—meat, leather, fibre—will reduce exposure to any single climate-sensitive market. For processors, climate-resilient capacity and stable buyer relationships will enable business continuity during climate disruptions, protecting the market linkages that incentivize herder adaptation. At the system level, the integration of certification criteria with RUA/ALMP compliance will ensure that market rewards flow specifically to herders who adopt the regenerative practices that restore rangeland resilience to drought—creating a feedback loop where economic incentives drive ecological adaptation. This market-based approach converts the adaptation gains of Components 1 and 2 into durable economic returns that sustain continued investment in climate resilience.

**Output 3.1 – National certification and traceability system established to create market incentives for climate-resilient rangeland management**

100. This output creates a market-based mechanism that directly incentivizes herder adoption of climate-resilient practices by translating verified rangeland stewardship into price premiums and buyer preference. The adaptation logic is explicit: certification criteria require compliance with carrying-capacity thresholds and RUA/ALMP plans established under Components 1 and 2, meaning that market rewards flow only to herders who reduce grazing pressure and adopt the regenerative practices that restore climate resilience of rangelands. Developed jointly by UNIDO, Office of the President, MASM, MOFALI, and the Mongolian Meat Association (MMA), the system will define measurable criteria covering production and processing, ALMP/RUA compliance, carrying capacity thresholds, animal welfare, water and biodiversity safeguards, cleaner-production practices, and gender and labor rights. By linking market access to verified ecological performance, the system creates a self-reinforcing cycle: herders reduce climate vulnerability through better rangeland management and are rewarded with stable, premium-paying buyers. This standard focuses mainly on the meat industry for premium market export promotion in line with the NDC3.0 priorities that complement other existing standards such as the Responsible Nomads and SFA’s Code of Conduct. Verification will rely on MMA, MRV and e-Gazar data rather than costly external audits. The traceability platform will link certified products to verify ecological performance, allowing domestic and international buyers to view both sustainability and quality indicators. The Government will formalize the standard through ministerial decree and integrate certification into public procurement and export-promotion programs, ensuring long-term policy and institutional alignment.

101. Illustrative activities: draft and validate certification criteria and performance metrics; pilot the traceability platform integrated with MRV and e-Gazar; conduct third-party audits and issue initial certificates; adopt ministerial decree and national promotion strategy; develop buyer partnerships and visibility campaigns for certified products.

**Output 3.2 - Conformity assessment bodies strengthened so sustain market-based incentives for climate-resilient production.**

102. The market-based adaptation incentives created under Output 3.1 depend on credible, sustained certification services that buyers trust. This output ensures that conformity assessment capacity is locally available and affordable, so that the certification system continues to function and reward climate-resilient production beyond the project period. Building on the EDP achievements, government and private conformity assessment bodies supported by UNIDO with international accreditation on Halal and Organic products certification will be enhanced to provide internationally accredited certification for climate-smart pastoralism standards and free-range grassfed products, enabling herder and processors to access domestic and international premium markets that reward verified rangeland stewardship.

103. The certification bodies will collaborate on building capacity and availability of national auditors and assessor's pool. UNIDO will provide required capacity building interventions by mobilizing its internationally recognized experts. The internationally accredited certification bodies will provide affordable local services to the selected meat enterprises to introduce food safety and Halal standards for targeted markets.

**Output 3.3 – Capacity of herders and agribusinesses strengthened to reduce climate vulnerability through quality-over-quantity production that improves herd resilience to climate shocks**

104. This output builds herder capacity to shift from large, vulnerable herds to smaller, more climate-resilient ones without sacrificing income. This is the production-side foundation of the adaptation strategy: herders learn to produce higher-value products from healthier animals, enabling them to maintain or increase income while reducing total herd size and grazing pressure. Improved breeding, nutrition, and husbandry increase individual animal value, dzud survival rates, and post-disaster recovery capacity. By linking improved rangeland management to measurable product enhancements—fibre fineness, carcass weight, and hides and skin integrity—the output demonstrates that climate-resilient production practices are also economically.

105. Herder Field Schools (HFS) and demonstration herds will showcase the economic advantages of “quality over quantity,” reinforcing that regenerative management, animal welfare, and product excellence drive profitability. UNIDO will deploy international and national technical experts to provide practical HFS training for the herders and engage the locally trained vocational training institutions and extension officers. Workshops and digital modules will help cooperatives align production with international buyer requirements, including environmental, social, and governance (ESG) standards. Vocational institutes, especially in the project target provinces will accredit training curricula, ensuring professional recognition and continuity. The adaptation benefit is direct: herders who complete this training will have the technical capacity to maintain income with fewer, healthier animals that survive climate shocks at higher rates and recover faster after dzud events.

106. This output will pilot climate-resilient, zero-waste meat processing that maintains business continuity during climate-disrupted supply periods. The meat enterprises will undergo environmental and operational audits followed by upgrades that enable them to process variable supply volumes typical of post-dzud recovery years while meeting international standards such as HACCP and Halal. Collection hubs for hides and skin from the abattoirs will preserve by-products that would otherwise be lost during supply disruptions, maintaining value-chain linkages that incentivize herder adaptation. Circular use of byproducts—bones, fat, intestine, and endocrine gland supplied to cosmetic and pharmaceutical companies—diversifies processor revenue streams and reduces vulnerability to climate-affected primary supply.

107. This output strengthens the climate resilience of the downstream value chain that creates market demand for herder adaptation. Slaughterhouses and meat processing enterprises will develop business-continuity capacity to maintain operations during and after dzud events, ensuring that the market linkages rewarding climate-smart herders remain functional even during climate disasters. International best practices in cooperation with Japanese Meat Academy will introduce vocational training that includes climate-risk management. Marketing interventions for free-range grassfed meat (e.g. yak, beef, horse, sheep and goat meat) to premium markets (e.g. Gulf, China, Russia).

108. Project will support Mongolian meat enterprises to seek for access to the Global Value Chain to promote the free-range grassfed and Halal meat products at formal markets. Capacity building activities, B2B, connecting with business operators and networking opportunities will be provided by supporting meat industry representatives to attend international meat expos and experience sharing activities (e.g. Gulfood, Chinese Import Export Expo – CIEE, OBE Beef Australia) in cooperation with the Office of the President under the Food Revolution national programme and Mongolian Meat Association (MMA). Roadmap for Mongolian meat industry to enter the Global Value Chains will be developed. Abattoirs will require premium grassfed livestock from herders, who in turn will be recognized and certified as climate smart and premium grassfed producers and suppliers.

109. The leather value chain provides a critical secondary market for herder products, diversifying income streams and reducing dependence on volatile primary commodity markets—a key adaptation measure. Under this Output, climate-resilient business continuity in the leather value chain will be enhanced through a robust policy framework that optimizes hides and skin raw material supply chain quality in alignment with the meat value chain. Local leather enterprises including tanneries and leather goods manufacturers will be equipped with the capabilities to continue business operations despite climate-disrupted supply, maintaining the market demand that incentivizes herder adaptation. Adoption of the Leather Working Group (LWG) environmental protocol and Sustainable Leather Manufacturing practices will position Mongolian leather to access premium international markets that reward verified sustainable sourcing from climate-resilient pastoral systems.

110. Branding, marketing and fashion design of leather goods will be upgraded. International exposures of the leather industry enterprises to promote the free-range grassfed leather products will be organized in cooperation with the Office of the President under the White Gold national programme and Mongolian Association of Leather Industry (MALI).

111. This output will upgrade Mongolia's wool supply chain by introducing climate-smart, labor-saving technologies (e.g., electric shearing, sorting, grading) and improving raw material hubs for herder cooperatives and processors. Wool processing will scale from washing to finished products using international technology and environmental standards, promoting domestic and export markets. By adding value to wool, the project will help balance herd sizes, reduce rangeland degradation from cashmere goats, and create rural jobs, especially for women. UNIDO and national partners will drive sustainable fiber manufacturing, contributing to GHG reduction and climate adaptation.

112. Common services for both meat, leather and textile industry will be developed, including safe and sustainable packaging and labelling in cooperation with Mongolian United Packaging Industry Association, World Packaging Organization and Australian Institute of Packaging.

113. The circular economy and zero waste approach piloted through the meat industry value chain directly supports adaptation by diversifying processor revenue streams to reduce climate vulnerability and creating demand for by-products that might otherwise be lost during supply disruptions. Importantly, reduced livestock numbers with higher individual productivity—the core adaptation strategy—will also deliver mitigation co-benefits through reduced grazing pressure and improved rangeland carbon sequestration. By-product utilization (fertilizer compost, collagen, poultry feed) creates additional value from each animal processed, reinforcing the economic viability of smaller herds. Energy-efficient technologies in cooling systems and inventory management

will reduce operational costs, improving processor margins and their capacity to absorb climate-related supply variability.

**Output 3.4. Climate and gender responsive financial mechanisms established to accelerate herder transition to resilient production systems and support post-disaster recovery.**

114. This output addresses a key barrier to herder adaptation: the upfront costs of transitioning from large, low-value herds to smaller, higher-value production systems. A performance-based soft loan programme implemented by Trade and Development Bank (TDB) of Mongolia will incentivize SMEs in the meat, leather and wool industry to invest in climate-resilient processing capacity and source from certified climate-smart herders. Interest rate reductions of up to 2% annually will be granted upon achievement of verified environmental and food safety certifications (e.g. LWG, ISO45001, HACCP, Halal and organic) and progress towards ESG targets - creating financial incentives aligned with climate-resilience outcomes.

115. UNIDO and TDB will co-design a climate-adaptation soft loan program for Mongolia's meat and leather industry. The program will feature tiered interest rate reductions tied to climate-resilience performance, aligned with the Mongolian Green Taxonomy and TDB's Sustainability Framework. Certification milestones linked to verified climate-smart sourcing, business-continuity planning for climate disruptions, and gender-inclusive eligibility criteria will be integrated. The loans will support investments that reduce climate vulnerability across the value chain, including processing capacity upgrades that maintain operations during dzud events, inventory systems that buffer supply disruptions, and herder cooperative funds that provide emergency liquidity during climate disasters.

116. Scientific based information including meteorological data and early warning systems will be linked in establishing the financial mechanism to prevent potential risks and provide a win-win financial and insurance support system.

**Component 4: Climate adaptive rangeland information management, evaluation, learning and amplification system**

Lead Agency: UNDP, in collaboration with UNIDO, OP, MECC, MOFALI, ALAMGaC, IRIMHE

*Outcome 4: Rangeland resilience is strengthened through holistic knowledge and learning systems that improve information sharing, amplify best practices, and expand climate-smart, regenerative livestock-sector innovation and profitability.*

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117. Component 4 is designed as Mongolia's national learning and investment engine for climate-resilient rangeland management. It consolidates ecological, climatic, livestock, fiscal, and market information into a single operational system so that verified improvements in rangeland condition, livestock productivity, and product quality immediately inform policy, planning, and financial decisions. By connecting data to budgets, credit, and procurement, the component transforms information into an engine of continuous learning, reinvestment, and scaling component builds on and integrates technical foundations established by recent national and international initiatives.

118. The project will create a National Rangeland MRV Platform integrating ILMP/RUA data with IRIMHE risk indices, animal health, production, and market signals. This unified system will enable evidence-based policy, investment, and incentive adjustments by ministries, local governments, herder household associations, and private actors. Building on fragmented initiatives (GCF ADAPT, FAO/GEF Drylands, e-Gazar), the platform—managed by MECC and MOFALI—will be interoperable with IRIMHE and market systems, quantifying resilience in ways that matter to households and markets.

119. Effort will measure how carrying capacity-based grazing and restoration improve ground cover and biomass, how better rangeland condition raises carcass weight, milk yield, and fiber fineness, how early warnings and forecast-based dzud actions reduce livestock mortality, and how these ecological and productivity gains translate into higher household income, lower emergency costs, and premium prices for certified climate-smart products. In short, data do not sit on a shelf; they move money, standards, and markets. The approach responds to lessons from World Bank operations showing that productivity and risk-reduction gains only materialize when information is directly tied to financing, veterinary, and market decisions—not when it is monitored in isolation. By embedding data within fiscal and commercial decision cycles, the project ensures that adaptation knowledge continuously drives investment and behavioral change.

120. Component 4 explicitly embeds the private sector in the learning loop. The White Gold Initiative (WGI) and the Mongolian Chamber of Commerce and Industry (MNCCI) will co-chair market and finance working groups, feeding price and demand data into the system and receiving verified ecological and productivity metrics to de-risk procurement and justify premiums. Verified performance will trigger grants, tax reinvestment, certification support, and inform credit lines and offtake contracts. Banks and insurers will use profitability analyses to design green finance and risk-transfer products. The MRV also underpins Mongolia's climate reporting (UNFCCC, UNCCD, CBD) and domestic planning, while quarterly briefs will quantify resilience, avoided dzud losses, productivity gains, and fiscal impacts for policymakers and investors.

121. By completion, the platform will operate as a permanent national service. At least twenty-five institutions—including private buyers and financial partners—will contribute data; one hundred specialists, with gender parity, will be trained in analytics and interpretation; and a cost-recovery system based on Soum subscriptions and service fees from processors and exporters will sustain operations. A Coordination and Learning Facility (CLF) will maintain replication and capacity-building functions, ensuring that the ILMP–ALMP–RUA–market model continues to expand beyond the project sites. Annual Resilience and Profitability Reports will inform government budgets and donor programming, while transparent dashboards will make adaptation results visible to citizens, investors, and buyers.

122. End-of-project results. A fully operational National Rangeland MRV Platform under MECC, interoperable with IRIMHE, e-Gazar, and market systems managed by the White Gold Initiative and the Chamber of Commerce. Twenty-five institutions actively use and supply data; 100 trained specialists (gender-balanced) operate the system. A permanent Coordination and Learning Facility replicates the ILMP–RUA–market model in eight additional Soums using standardized toolkits. Annual Resilience and Profitability Reports inform budgets and donor programs. A fee-for-service model sustains operations. Verified improvements in rangeland health, income stability, and product profitability are publicly reported, reinforcing confidence in Mongolia's climate-smart pastoral economy.

#### **Output 4.1. National Rangeland MRV Platform established and operational**

123. This output creates the analytical backbone of Mongolia's national adaptation system and ensures its long-term integration with national planning, budgeting and market systems. At present, Mongolia's relevant data are scattered across agencies - satellite imagery at ALAMGaC, meteorological observations and dzud indices at IRIMHE, livestock and veterinary data at MOFALI, and price and quality metrics within private markets—but these streams rarely intersect. The MRV Platform transforms this fragmentation into coherence, providing a unified view of how climate, management, and markets interact to influence resilience, productivity, and profitability.

124. The platform will operate through a joint analytics unit in MECC with support from MOFALI, ALAMGaC, and IRIMHE. Application programming interfaces will connect e-Gazar, IRIMHE feeds, and market databases so that information flows automatically and is visible on open dashboards at Soum, Aimag, and national levels. Standardized indicators and verification protocols will be developed in consultation with MECC, MOFALI, ALAMGaC, and IRIMHE so that the same dataset supports domestic policy and budgeting as well as Mongolia's international reporting to the UNFCCC, UNCCD, and CBD. Data privacy, free prior informed consent, and grievance procedures will ensure trust and participation among herders, cooperatives, and private partners.

125. The MRV platform will quantify resilience in ways that matter to households and markets. It will measure how carrying-capacity-based grazing and restoration improve biomass and soil function, how better rangeland conditions raise productivity and product quality, and how early warnings and forecast-based actions reduce dzud losses and emergency costs. The platform will also support ecosystem-service valuation, estimating gains in carbon sequestration, water regulation, and biodiversity conservation, while tracking social co-benefits including reduced outmigration, lower dust and air pollution, and improved nutrition.

126. MOFALI will publish annual reports quantifying returns on investment—avoided dzud losses, productivity and premium gains, reduced emergency costs, livestock tax performance, and local revenue trends—alongside ecosystem and social co-benefits. These reports will inform national budgets and donor programming, directing resources to cost-effective measures and replication sites. All MRV functions will align with UNFCCC, UNCCD (SDG 15.3.1), and CBD targets, ensuring one verified dataset serves both international obligations and domestic decisions

127. Results will not sit unseen in technical portals. Multi-channel outreach will make adaptation performance

visible and useful to the public through web dashboards, mobile applications, radio and television segments timed to seasonal decisions, and outreach programs that build local data literacy. Information briefs will be shared with ministries, local governments, buyers, and financial institutions to guide planning, budgeting, and investment. In this way, evidence continues to motivate stewardship and inform behaviour well beyond project completion.

#### **Output 4.2 – Business and Policy Roundtables institutionalized to align data, finance, and markets**

128. Output 4.2 establishes Mongolia’s permanent mechanism for translating verified adaptation results into real financial and market action. Evidence changes behavior when it moves money, and this output institutionalizes that connection. The Business and Policy Roundtables will be co-chaired by the Mongolian Chamber of Commerce and Industry (MNCCI) and the White Gold Initiative (WGI) with technical support from UNDP and UNIDO. They will convene government ministries, local authorities, herder household associations, processors, buyers, banks, insurers, and development partners in structured dialogues that use data from the MRV and Financial-Analytics Platform to adjust incentives, budgets, and market arrangements. These sessions will turn verified ecological and economic information into coordinated investment, ensuring that better land management is directly rewarded through credit, premiums, procurement and, ultimately, expanded markets for regenerative, climate-smart livestock products.

129. The Roundtables will meet twice each year, time-aligned to the national budget cycle and seasonal purchasing periods so that evidence feeds into fiscal allocations and contract negotiations in real time. Each meeting will review the latest Rangeland Resilience and Profitability Briefs, analyse the distribution of benefits across sectors, and agree on adjustments to premium structures, green-credit lines, and public-spending priorities. The Roundtables will serve as Mongolia’s central interface between data, finance, and policy—linking the public budgets governed under Component 1 with the market and value-chain incentives developed under Components 2 and 3. They will also act as a coordination space for aligning adaptation indicators and finance triggers with frameworks used by the World Bank, IFAD, the GCF, and other partners, ensuring consistency across funding streams and private-investment instruments.

130. Each year, Roundtables will publish reports summarizing commitments, actions, and outcomes—such as credit extended to verified herders, certified supply purchased at premiums, and grants awarded based on resilience and profitability. Gender and inclusion indicators will ensure equitable benefits. When MRV data reveals barriers, targeted solutions will be commissioned via the MRV platform or Coordination Facility. Over time, Roundtables will evolve into a national public-private institution, linking verified performance to finance and procurement. Annual Adaptation-Economy Reports on MRV dashboards will enhance transparency and make adaptation profitable, accelerating regenerative rangeland management.

131. Illustrative activities under this output include establishing the governance charter and membership of the Roundtables; organizing semi-annual evidence-to-investment dialogues; aligning indicators and financial triggers with national and international frameworks; publishing annual Adaptation-Economy Reports and public communiqués; and adopting procurement and credit preferences tied to MRV-verified results.

#### **Output 4.3. Domestic knowledge sharing and upscaling mechanisms operationalized.**

132. This output ensures that innovations, best practices, and lessons generated by the project are systematically shared and replicated across Mongolia. While Output 4.4 focuses on global learning, this output targets national upscaling—enabling non-project soums and aimags to adopt climate-smart rangeland management approaches without direct project support.

133. The project will establish a structured program of national conferences, regional workshops, and peer-learning exchanges. An annual National Climate-Smart Pastoralism Conference will convene policymakers, local government representatives, herders, HHA leaders, private sector actors, researchers, and development partners to share results, discuss challenges, and identify opportunities for replication. Regional workshops in each target aimag will facilitate experience sharing between project and non-project soums, with practical demonstrations of rangeland monitoring methods, RUA implementation, and climate-smart livestock practices.

134. Herder-to-herder learning exchanges will enable HHA leaders and members from target soums to share experiences directly with herders in other areas. These exchanges will build on the peer advisory capacity developed under Output 2.3, with trained HHA leaders serving as ambassadors for climate-smart practices. The Herder Development Centres piloted under Output 2.3 will serve as hubs for hosting visiting delegations and

organizing local learning events.

135. The project will develop multimedia content to reach herders and stakeholders who cannot attend in-person events. Video documentation of best practices—covering rotational grazing, rangeland restoration, climate-smart livestock management, and HHA governance—will be produced and disseminated through social media, television, and the digital platforms established under Output 2.3. Short-format content suitable for mobile viewing will target youth and herders in remote areas. Radio programming will complement digital content to reach households without reliable internet access.

136. Technical guidelines and training materials developed under Components 1, 2, and 3 will be compiled into a Climate-Smart Pastoralism Resource Kit for use by aimag and soum governments, extension services, and HHAs seeking to replicate project approaches. The Resource Kit will be available in print and digital formats and will be updated annually based on MRV findings and user feedbacks.

137. The project will work with MOFALI and the National Agency for Meteorology and Environmental Monitoring (NAMEM) to integrate climate-smart pastoralism content into existing information channels, including livestock management recommendations published by MOFALI, early-warning communications, and agricultural extension bulletins disseminated by the Research and Development Centre for Food, Agriculture and Light Industry under MOFALI. This mainstreaming ensures that project knowledge reaches herders through trusted, established channels.

138. Collaboration with academic and research institutions will support documentation and analysis of project innovations. The project will engage Mongolian universities and research institutes to conduct applied research on rangeland restoration, carrying capacity assessment, and climate-smart livestock practices, building a domestic knowledge base that outlasts the project period.

#### **Output 4.4. Global learning and partnerships advanced.**

139. This output transforms Mongolia's adaptation experience into a global public good while drawing new knowledge and investment back into national practice. Mongolia's integrated model - legally enforceable rangeland governance, conditional field investments, market-based incentives, and a national evidence platform - has deep relevance for dryland economies worldwide. This output curates, shares, and leverages the lessons, data, and tools generated under Components 1–4 to strengthen international cooperation, promote investment in climate-smart pastoral value chains, and position Mongolia as a regional leader in regenerative livestock management.

140. The project will engage actively with global learning platforms through partnerships with the Adaptation Fund, UNDP and UNIDO networks, the GEF, and the UNCCD's Land Degradation Neutrality knowledge exchange. Case studies and policy briefs will document how verified adaptation reduces losses, increases productivity, and generates economic returns while protecting biodiversity and carbon stocks. These materials will feed directly into Adaptation Fund knowledge products and global dialogues on financing adaptation through value-chain transformation. International visibility will attract buyers and impact investors seeking verified regenerative supply chains, particularly in sustainable cashmere, wool, meat, and leather. Mongolia will collaborate with global sustainable-fibre alliances, regenerative agriculture platforms, and climate-finance forums to showcase certified climate-smart pastoralism products and traceability innovations established under Component 3. Participation in international trade fairs and buyer events supported under Output 3.3 will be coordinated with global learning activities to maximize Mongolia's visibility as a source of verified sustainable livestock products.

141. Output 4.5 will facilitate peer-to-peer exchange across dryland countries in Central and East Asia, promoting technical cooperation on impact-based forecasting, ILMP/ALMP and RUA integration, and National Rangeland MRV system design. Study tours and virtual exchanges will enable Mongolian experts, herder representatives, and policymakers to share experiences on adaptive rangeland governance, participatory monitoring, and private-sector engagement. The same partnerships will allow Mongolia to incorporate global innovations—such as new data tools, nature-based solutions methodologies, or financing mechanisms—into the continuous evolution of its national system.

142. International visibility and peer exchange reinforce domestic incentives and crowd in buyers and capital for regenerative supply chains. By demonstrating that verified adaptation generates measurable returns for producers, investors, and ecosystems, Mongolia strengthens its credibility as a global reference point for climate-resilient pastoral economies. The partnerships built under this output will sustain learning, attract new finance, and keep Mongolia's adaptation economy aligned with emerging best practices in sustainable trade, biodiversity

stewardship, and carbon accounting.

## **B. Economic, Social and Environmental Benefits**

**Describe how the project/programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project/programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.**

143. *Selection of beneficiaries.* The proposed project will generate significant and sustained economic, social, and environmental benefits for 4000 pastoral households - Mongolia's most climate-vulnerable populations - dependent on increasingly fragile rangeland ecosystems and exposed to intensifying climate shocks. Within the herder communities in Dundgovi and Sukhbaatar, the project will target the most vulnerable herders through a systematic, participatory, selection process aligned with the Adaptation Fund's principles of equity and vulnerability-based targeting.

144. During the project inception phase, Community Vulnerability Mapping will identify priority areas based on:

- i. Rangeland degradation: areas with severely degraded and overgrazed rangelands, identified through rangeland monitoring data and land desertification assessments;
- ii. Dzud vulnerability: areas with substantial livestock losses during past dzud events, using climate risk data and historical records;
- iii. Socio-economic vulnerability: prevalence of herder households with fewer than 200 head of livestock and households with no income source other than livestock herding and state-financed social benefits.

145. Among vulnerable communities identified through the mapping exercise, final selection of direct beneficiaries will involve consultations with soum governments, Herder Household Associations, and cooperatives. The selected 4000 herder households will include:

- at least 40 percent participation of women;
- at least 25 percent participation of young herders under age 35; and
- at least 30 percent combined share of women-headed households, households with limited workforce, households headed by persons with disabilities, and youth-led households.

146. *Economic benefits.* The project will deliver tangible economic benefits to vulnerable herder communities in Dundgovi and Sukhbaatar aimags. Rangeland use aligned with carrying capacity, combined with restoration measures and climate-smart livestock management extension services, will enhance livestock health and productivity and improve product quality, thereby increasing herder profitability. Reduced climate vulnerability and improved dzud preparedness will significantly lower livestock mortality. By linking verified compliance with rangeland-use rules to access to premium markets for fibre, hides and skins, and meat, herders will capture higher returns per animal. The project will also increase herders' access to both project-supported short-term funding and long-term financing through soum-level Herder Development Funds for climate-smart rangeland and livestock management.

147. At the enterprise level, small and medium processing firms will benefit from improved supply-chain traceability, certification, and cleaner-production technologies that open new domestic and export markets. These combined interventions will increase rural employment, reduce indebtedness, and diversify the pastoral economy in the most climate-exposed soums. At national scale, improved product quality and environmental performance will enhance Mongolia's competitiveness in high-value global markets, anchoring the livestock sector in a low-emission, climate-resilient growth path.

148. *Social benefits.* The project will produce broad social gains through empowerment, participation, and equitable access to opportunity. Pastoral communities—particularly women, youth, and poor households—will have an institutional voice in decision-making through formal representation in Herder Household Associations. Women and youth will receive targeted training and employment pathways in grading, quality assurance, animal-health services, and value-added processing, ensuring that they participate in and benefit from the shift toward climate-smart production. Community scorecards, participatory monitoring, and grievance-redress mechanisms will strengthen transparency, social accountability, and trust between herders and local authorities.

149. The project will support leadership development for women and youth within Herder Household associations and cooperatives, ensuring at least 40 percent participation in governance structures. Consistent with

the Law on Promotion of Gender Equality and the Cross-Sectoral Strategic Plan for Promoting Gender Equality (2022–2031), gender sensitivity and youth inclusion will be mainstreamed throughout project implementation. Measures include scheduling and formatting training events to accommodate women herders' time constraints and mobility patterns, prioritizing youth engagement in digital literacy activities, and tailoring extension content to address specific challenges faced by women and young herders. These measures will strengthen social cohesion, expand livelihood options, enhance community resilience to climate shocks, and reduce out-migration of rural youth and herder women.

150. ***Environmental benefits.*** At the ecosystem level, the project will deliver measurable restoration of degraded rangelands, rehabilitation of biodiversity corridors, and protection of critical water resources. Resilience threshold mapping will underpin grazing plans and restoration activities to ensure rangeland use remains within ecological limits. Nature-based solutions for water management will protect natural springs, riparian rangelands, and wetlands, improve infiltration, soil moisture retention, and drought resilience while maintaining downstream water quality. By integrating biodiversity objectives into ILMPs/ALMPs and RUAs, the project will safeguard migratory routes for iconic wildlife such as gazelle and khulan, and will reduce desertification, soil erosion, and dust-storm frequency that affect both rural and urban populations.

151. Cleaner-production upgrades in the meat and leather sectors will reduce water use, chemical pollution, and greenhouse-gas emissions, contributing to circular economy and environmental-quality targets in Mongolia's Vision-2050 long-term development policy. At national scale, the project will advance progress toward NDC 3.0 commitments while increasing soil-carbon storage and enhancing the country's reputation for sustainable livestock production and processing.

152. ***Safeguards and risk management.*** All activities will comply with the Adaptation Fund's Environmental and Social Policy and Gender Policy as well as national environmental and labour standards. The project will avoid or minimize negative impacts through careful site selection and participatory planning. No activity will expand grazing into fragile or high-conservation-value ecosystems. Water-related infrastructure will be designed using hydrological and ecological assessments to ensure that extraction or diversion does not exceed sustainable limits. All cleaner-production investments will undergo environmental screening and adopt pollution-control technologies consistent with MECC guidelines.

153. A grievance-redress mechanism and free, prior, and informed consent process will protect community rights. Independent audits, open MRV dashboards, and public scorecards will provide transparency and accountability. Potential gender or social inequities will be addressed through the Gender Action Plan and ongoing monitoring of gender-disaggregated indicators. Detailed Environmental and Social Management Plan, Gender Action Plan, and Stakeholder Engagement Plan will be prepared during the full proposal stage to ensure that project activities avoid or mitigate negative impacts and deliver inclusive, measurable resilience outcomes.

### **C. Describe or provide an analysis of the cost-effectiveness of the proposed project/programme.**

154. The proposed project offers a cost-effective approach to climate resilience by replacing fragmented interventions with an integrated system linking governance, restoration, and market incentives. Concentrating \$15 million in two rangeland clusters (12 soums, ~1M ha) ensures measurable ecological recovery, income stability, and policy reform while minimizing transaction costs through existing legal instruments and data systems (RUAs, ILMPs/ALMPs, livestock tax, national monitoring). By leveraging established institutions and prior donor investments (SLP, Green Gold, PMPMD), the project maximizes returns and creates a scalable national model.

155. Unlike costly post-dzud relief, the project invests in prevention through enforceable governance, adaptive management, and market transformation—far cheaper and more durable than emergency aid. Since 1999, dzud events have killed 40M animals, erasing billions in value. Evidence from the World Bank shows resilient practices can prevent losses entirely and boost productivity by 36%. Each avoided dzud saves hundreds of millions, far exceeding the project's budget, proving preventive governance and restoration deliver superior cost-efficiency.

156. Component Component designs minimize costs by sharing enforcement and monitoring across soum governments, herder household associations, and agencies, using existing revenue streams. Component 1 integrates ILMPs, ALMPs, RUAs, and fiscal tools to eliminate reliance on external grants. Component 2 applies community-based restoration and adaptive grazing—cheaper than engineering or emergency aid. Component 3 leverages private investment through compliance-linked market access, multiplying public finance. Component 4 consolidates data into one MRV Platform, avoiding duplication and enabling evidence-based planning and

reporting.

157. Cost-effectiveness is further enhanced by a market-based architecture that mobilizes private co-finance and converts time-bound grants into recurring, self-financing systems. By aligning climate-smart certification and traceability with ILMP/ALMP and RUA compliance, the project channels existing private incentives toward sustainable land management at no additional public cost. The project ties finance directly to performance—using fiscal mechanisms such as livestock tax reinvestment and performance-based grants—ensuring that public expenditures generate measurable environmental and economic outcomes. Herders who adopt traceable, regenerative practices access premium offtake contracts and price premiums through arrangements with the White Gold Initiative and industry associations, while performance-based grants bridge short-term adjustment costs until market rewards sustain compliance without subsidies. Cleaner, certified processing in meat, leather and wool attracts impact investment and trade-finance facilities, multiplying Adaptation Fund resources.

158. Long-term financial sustainability is secured by embedding MRV operations in soum subscriptions and service fees, institutionalizing livestock tax and performance-based grant systems through budget circulars and by-laws, and transitioning certification governance to the Mongolian Agency for Standardization and Metrology (MASM) and industry bodies. Mobile applications and community scorecards make compliance largely self-enforcing, while transparent data dashboards reduce the need for expensive third-party audits. Community labour, co-financing, and public-private partnerships for processing upgrades further reduce net costs to the project.

159. In sum, each project dollar generates multiple returns—reducing livestock losses, restoring degraded land, strengthening biodiversity and water regulation, increasing rural incomes, and expanding fiscal revenues through higher-value exports. The integrated, law-anchored, and market-driven design shifts Mongolia's pastoral sector from a high-risk, low-return model to a resilient, self-sustaining, and globally competitive economy. At the full proposal stage, a comprehensive cost-benefit and alternatives analysis will be undertaken to quantify these efficiencies with supporting data and to demonstrate that the project represents the most cost-effective pathway for building resilience in Mongolia's rangeland systems.

**D. Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.**

160. The project directly contributes to the Objectives 6.2 (*Rehabilitate natural resources, reduce scarcity, create pre-productive resources and pass on to future generations*), 6.4 (*Contribute to international efforts to mitigate climate change by developing a low carbon, productive and inclusive green economy*) and 8.3 (*Develop agriculture into an environmentally sustainable, climate-resilient, risk-tolerant, socially inclusive, productive and stable leading economic sector*) of the “Vision-2050 Long-term Development Policy of Mongolia”, which builds the basis for all national and sub-national policies and development strategies.

161. The National Adaptation Plan (NAP) 2024-2030 includes 99 climate change adaptation measures structured in 15 targets. The proposed project directly relates to 23 measures under 8 targets.

**Direct alignment of the project with the National Adaptation Plan of Mongolia**

Project outcomes	National Adaptation Plan (2024-2030)
Outcome 1: A coherent spatial, legal, and fiscal framework enables herder household associations and local governments to strategically restore rangeland ecosystems and strengthen climate resilience.	Target 1. Improve the policy, legal, structural, and organizational environment for the climate change adaptation of environmental, social, and economic sectors - Action 1.9. Target 2. Strengthen the knowledge and capacity of stakeholders of the environmental, social, and economic sectors on climate change adaptation, and provide information by expanding research activities - Action 2.5. Target 4. Reduce desertification, land degradation and permafrost loss - Action 4.4. Target 10. Develop a productive livestock sector that is compatible with pasture and water resources, based on advanced technologies for adaptation to climate change, and resilient to challenges and risks - Action 10.1. Target 15. Welfare, protection and insurance preventive system is established to reduce the vulnerability through identification and building capacity of vulnerable to climate change impact groups and increasing their income - Action 15.3.
Outcome 2: Herders and local authorities adopt climate-resilient grazing	Target 1. Improve the policy, legal, structural, and organizational environment for the climate change adaptation of environmental, social, and economic sectors - Action 1.6. Target 2. Strengthen the knowledge and capacity of stakeholders of the environmental,

<p>and livestock management practices.</p>	<p>social, and economic sectors on climate change adaptation, and provide information by expanding research activities - Actions 2.4 and 2.5.                  Target 4. Reduce desertification, land degradation and permafrost loss - Actions 4.3 and 4.4.                  Target 8. Reduce the climate change-induced and ever intensifying disaster risks and improve resilience capacity - Actions 8.3 and 8.4.                  Target 9. Establish multi-hazards impact based early warning systems, thus enabling immediate responses - Action 9.4.                  Target 10. Develop a productive livestock sector that is compatible with pasture and water resources, based on advanced technologies for adaptation to climate change, and resilient to challenges and risks - Actions 10.2; 10.3; 10.4; 10.5.                  Target 11. Improve the quality and economic turnover of livestock herds, increase meat exports and reduce pasture loads and livestock farming costs - Action 11.2.</p>
<p>Outcome 3: Herder resilience and agribusiness continuity strengthened as profitable livestock value chains incentivize and reward the adoption of climate-smart and regenerative rangeland-management practices.</p>	<p>Target 11. Improve the quality and economic turnover of livestock herds, increase meat exports and reduce pasture loads and livestock farming costs - Actions 11.1 and 11.4                  15. Welfare, protection and insurance preventive system is established to reduce the vulnerability through identification and building capacity of vulnerable to climate change impact groups and increasing their income - Action 15.4.</p>
<p>Outcome 4: Holistic knowledge and learning systems that improve information sharing, amplify best practices, and expand climate-smart, regenerative livestock-sector innovation and profitability.</p>	<p>Target 1. Improve the policy, legal, structural, and organizational environment for the climate change adaptation of environmental, social, and economic sectors - Action 1.9.                  Target 2. Strengthen the knowledge and capacity of stakeholders of the environmental, social, and economic sectors on climate change adaptation, and provide information by expanding research activities - Action 2.10.                  Target 9. Establish multi-hazards impact based early warning systems, thus enabling immediate responses - Action 9.3.</p>

162. The project contributes to all four adaptation targets that the NDC 3.0 has set in the livestock sector: (i) reduce rangeland pressure by raising young livestock using advanced methods and technologies, developing bio-secure compartment farming and supplying meat to target markets, (ii) improve livestock water and feed supply, quality and management to strengthen resilience against natural risks, (iii) introduce smart technologies in livestock production and rangeland use, (iv) establish sustainable and rational collaborative management practices for rangelands and expand the scope of rangeland restoration. Furthermore, by reducing rangeland degradation, the project will enhance carbon sequestration – contributing to the NDC target of reducing GHG emissions by 52.8% by 2030.

163. The project directly aligns with Objective 1.2 (Establishment of a disaster risk assessment system and database) and Objective 1.3 (Enhancing preparedness for disaster protection and increasing human resource capacity and equipment) of the “Second-phase (2021-2025) action plan of the medium-term strategy for implementation of the Sendai Framework for disaster risk reduction in Mongolia”.

164. The project is aligned with the priorities of government programs in the livestock sector. In particular, the project directly relates to the measures 3g and 3d of the White Gold Initiative to promote environmentally sound, value-added and innovative production, compliance-certification, green financing and dissemination of climate-resilient practices across livestock value chains; supports the goal of the New Cooperative movement to “mitigate possible disasters caused by climate change in the livestock sector”, and promoting climate-smart food production practices under the Food Revolution initiative. The project contributes to the National Biodiversity Programme (2020–2030).

165. By strengthening participatory and sustainable rangeland governance, enhancing the capacity of herder communities and supporting institutions to reduce climate vulnerability and increase resilience, and facilitating reinvestment of the livestock tax into sustainable rangeland and livestock management, the project translates Mongolia’s recent reforms including the Livestock Tax Law (2020), the Law on Herder Household Associations (2024), the Law on Herders and the 2024 amendment of the Land Law into practical, enforceable, and financially sustained adaptation systems.

166. Consistent with the Law on Promotion of Gender Equality and the Cross-Sectoral Strategic Plan for Promoting Gender Equality (2022–2031), gender sensitivity and youth inclusion will be mainstreamed throughout project implementation. Measures include scheduling and formatting training events to accommodate women herders' time constraints and mobility patterns, prioritizing youth engagement in digital literacy activities, and tailoring extension content to address specific challenges faced by women and young herders.

**E. Describe how the project/programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.**

167. The project will comply with Mongolia's national technical standards and the Adaptation Fund's Environmental and Social Policy (ESP). All activities were developed through national consultation and will be implemented in accordance with relevant regulations, technical standards (MNS), and international norms. The project aligns with AF principles including protection of marginalized groups, gender equity, and environmental sustainability. Relevant technical standards and regulations are organized thematically below:

- **Environmental assessment:** All infrastructure (wells, water-point rehabilitation, fodder storage, processing facility upgrades) will undergo environmental screening under the Law on Environmental Impact Assessment (2012, amended 2021), with general or detailed EIAs approved by MECC as required;
- **Land and rangeland management:** Rangeland Use Agreements will comply with Land Law (2002, amended 2024) and cadastral standards issued by ALAMGaC. All RUAs will be spatially mapped and aligned with soum-level ALMPs;
- **Water resources:** Water-point restoration will follow the Law on Water (2012, amended 2023) including basin planning, licensing, and protection-zone requirements;
- **Livestock and animal health:** Veterinary activities will comply with the Law on Animal Health (2017), MOFALI regulations, and relevant MNS standards for livestock management and disease control;
- **Livestock product processing:** Processing activities will comply with relevant national standards (MNS), including MNS 6891:2020 (Responsible Nomad Code of Practice), MNS 6926:2021 (Sustainable Textile Production), and product-specific standards for meat, wool, cashmere, and leather. International standards including HACCP, ISO 9001, ISO 14001, and Leather Working Group protocols will be applied as appropriate. MASM will oversee alignment of the climate-smart pastoralism certification with national and export market requirements;
- **Occupational safety:** Project activities will comply with the Labour Law (2021) and Law on Occupational Safety and Hygiene (2008, amended 2023);
- **Waste management:** Construction and operational waste will be managed in accordance with the Law on Waste (2017, amended 2023).

168. Consistent with the AF ESP, the project has undergone initial safeguards screening and is expected to deliver predominantly positive environmental and social impacts, with moderate risk. A comprehensive Environmental and Social Management Plan (ESMP) will be prepared during full proposal development, incorporating screening criteria, mitigation measures, monitoring indicators, grievance mechanisms, FPIC, and gender-responsive participation. The project will not finance activities causing involuntary resettlement, natural-habitat conversion, or harm to Indigenous Peoples, cultural heritage, or critical biodiversity.

**F. Describe if there is duplication of project/programme with other funding sources, if any.**

169. The proposed project has been designed to complement and build upon existing investments in Mongolia's pastoral sector while avoiding duplication. The table below summarizes related projects and programmes, identifies synergies to leverage, and explains the unique value added by this project.

Project / Donor / Period	Geographic Focus	Synergies (What to Leverage)	Non-Duplication (Unique Value Added)
Livestock Commercialization Project(LCP) World Bank \$30M 2020–2025	12 aimags including Dundgovi (overlap)	Build on animal health systems, traceability infrastructure, and Solutions Marketplace platforms established by LCP.	LCP focuses on commercialization infrastructure; this project adds climate-smart certification, enforceable RUAs and performance-based fiscal and market incentives not addressed by LCP.

<p>Aimag and Soum Green Development Investment Programme (ASDIP) ADB/GCF/EIB \$735M 2025–2035 ,</p>	<p>Tranche 1 in Bayan-Ulgii, Khovd, Uws, aimags (no overlap)</p>	<p>Align approaches on rangeland management and livestock value chains; share lessons learned on climate adaptation.</p>	<p>No geographic overlap with Tranche 1; ASDIP focuses on western aimags while this project targets Dundgovi and Sukhbaatar.</p>
<p>Virtual Cooperatives Project World Bank \$3.5M 2024–ongoing</p>	<p>Nationwide</p>	<p>Leverage digital learning platforms developed under Virtual Cooperatives.</p>	<p>Virtual Cooperatives provides digital infrastructure; this project adds climate-smart content, MRV integration, and certification functionality.</p>
<p>Improving Adaptive Capacity and Risk Management of Rural Communities (ADAPT) UNDP/GCF \$23.1M; 2021–2028</p>	<p>4 aimags including Sukhbaatar (overlap)</p>	<p>Coordinate climate forecasting integration, align ecosystem-based approaches, share market access innovations; participate in joint coordination mechanisms.</p>	<p>ADAPT focuses on climate-informed planning and ecosystem-based approaches; this project adds enforceable rangeland governance, digital MRV, market-linked compliance, and certification systems. Geographic targeting within Sukhbaatar aimag will prioritize non-ADAPT soums.</p>
<p>Promoting Dryland Sustainable Landscapes and Biodiversity Conservation in the Eastern Steppe of Mongolia FAO/WWF/GEF \$5.3M; 2020–2025</p>	<p>Sukhbaatar (overlap)</p>	<p>Build on the project’s biodiversity monitoring and landscape approaches; coordinate rangeland assessment methodologies.</p>	<p>The GEF/FAO/WWF project focuses on dryland biodiversity and landscape connectivity; this project adds rangeland governance, certification, and market linkages, and targets both the eastern steppe and southern desert steppe regions.</p>
<p>Project for Pasture Management and Market Development (PMPMD)IFAD \$22M+ Phase 2: 2018–2024; Phase 3: 2026-?</p>	<p>6 aimags including both Dundgovi and Sukhbaatar (Phase 2)</p>	<p>Build on herder group and cooperative structures, and market linkages established by PMPMD; coordinate with Phase 3 planning.</p>	<p>PMPMD focuses on diversification and market access; this project adds climate-smart certification, enforceable RUAs, digital MRV, and performance-based incentives.</p>
<p>UNIDO Programmes (SECIM, EDP, GCIP) UNIDO/various Various/ongoing</p>	<p>Nationwide</p>	<p>Leverage cleaner production expertise, processing technology upgrades, certification schemes and SME support systems; UNIDO as executing partner of this project.</p>	<p>UNIDO provides industrial processing expertise; this project integrates these with pastoral value chains and adds climate-smart certification requirements.</p>
<p>Sustainable Livelihoods Project (SLP) Phase I–III World Bank Completed 2023</p>	<p>Nationwide</p>	<p>Build on Local Development Fund infrastructure, local governance mechanisms and community participation capacity established by SLP.</p>	<p>SLP completed; this project builds on its foundations while adding soum-level Herder Development Funds, digital MRV, enforceable RUAs, market-linked compliance mechanisms and climate-resilient value chain development.</p>
<p>Green Gold Project SDC approx. \$30M Completed 2021</p>	<p>18 aimags including both Dundgovi and Sukhbaatar</p>	<p>Build on PUG formation expertise, RUAs, rangeland monitoring approaches piloted and results of sustainable rangeland use demonstrated by Green Gold.</p>	<p>This project operationalizes and enforces RUAs through Herder Household Associations, digital MRV, fiscal and market incentives, and links to dzud protection and export-oriented value chain development.</p>

170. **Coordination mechanisms:** The project will coordinate with all listed initiatives through the Ministry of Environment and Climate Change (Designated Authority), Ministry of Food, Agriculture and Light Industry, project implementation units of active projects, and aimag-level authorities. A Climate-Smart Pastoralism Working Group will serve as the primary coordination platform.

171. **Unique Project Value:** This project integrates fragmented past tools into a coherent system through: (i) enforceable RUAs with legal backing; (ii) digital MRV linking rangeland monitoring to compliance verification; (iii) climate-smart certification creating market incentives for sustainable practices; and (iv) performance-based fiscal incentives through Herder Development Funds.

**G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.**

172. The project embeds learning and knowledge management at its core through Component 4, building on two decades of experience from the World Bank's Sustainable Livelihoods Programme, SDC's Green Gold, UNDP's Ecosystem-based Adaptation projects, FAO/GEF's Dryland Landscape project, IFAD's PMPMD, and the GCF-financed ADAPT programme. Earlier initiatives generated technical innovations—RUAs, carrying capacity thresholds, performance-based grants, participatory planning, and value-chain pilots - but impacts were often localized due to weak incentives and fragmented scale-up pathways. This project addresses these gaps by integrating learning, evaluation, and replication into national systems through a National Rangeland MRV Platform that channels verified evidence to local governments, MECC, ALAMGaC, IRIMHE, private-sector actors, and producer associations. Knowledge will flow horizontally - herder-to-herder, soum-to-soum, aimag-to-aimag - through comparative performance scorecards, peer exchanges, and Herder Development Centres demonstrating the profitability of regenerative grazing within ecological thresholds. It will also flow vertically, with verified field data informing policy, budgets, certification standards, procurement decisions, and restoration finance.

173. The project will systematically capture and analyse lessons through mechanisms aligned with the Adaptation Fund's Knowledge Management Framework. A Climate-Smart Pastoralism Working Group—modelled on the White Gold Platform and co-chaired by the Office of the President and MOFALI, with UNDP and UNIDO providing secretariat support—will convene ministries, local authorities, Herder Household Associations, processors, buyers, banks, and development partners to translate MRV data into policy and market adjustments. Annual Resilience and Profitability Reports will quantify returns from regenerative grazing, rangeland restoration, and compliance-linked market incentives—documenting avoided dzud losses, productivity gains, premium revenues, and ecosystem service values. Case studies, policy briefs, and technical guidelines will be compiled into a Climate-Smart Pastoralism Resource Kit for use by aimag and soum governments, extension services, and HHAs seeking to replicate project approaches. Midterm and terminal evaluations, combined with participatory field assessments, will ensure continuous adaptive management.

Knowledge dissemination will employ blended digital and traditional channels. A Climate-Smart Pastoralism Working Group will translate MRV insights into action, supported by annual Resilience and Profitability Reports, resource kits, and evaluations. Knowledge will be shared through conferences, workshops, digital dashboards, media, and e-learning platforms, and institutionalized via partnerships with universities and global networks. Mongolia will engage in South-South exchanges and international trade fairs, positioning itself as a regional leader in regenerative pastoralism and linking verified ecological data to global procurement decisions.

**H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.**

174. The development of the concept note was grounded in a robust, inclusive, and multi-stakeholder consultative process, consistent with national policy-making practices and Adaptation Fund requirements. In September 2025, a dedicated mission of lead consultant was conducted in Mongolia. The mission's primary objective was to engage a broad spectrum of stakeholders to inform and finalize the project concept. In-person and online meetings and phone interviews by UNDP and the local consultant with stakeholders not covered by the initial mission between October and November 2025 concluded the consultative process at the concept note development stage to ensure that the project concept is responsive to the needs, priorities, and knowledge of all relevant stakeholders, and is well-aligned with national strategies, legal frameworks and local priorities

175. Meetings with government institutions ensured alignment with national priorities and ongoing legal reforms. Consultations with research institutions and sectoral and technical experts facilitated integration of

scientific evidence and climate-informed planning into the project design. Site visits and discussions with private-sector and value chain actors ensured that the perspectives of producers, processors and industry associations are reflected in the project concept. Civil-society community organizations channelled grassroots voices and local knowledge. Provincial governments and agencies articulated region-specific adaptation needs and priorities through online meetings. Consultations with donors and development partners ensured complementarity and non-duplication.

176. Contents of the stakeholder consultations covered a wide range of technical issues central to the project design. Climate adaptation priorities and dzud preparedness were discussed extensively with government institutions, research institutes, and herder organizations, drawing on lessons from the 2023–2024 dzud. Rangeland degradation and carrying capacity thresholds were examined with ALAMGaC, IRIMHE, and the Institute of Geography and Geo-Ecology, informing the approach to ecological monitoring and adaptive grazing regimes. The legal and institutional framework for Rangeland Use Agreements, Integrated Land Management Plans, and the recently enacted Law on Herder Household Associations was reviewed with MOFALI, MECC, and aimag authorities to ensure alignment with ongoing reforms. Discussions with private-sector actors—including the Sustainable Fibre Alliance, Mongolian Meat Association, and leather and meat processors—addressed value chain development, certification requirements, traceability systems, and market access for climate-smart products. The design of fiscal mechanisms, including the livestock tax and performance-based grants channelled through Herder Development Funds, was informed by consultations with the MED and soum governments. Technical requirements for the MRV Platform were discussed with NAMEM, IRIMHE, and ongoing projects such as the Livestock Commercialization Project and ADAPT.

177. Consultations gave particular attention to the needs and priorities of vulnerable groups, consistent with the Environmental and Social Policy and Gender Policy of the Adaptation Fund. Discussions with the Social Policy Departments in Dundgovi and Sukhbaatar aimags provided data and insights on the specific circumstances of women-headed households, poor households, people with disabilities, and youth. These departments, which coordinate social protection policies and maintain statistics on vulnerable populations, informed the project's targeting criteria and benefit-sharing arrangements. Consultations with women herders and leaders of herder cooperatives highlighted time constraints, mobility patterns, and barriers to participation in training and governance structures, shaping the project's gender-responsive design. Youth representatives raised concerns about limited employment opportunities, access to digital technologies, and pathways into the livestock sector. MLSP and civil society organizations such as NAMAC and the Association for Sustainable Rural Development contributed perspectives on inclusive participation and safeguards. These inputs informed the commitment to at least 40 percent women's participation, 30 percent youth engagement, and targeted support for vulnerable households, as well as the preparation of a Gender Action Plan and Stakeholder Engagement Plan at the full proposal stage.

178. The stakeholders consulted include:

- Ministries and government agencies: Ministry of Food, Agriculture and Light Industry (MOFALI), Ministry of Environment and Climate Change (MECC), Ministry of Economy and Development (MED), and Ministry of Labour and Social Protection (MLSP), the Water Authority, Agency for Land Administration and Management, Geodesy and Cartography (ALAMGaC), National Agency for Meteorology and Environmental Monitoring (NAMEM), Research and Development Centre for Food, Agriculture and Light Industry (RDC);
- Universities and research institutes: Mongolian University of Life Sciences (MULS), National University of Mongolia (NUM), Institute of Geography and Geo-Ecology, Information and Research Institute of Meteorology, Hydrology and Environment (IRIMHE), Research Institute for Animal Husbandry (RIAH), Research Institute for Light Industry, and Centre for Policy Research (CPA);
- Private-sector and value chain actors: Mongolian Association of Leather Industry (MALI), Mongolian Meat Association (MMA), Sustainable Fibre Alliance (SFA), Mongolian National Chamber of Commerce and Industry (MNCCI), and meat and leather processing factories;
- Civil society and community organizations: National Association of Mongolian Agricultural Cooperatives (NAMAC), National Federation of Pasture User Groups (MNFPUG), Association for Sustainable Rural Development;
- Development partners, donors and ongoing projects: FAO, GIZ, TNC, the World Bank, ADB, Improving Adaptive Capacity and Risk Management of Rural Communities (UNDP/GCF); Livestock Commercialization Project (MOFALI/World Bank), Agricultural Sector Development and Investment Programme (MED/ADB/GCF/EIB), Virtual Cooperatives Project (MOFALI/World Bank); Promoting Dryland Sustainable Landscapes and Biodiversity Conservation in the Eastern Steppe of Mongolia (FAO-WWF/GEF), the EU International Trade Development in Mongolia Project;

- Aimag and soum governments: Department of Food and Agriculture and Social Policy Departments of the Aimag Governor’s Offices in Dundgovi and Sukhbaatar aimags, and Soum Governments in 3 soums of each aimags;
- Herders including women and youth in Dundgovi and Sukhbaatar aimags: Leaders of Federations of PUGs in 4 soums of Dundgovi and 4 soums of Sukhbaatar aimags (including 5 women), and leaders of 5 herder cooperatives including 3 women, and 22 PUG members from these 8 soums including 15 women herders, and 8 young herders under the age of 35.

## **I. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.**

179. **Business-as-usual scenario:** Without the Adaptation Fund intervention, Mongolia's rangeland system will continue on an unsustainable trajectory driven by open-access grazing, market distortions, and worsening climate stress. Despite significant investments from bilateral and multilateral partners, most initiatives have remained fragmented - focusing on technical or infrastructural improvements rather than systemic adaptation. Under this scenario, rangeland degradation will deepen (65 percent of rangelands are already degraded), vegetative cover will continue to decline, and soil-water retention capacity will fall. Recurrent droughts and dzud will result in escalating livestock losses - adding to 40 million animals lost since 1999. Rural poverty will worsen and government expenditure on emergency relief rather than prevention will increase. The livestock tax and rangeland-use regulations, while legally enacted, will remain weakly enforced, and herders - lacking adaptive incentives—will maintain large herds as insurance against loss, thereby perpetuating ecological decline. Without a national framework linking land governance, fiscal incentives, and market rewards, these patterns will persist, leaving herder livelihoods and national food security increasingly vulnerable to climate shocks.

180. **Adaptation Fund additionality and rationale.** Adaptation Fund resources are required precisely because climate vulnerability in Mongolia's pastoral economy arises from interconnected governance, ecological, and market failures that normal development finance cannot address. The project's additionality lies in establishing a self-reinforcing adaptation system that connects legal authority, fiscal instruments, field-level practice, and market incentives. It builds on but goes far beyond ongoing rural development initiatives by embedding adaptation objectives directly into law, planning, and finance. The AF investment creates the critical missing links that transform individual project pilots into a coherent national system for climate-resilient rangeland management.

181. The project enhances the climate resilience of rural communities by embedding adaptation into Mongolia's existing policy architecture—the 2024 Law on Herder Household Associations, the Land Law, the Water Law, the National Adaptation Plan (2024–2030), and the Nationally Determined Contributions (NDC 3.0). It complements and scales the foundations created by FAO/GEF's “Promoting Dryland Sustainable Landscapes and Biodiversity Conservation in the Eastern Steppe of Mongolia” project, the GCF-financed ADAPT programme, UNIDO's SECIM and EDP initiatives, and the World Bank and IFAD livestock projects. Those initiatives generated valuable tools, capacity, and pilot results, but none established a national mechanism that rewards verified adaptation performance through fiscal transfers or market premiums. The AF project provides that mechanism, aligning ecological stewardship with tangible economic incentives.

182. **Adaptation logic and impact pathways.** The project’s theory of change follows four integrated adaptation pathways:

- Organize and enable: ILMPs, ALMPs and RUAs establish spatial clarity and legal accountability, aligning the Law on Herder Household Associations, Land Law, and Water Law into a coherent governance framework.
- Equip and adapt: Herders and local governments gain tools and capacity—through vocational programmes, extension services, veterinary support, digital learning, and early-warning systems—to manage livestock and rangelands within ecological thresholds. SMEs upgrade operations via cleaner manufacturing technology and standards.
- Reward and sustain: Verified compliance under Rangeland Use Agreements unlocks access to extension services, premium markets, and performance-based fiscal transfers, ensuring that adaptation generates direct financial returns.
- Measure and amplify: A national Rangeland MRV Platform quantifies resilience and profitability gains, guiding future investments, and informing national and international reporting.

183. Together, these pathways reduce vulnerability to drought and dzud, stabilize household income, create employment, improve livestock productivity, and restore degraded ecosystems—turning reactive coping strategies into proactive, data-driven adaptation.

184. **Full-cost of adaptation reasoning.** The requested Adaptation Fund investment of USD 15 million represents the incremental cost required to transform Mongolia's livestock sector from a conventional, production-oriented system into one that is climate-resilient, incentive-driven, and ecologically sustainable. Each component delivers a distinct adaptation function:

- Component 1: Climate-Resilient Rangeland Governance and Stewardship (USD 2.45 million): Finances enhanced analytical capacity for rangeland monitoring and carrying capacity assessment, strengthened planning and regulatory instruments (ILMPs, ALMPs, RUAs), institutional arrangements for RUA implementation through HHAs, and performance-based fiscal mechanisms. These are adaptation-specific costs—without which ILMPs, ALMPs, RUAs, and the livestock tax would remain underused administrative tools rather than instruments for resilience.
- Component 2: Climate-Smart Rangeland and Livestock Management (USD 4.75 million): Supports climate-smart rangeland use regimes, community-level investments in ecosystem restoration and climate-smart livestock practices, strengthened extension services, and institutionalized climate-risk preparedness with strengthened social inclusion. These measures go beyond standard rural development by addressing explicit climate hazards and variability while building dzud preparedness and restoring ecosystem functions that buffer drought.
- Component 3: Climate-Smart Livestock Value Chains and Competitive Agribusinesses (USD 4.365 million): Creates a national certification and traceability system for climate-smart pastoralism, strengthened conformity assessment services, capacity building for herders and agribusinesses to meet international market standards, and sustainable financial mechanisms to reward regenerative production and processing. These public and private financial and market instruments constitute the economic backbone of adaptation, transforming environmental compliance into profitability.
- Component 4: Climate-Adaptive Rangeland Knowledge and Learning Systems (USD 0.95 million): Institutionalizes a Rangeland MRV Platform with decision-support and sustainability mechanisms, domestic knowledge sharing and upscaling mechanisms, and global learning partnerships. Without such evidence systems, adaptation cannot be verified, scaled, or sustained.

185. The Adaptation Fund financing covers the incremental and transaction costs that domestic budgets and ongoing development projects cannot absorb enforcement of rangeland agreements, integration of ecological data into fiscal systems, climate-risk analytics, and the establishment of adaptive markets. It funds the shift from fragmented, short-term interventions to an integrated national model in which resilience is measurable, rewarded, and financially sustainable.

186. Economically, the investment offsets herders' short-term costs of adaptation—reducing herd size, implementing rest rotations, and investing in improved practices—by establishing the incentives, infrastructure, and market premiums that make stewardship profitable. Environmentally, it restores the ecological functions that underpin Mongolia's water regulation, soil carbon storage, and biodiversity. Socially, it strengthens governance, gender equity, and inclusion by ensuring that women and youth play active roles in decision-making, training, and market access, with targets of 40 percent women and 30 percent youth participation in governance and capacity-building activities.

187. Transformational outcomes and sustainability. With Adaptation Fund support, Mongolia will establish a fully functional, scalable model linking rangeland governance, ecological restoration, fiscal incentives, and market rewards into a single adaptive system. The project's impacts include reduced livestock losses, improved productivity, restored rangeland health, and strengthened institutional capacity – represent the full cost of adaptation required to safeguard the country's pastoral economy from accelerating climate risk. Without the Adaptation Fund, Mongolia's ongoing programmes would remain developmental but not adaptive—unable to connect the legal, financial, and market mechanisms that make resilience self-sustaining. With AF financing, Mongolia can operationalize the full adaptation cycle, ensuring that every improvement in rangeland condition and livestock productivity translates into greater resilience for herders, ecosystems, and the national economy.

188. In summary, the Adaptation Fund investment represents a catalytic and transformational step: converting decades of fragmented donor projects into a unified, incentive-based adaptation economy that restores degraded landscapes, strengthens livelihoods, and reduces national vulnerability to climate change. The project will demonstrate that verified adaptation generates measurable returns for producers, investors, and ecosystems while positioning Mongolia as a regional leader in regenerative pastoralism.

**J. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project/programme.**

189. **Learning from past investments and legal anchoring.** The project's sustainability strategy directly responds to lessons from past investments—World Bank's Sustainable Livelihoods Programme (SLP I–III), FAO/GEF's Dryland Sustainable Landscapes project, EU SECIM and EDP (implemented by UNIDO), UNDP's GCF-financed ADAPT programme, and SDC's Green Gold initiative—which demonstrated that successful pilots fade when not embedded in law, financed through recurrent budgets, or reinforced by functioning markets. Every intervention under this project is therefore anchored in legally enforceable and fiscally supported systems. The 2024 Law on Herder Household Associations and the Land Law and provide the statutory foundation for ILMPs, ALMPs, and RUAs that define clear rights, obligations, seasonal rules, and reserve-pasture requirements. Restoration activities, fodder reserves, and water-point protection will only be implemented where they are explicitly included in these planning instruments. Carrying capacity thresholds, updated bi-annually through the National Rangeland MRV Platform, will ensure continuity of adaptive management long after project closure.

190. **Institutional sustainability.** The project operates entirely within the mandates of existing national institutions - MOFALI, MECC, ALAMGaC and IRIMHE - ensuring that all outputs are owned and maintained by government systems beyond project completion. ALAMGaC will serve as the national centre for rangeland spatial planning, with the e-gazar database fully interoperable with the National Rangeland MRV Platform. Herder Household Associations, legislated under the 2024 Law, will assume permanent responsibility for RUA implementation, providing a durable community-level governance structure. A Climate-Smart Pastoralism Working Group - modelled on the White Gold Platform and co-chaired by the Office of the President - will convene ministries, HHAs, processors, and buyers to translate MRV data into policy and market adjustments. Training programs will lead to nationally recognized accreditation for rangeland-management and spatial-planning professionals, creating a permanent human-resource base for replication beyond project sites.

191. **Fiscal and financial sustainability.** Financial sustainability is secured through integrated public and private mechanisms that ensure adaptation continues after project financing ends. The livestock tax (2020) will be earmarked for rangeland management, monitoring, and dzud preparedness, creating a predictable domestic funding stream. Operations of the National Rangeland MRV Platform will be sustained through soum subscriptions, processor service fees, and certification revenue, eliminating dependence on external grants. The Mongolian Agency for Standardization and Metrology (MASM) and industry bodies will assume governance of climate-smart certification standards, ensuring market-based revenue streams continue to reward verified ecological performance.

192. **Market sustainability.** Market sustainability is reinforced through traceability, certification, and cleaner-production standards for meat, leather, wool, and cashmere that lock in long-term price premiums for climate-smart compliance. The climate-smart pastoralism standard—anchored in MASM and aligned with the White Gold Initiative, Sustainable Fibre Alliance, and Mongolian Sustainable Cashmere Platform - links ecological verification with commercial reward. Processors, exporters, and investors gain clear evidence that production originates from rangelands managed within carrying capacity limits, enabling premium pricing and conditional offtake contracts. By aligning private-sector incentives with adaptation outcomes, the project converts environmental stewardship into a durable economic advantage that persists without continued public subsidy.

193. **Social sustainability.** Social sustainability is strengthened through community ownership and inclusive participation. Co-signed RUAs involving soum governors, HHA leadership, and absentee herd owners establish shared accountability for rangeland stewardship. Quotas requiring at least 40 percent participation of women and 30 percent youth in governance bodies, training programs, and decision-making ensure equitable distribution of benefits and build the next generation of climate-smart herders. Transparent scorecards and a three-tier grievance mechanism (HHA → Soum → Aimag) provide accountability and trust. Recognition programs for model herders and HHAs will shift social norms toward stewardship and productivity, embedding behavioural change within community culture.

194. **Environmental sustainability.** Environmental sustainability is ensured by anchoring all field interventions in evidence-based planning instruments. ILMPs, ALMPs, and RUAs will incorporate carrying capacity thresholds, rotational grazing schedules, seasonal mobility rules, and reserve-pasture designations—all updated annually based on MRV data. These legally binding instruments ensure that ecological improvements in rangeland condition, vegetative cover, and soil-water retention are maintained beyond project completion. Cross-soum agreements coordinated through aimag-level authorities will preserve seasonal mobility corridors and equitable access to drought-refuge pastures. Restoration investments in degraded rangelands, water nature-based solutions, and fodder reserves will be explicitly tied to RUA compliance, ensuring that infrastructure is

maintained through community obligation and fiscal incentive rather than external supervision.

195. **Technical sustainability and knowledge systems.** Technical sustainability is embedded by integrating climate-smart practices into national education and extension systems. Training programs for ALAMGac specialists, aimag and soum land management officers, and extension staff will lead to nationally recognized accreditation, ensuring permanent institutional capacity for rangeland monitoring and carrying capacity assessment. Herder Development Centres - established in target soums—will serve as permanent hubs for learning and experience-sharing, with the low-cost model easily replicable through Component 4 knowledge-sharing mechanisms. Digital platforms—including e-learning modules, social media extension channels, and mobile-based monitoring tools—will ensure accessibility for herders unable to attend in-person training. Integration with the World Bank's Livestock Commercialization Project and Virtual Cooperatives Project digital platforms will leverage existing infrastructure and maximize reach.

196. **Replication and scaling.** The project is designed explicitly for replication and national scale-up. By demonstrating enforceable RUAs, digital MRV systems, conditional market access, and performance-based governance mechanisms across 12 soums covering approximately one million hectares, the project creates a proven model that can be extended to other aimags through domestic budgets and complementary donor investments. The National Rangeland MRV Platform—providing standardized indicators for UNFCCC Adaptation Communications, UNCCD Land Degradation Neutrality reporting, and CBD/GBF biodiversity targets—establishes the operational foundation for evidence-based decision-making across Mongolia's entire rangeland economy. Output 4.3 operationalizes domestic knowledge-sharing through annual conferences, peer exchanges, and resource kits, while Output 4.4 advances global learning partnerships through UNCCD knowledge networks and South-South cooperation with other dryland countries.

197. In combination, legal enforceability, ecological thresholds, fiscal incentives, market rewards, institutional anchoring, social inclusion, and embedded technical capacity transform adaptation from a temporary donor effort into a self-sustaining, nationally owned system. The Adaptation Fund investment represents a catalytic step: converting decades of fragmented donor projects into a unified, incentive-based adaptation economy that delivers lasting ecological, social, and economic resilience across Mongolia's pastoral landscapes. Adaptation benefits achieved through the project will be sustained after its end and will enable replication and scaling with domestic resources and complementary climate finance.

**K. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project/programme.**

198. The project was screened against the fifteen environmental and social principles of the Adaptation Fund's Environmental and Social Policy (ESP). Based on the nature of activities and the results of the initial risk screening, the project is classified as Category B (moderate risk), as potential adverse impacts are site-specific, reversible, and readily mitigated through well-established procedures. No large-scale or irreversible environmental or social risks are anticipated. The project will not involve resettlement, conversion of critical habitats, or activities with significant downstream pollution risks. A brief description of the main findings is presented in the table below.

Checklist of environmental and social principles	No further assessment required	Further assessment required	Justification
<i>Compliance with the Law</i>	X		All activities comply with the Land Law, Water Law, Law on Environmental Protection, Law on Environmental Impact Assessment, and the 2024 Law on Herder Household Associations. No legal compliance risks identified.
<i>Access and Equity</i>	X		Project ensures equitable access through co-signed Rangeland Use Agreements, transparent allocation criteria, and three-tier grievance mechanisms at HHA, soum, and aimag levels. Safeguards against elite capture by large absentee herd owners are embedded in RUA governance.
<i>Marginalized and Vulnerable Groups</i>	X		Female-headed households, poor herders, and youth are prioritized through targeted extension, training, and market participation. Social assessments will identify vulnerable households. Minimum 40% women and 30% youth participation in all decision-making bodies.

<i>Human Rights</i>	X		Project promotes rights to livelihoods, food security, and participation in natural resource governance. Free, prior, and informed consent ensured through participatory ILMP/ALMP/RUA development processes.
<i>Gender Equality and Women's Empowerment</i>	X		Gender mainstreamed throughout: 40% women participation targets, gender-sensitive extension scheduling, women's leadership in HHAs, targeted support for women-headed households. Gender action plan to be developed at full proposal stage.
<i>Core Labour Rights</i>	X		All activities comply with Mongolia's Labour Law and Occupational Safety and Health Law. UNIDO protocols applied for processing facility upgrades. No risks of child labour or poor working conditions identified.
<i>Indigenous Peoples</i>	X		Target aimags (Dundgovi, Sukhbaatar) do not have significant ethnic minority populations. Any minority herders in target soums ensured equal access.
<i>Involuntary Resettlement</i>	X		No physical or economic displacement anticipated. RUAs formalize existing customary use patterns. Seasonal mobility corridors preserved through cross-soum agreements. No restrictions on access to resources.
<i>Protection of Natural Habitats</i>		X	Low risk. Project aims to restore degraded rangelands and protect biodiversity corridors. Site-level screening required to ensure no interventions in protected areas, Ramsar wetlands, or critical habitats. IRIMHE and River Basin Authority review of all site plans.
<i>Conservation of Biological Diversity</i>		X	Low risk. Activities designed to enhance biodiversity through reduced grazing pressure, corridor protection, and ecosystem restoration. Further screening during implementation to ensure no indirect impacts on biodiversity.
<i>Climate Change</i>		X	Moderate risk. Maladaptation risks mitigated through carrying capacity thresholds, MRV-based adaptive management, early warning systems, and Climate-Smart Pastoralism Working Group oversight. Interventions grounded in evidence-based decision-making.
<i>Pollution Prevention and Resource Efficiency</i>		X	Low risk. Minor risks from cleaner-production retrofits in processing facilities and livestock waste. Mitigated through UNIDO environmental audit protocols, MNS wastewater/air-emission standards, and waste management systems.
<i>Public Health</i>	X		No significant risks. Minor occupational health considerations addressed through safety protocols. Improved veterinary services and animal health under Component 2 enhance public health outcomes.
<i>Physical and Cultural Heritage</i>	X		No risks identified. Target areas do not contain known heritage sites. Site screening during implementation will ensure no adverse impacts on cultural heritage.
<i>Lands and Soil Conservation</i>	X		Project explicitly promotes soil conservation through reduced grazing pressure, rotational grazing, and ecosystem restoration. All interventions designed to restore degraded lands, not convert productive lands.

199. **Environmental considerations.** Most project activities are expected to generate positive environmental outcomes, including reduced grazing pressure, improved vegetation cover, restoration of ecosystem services, and enhanced biodiversity through corridor protection. Nevertheless, several minor environmental risks have been identified: (i) localized disturbance of soils and vegetation during small-scale restoration works or water-point rehabilitation; (ii) potential over-abstraction or contamination of groundwater if wells are not properly sited and maintained; (iii) limited risks of waste generation or chemical discharge from cleaner-production retrofits in meat and leather processing facilities; and (iv) temporary disruption to wildlife movement during construction of small structures. All infrastructure and restoration activities will undergo screening in accordance with Mongolia's Law on Environmental Impact Assessment (2012, amended 2021), and design standards will ensure that no interventions occur within legally protected areas, Ramsar wetlands, or critical biodiversity habitats. The project will adopt best practices for nature-based solutions and water management, with IRIMHE and River Basin Authorities reviewing all site plans to prevent negative hydrological impacts.

200. **Social considerations:** The project's social risks are moderate and manageable. Potential risks include: (i)

disputes over grazing boundaries or seasonal mobility corridors as ILMPs/ALMPs and RUAs are formalized; (ii) inequitable access to project benefits or elite capture by large absentee herd owners; (iii) inadvertent reinforcement of gender imbalances if women's participation is not adequately supported; and (iv) data-privacy concerns related to digital monitoring tools such as GPS-collared livestock or mobile-based applications. To address these risks, all RUAs will be developed through participatory and inclusive consultation processes ensuring free, prior, and informed consent. Women and youth will have formal representation in all decision-making bodies (minimum 40% women and 30% youth participation), and a three-tier grievance redress mechanism will operate at Herder Household Association, soum, and aimag levels. Social assessments will identify vulnerable households, including female-headed and poor herder families, to ensure targeted support through extension, training, and market participation.

201. **Climate change and maladaptation risks.** The project aims to mitigate the risk of maladaptation by grounding all interventions in carrying capacity thresholds, ecological monitoring, and evidence-based decision-making through the National Rangeland MRV Platform. Climate hazards including dzuds and droughts are addressed through strengthened early warning systems, forecast-based action protocols, and institutionalized climate-risk preparedness under Output 2.4. Adaptive grazing regimes based on Resilient Carrying Capacity assessments will ensure that stocking rates remain within ecological limits even under changing climatic conditions. The Climate-Smart Pastoralism Working Group will continuously review intervention effectiveness and adjust practices to avoid any maladaptive outcomes.

202. **Compliance and safeguards management:** All project activities will comply with Mongolia's Law on Environmental Protection, Land Law (2002, amended 2024), Law on Water (2012), Law on Animal Health (2017), and the Occupational Safety and Health Law (2015), as well as national standards for wastewater, solid waste, and industrial effluent. For processing-sector investments under Component 3, UNIDO's environmental audit protocols and Mongolia's MNS wastewater and air-emission standards will be applied. A full Environmental and Social Management Plan (ESMP) will be developed during the full proposal phase, setting out screening criteria, monitoring indicators, and clear institutional responsibilities for implementation and reporting. The ESMP will also include a gender action plan, stakeholder engagement plan, and specific provisions for data privacy, labour safety, and community health

203. **Mitigation and monitoring:** Mitigation measures will include: participatory land-use mapping to prevent conflicts and maintain mobility corridors; ecological screening and buffer zones for restoration works; water-resource assessments and well-maintenance guidelines; waste-management and effluent-control systems for upgraded processing facilities; biodiversity monitoring; and cross-soum agreements coordinated with River Basin Authorities to ensure equitable access to drought-refuge pastures. Annual environmental and social audits will be conducted, and the project's National Rangeland MRV Platform will display compliance data to enhance transparency and accountability. M&E plans will include monitoring of ESMP implementation with gender-disaggregated indicators.

204. Consultation and disclosure. During the full proposal phase, the project will conduct national and local consultations with government agencies, HHAs, private-sector actors, and civil-society organizations to validate safeguard measures and confirm that all affected communities are informed and engaged. Special attention will be given to the timing and format of consultations to encourage full participation by women, youth, and other vulnerable groups. Consultation records and stakeholder feedback will be publicly disclosed in line with Adaptation Fund requirements. The project will align its safeguard monitoring with Mongolia's national EIA information system and the Adaptation Fund's Environmental and Social Management Framework to ensure consistency, accountability, and continual risk oversight.

205. In summary, the project's environmental and social risks are limited, site-specific, and manageable through standard mitigation measures. With adherence to national legislation, inclusive planning, and transparent monitoring, the project is expected to yield substantial net environmental and social benefits by restoring degraded rangelands, strengthening adaptive capacity, reducing climate vulnerability, and promoting gender equity and social inclusion across Mongolia's pastoral landscapes. Any site-specific issues will be addressed through the ESMP to be prepared at the full proposal stage.

## **PART III: IMPLEMENTATION ARRANGEMENTS**

### **A. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund**

206. The proposed project is fully aligned with the Adaptation Fund's Strategic Results Framework (SRF). The 2025 revision of the SRF enhances alignment with the Global Goal on Adaptation (GGA), strengthens disaggregation by gender and vulnerable groups, introduces new indicators for locally led adaptation, and restructures innovation indicators around an identification-piloting-scale up pathway. The project contributes to all three strategic pillars: Under Action, the project strengthens ecosystem and livelihood resilience by restoring degraded rangelands, protecting water resources, and improving herder capacity to withstand dzud and drought. Under Innovation, it introduces market-based incentives linking verified ecological performance to economic returns, including a national climate-smart pastoralism certification system, digital traceability, and results-based financial mechanisms—progressing from innovation identification (Output 8.1 and 8.2) toward eventual scale-up. Under Knowledge and Sharing / Locally Led Adaptation, the project institutionalizes continuous learning through the National Rangeland MRV Platform and Climate-Smart Pastoralism Working Group, generating evidence for policy decisions and enabling other aimags and soums to replicate proven models using domestic resources.

207. The project advances the Fund's cross-cutting commitments to gender equality and locally led adaptation: at least 40 percent of training and governance participants will be women or youth, participatory planning will ensure equitable representation, and all interventions will comply with the Fund's Environmental and Social Policy and Gender Policy. By linking local adaptation with national systems of governance, finance, and monitoring, the project creates enabling conditions for sustained adaptation at scale.

208. The project's alignment with the revised SRF reflects the Fund's enhanced focus on locally led adaptation: Outcome 1 advances devolved decision-making through HHAs (Output 3.3, Indicator 3.3.1); Component 2 ensures vulnerable groups participate in adaptation planning and awareness activities (Output 3.1, Indicator 3.1.1); and Component 4 builds local institutional capacity for evidence-based adaptation through the MRV Platform and Working Group (Output 2.1, Indicator 2.1.1 disaggregated by scale including local level). All indicators incorporate the enhanced disaggregation requirements of the SRF 2025 - by gender, vulnerable groups (including women, youth, and poor herders), scale (local, sub-national, national), and sector (pastoral livestock systems)—enabling the Fund to report on cross-cutting themes and contribute to Global Goal on Adaptation (GGA) targets, particularly on ecosystems (Target D), infrastructure (Target E), poverty and livelihoods (Target F), and the implementation dimension of the iterative adaptation cycle.

Project Objective	Project Objective Indicators	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Enable herder communities to better adapt to climate change through regenerative rangeland management that integrates improved governance, climate-smart restoration, market-based incentives, and evidence-informed decision-making.	<ul style="list-style-type: none"> <li>Number of beneficiaries (direct and indirect) with strengthened adaptive capacity [disaggregated by gender and by vulnerable groups];</li> <li>Hectares of rangeland managed for climate resilience through improved governance and practices;</li> <li>Households with increased income or avoided decrease in income through climate-smart livestock production [disaggregated by female-headed households]</li> </ul>	<p>Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress;</p> <p>Outcome 7: Improved policies and regulations that promote and enforce resilience measures.</p> <p>Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas;</p>	<p>Core Indicator 5: Ecosystems and natural resources brought under protection, restoration, or improved management [# of hectares, disaggregated by land, marine, coastal, and cultural heritage area];</p> <p>Indicator 7: Policies, strategies, and/or plans adopted, implemented, and/or enforced that integrate climate risk considerations [#, disaggregated by scale and policy step i.e., developed, adopted, implemented, enforced].</p> <p>Core Indicator 6.2: Households with increased income, or avoided decrease in income [# of households, disaggregated by female-headed households];</p>	15,000,000
Project Outcomes	Project Outcome Indicators	Fund Output	Fund Output Indicator	Grant Amount (USD)
<b>Component 1: Climate-Resilient Rangeland Governance and Stewardship</b>				

<p>Outcome 1: A coherent regulatory, institutional and fiscal framework enables herder household associations and local governments to restore rangeland ecosystems and strengthen climate resilience.</p>	<ul style="list-style-type: none"> <li>• Number of soums with updated ALMPs integrating climate risk and carrying capacity data;</li> <li>• Number of HHAs established and implementing Rangeland Use Agreements;</li> <li>• Percentage of women and youth in rangeland governance bodies.</li> </ul>	<p>Output 7.1: Improved integration of climate resilience into policies, strategies, and plans;</p> <p>Output 2.1: Strengthened capacity of institutions to understand and address climate risks;</p> <p>Output 3.3: Increased ownership of adaptation and climate risk reduction processes.</p>	<p>Core Indicator 7.1.1: Policies, strategies, and/or plans developed or adjusted to integrate climate risk considerations [# of policies, strategies and/or plans disaggregated by scale];</p> <p>Indicator 2.1.1: Institutions supported to strengthen capacity to understand and address climate risks [# of institutions, disaggregated by scale and sector];</p> <p>Indicator 3.3.1: Number of local institutions and/or communities responsible for decision-making over adaptation solutions are defined, prioritized, designed, and/or implemented [# of local institutions and/or communities].</p>	<p>2,450,000</p>
<p><b>Component 2: Rangeland Restoration, Extension, and Climate Adaptation Practices</b></p>				
<p>Outcome 2: Herders and local authorities adopt climate-smart grazing and livestock management practices.</p>	<ul style="list-style-type: none"> <li>• Hectares of rangeland restored or managed within ecological carrying capacity</li> <li>• Number of herder households trained in and applying climate-smart grazing and livestock health practices [disaggregated by gender]</li> <li>• Number of soums with operational dzud preparedness and early warning response systems</li> </ul>	<p>Output 5.1: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts;</p> <p>Output 3.1: Targeted population groups participating in adaptation awareness activities;</p> <p>Output 1.2: Targeted population groups covered by warning and advisory services for climate-related hazards and threats.</p>	<p>Indicator 5.1.1: Ecosystems and natural resources targeted by activities to improve protection, restoration, and/or management [# of resources, by type];</p> <p>Indicator 3.1.1: People participating in activities to improve awareness of climate risks and how to address them [# of people, disaggregated by gender, and by vulnerable groups];</p> <p>Core Indicator 1.2.1: Early warning systems established or improved [# of systems, disaggregated by hazard and scale];</p> <p>Indicator 1.2.2 (required when reporting Core Indicator 1.2.1): People covered by new or improved early warning systems [# of people, disaggregated by gender].</p>	<p>4,750,000</p>
<p><b>Component 3: Climate-Smart Livestock Value Chains and Competitive Agribusinesses</b></p>				

<p>Outcome 3 – Herder resilience and agribusiness continuity strengthened as profitable livestock value chains incentivize and reward the adoption of climate-smart and regenerative rangeland management practices.</p>	<ul style="list-style-type: none"> <li>• National climate-smart pastoralism certification and traceability system operational;</li> <li>• Number of herders, HHAs, cooperatives, and processors certified and accessing premium markets [disaggregated by gender];</li> <li>• Number of SMEs adopting cleaner-production and circular-economy practices;</li> <li>• Volume and value of certified climate-smart livestock products sold (domestic and export),</li> </ul>	<p>Output 6.1: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability;</p> <p>Output 8.1: Innovations identified and piloted which collectively enhance local innovation capacity &amp; contribute to the development of local, national and regional adaptation innovation ecosystems.</p>	<p>Indicator 6.1.1: People receiving targeted support for new and/or improved livelihoods to manage climate risk [# of people, by gender and by type of support];</p> <p>Indicator 8.1.2: Innovations piloted that demonstrate local participation and/or local innovation benefit [# of innovations]</p>	<p>4,365,000</p>
<p><b>Component 4:</b> Climate-Adaptive Rangeland Information Management, Evaluation, Learning and Amplification System</p>				
<p>Outcome 4 – Rangeland resilience strengthened through holistic knowledge and learning systems that improve information sharing, amplify best practices, and expand climate-smart, regenerative livestock-sector innovation and profitability.</p>	<ul style="list-style-type: none"> <li>• National Rangeland MRV Platform operational and used by ministries, local governments, and private sector;</li> <li>• Number of knowledge products developed and disseminated for replication and upscaling;</li> <li>• Climate-Smart Pastoralism Working Group institutionalized with regular multi-stakeholder engagement.</li> </ul>	<p>Output 3.2: Strengthened capacity of national and subnational stakeholders to capture and disseminate knowledge and learning;</p> <p>Output 8.2: Innovations identified and piloted which build the adaptation innovation evidence-base and institutional capacity.</p>	<p>Indicator 3.2.1: Climate resilience knowledge products and/or tools developed and shared with stakeholders [# of products/tools];</p> <p>Indicator 8.2.1: Innovation-focused knowledge products disseminated and/or learning events facilitated that support and enable innovation capacity at local, national, and/or regional level [# of products/events].</p>	<p>950,000</p>

**B. Describe the arrangements for project / programme implementation.**

**Governance arrangements**

209. The project will be implemented under the National Implementation Modality (NIM), with the implementation and support structure clearly defining the roles of the Implementing Entity (IE), the Executing Entity (EE), and the designated Responsible Parties.

This arrangement ensures a Whole-of-Government approach and strict compliance with UNDP and the Adaptation Fund's policies. Implementation will be carried out in close partnership with the Government of Mongolia through the Ministry of Environment and Climate Change (MECC) as the national executing counterpart, in collaboration with the Office of the President, Ministry of Food, Agriculture and Light Industry (MOFALI), the Agency for Land Administration and Management, Geodesy and Cartography (ALAMGaC), the National Agency for Meteorology and Environmental Monitoring (NAMEM) and industry associations, Aimag and Soum governments, Herder Household Associations, and civil-society organizations will play essential roles in field implementation, local governance, and community participation.

210. **Implementing Entity (IE): United Nations Development Programme (UNDP).** UNDP’s role comprises two distinct and separate functions. Programme Assurance and Oversight (IE Function): UNDP provides overall

project oversight, financial accountability, and quality assurance, ensuring full compliance with UNDP and the Adaptation Fund’s fiduciary standards, Environmental and Social Policy (ESP), and Gender Policy (GP). Programme Support Services (Country Office Service): Based upon request by the Ministry of Environment and Climate Change under the established NIM Support Services framework, the UNDP Mongolia Country Office will offer specific, cost-reimbursable support to augment MECC’s execution capacity. This support may include, but is not limited to, procurement, recruitment, and technical implementation assistance. The costs are covered under the Project/Programme Execution Cost.

**211. Executing Entity (EE): MECC, UNDP, and the United Nations Industrial Development Organization (UNIDO).** MECC leads the Programme Management Unit (PMU) and is the principal technical implementer. MECC is responsible for coordinating all Responsible Parties and delivering programme results. Project execution will be jointly undertaken by MECC, UNDP, and UNIDO as Executing Entities under a unified governance framework. MECC and UNDP will co-lead governance reform, policy integration under Component 1, UNDP will lead capacity development, ecosystem-based adaptation and monitoring, reporting, and knowledge management under Components 2 and 4, and UNIDO will lead implementation of Component 3 on climate-smart livestock value chains, cleaner production, certification, and market systems, ensuring that adaptation actions are anchored in viable, market-based incentives. All agencies will share joint accountability for delivery of project results under a single results framework, work plan, and reporting structure approved by the Government of Mongolia and the Adaptation Fund.

**212. Project Steering Committee (PSC),** chaired by MECC and co-chaired by MOFALI with UNDP as Implementing Entity, will provide strategic direction and policy alignment. Members include key partners the Agency for Land Administration and Management, Geodesy and Cartography (ALAMGaC), the National Agency for Meteorology and Environmental Monitoring (NAMEM), UNIDO, local administrations, industry associations, academia, and Office of the President (White Gold and Food revolution initiatives). The Project Board will meet at least twice per year to: i) review and approve annual workplans and budgets; ii) consider progress reports, audit findings and evaluation recommendations; iii) endorse major adjustments in project strategy or resource allocation; and iv) ensure adherence to national strategies (Vision 2050, NAP, NDC) and Adaptation Fund policies, including environmental and social safeguards and gender requirements.

213. Local-level implementation will be carried out through aimag and soum governments working with Herder Household associations and cooperatives. This decentralized approach ensures ownership, alignment with Integrated Land Management Plans (ILMPs), Annual Land Management Plans (ALMPs), and Rangeland Use Agreements (RUAs), and direct participation of herders in planning, monitoring, and benefit-sharing. Field activities will be delivered through performance-based partnerships, building the capacity of soum officers, extension services, and veterinary networks to maintain project investments beyond the project’s duration. At the community level, HHAs will serve as the primary institutional vehicle for RUA implementation, collective decision-making, and grievance resolution.

214. By embedding project activities within existing legal, fiscal, and market systems—particularly through the Land Law (amended 2024), Law on Herder Household Associations (2024), the Law on Herders (2024), ILMPs, ALMPs, RUAs, and livestock tax reinvestment mechanisms—the implementation framework guarantees institutional sustainability and national ownership. Coordination with the Government of Mongolia will ensure consistency with Mongolia’s overall adaptation finance strategy and reporting obligations under the UNFCCC.

215. This implementation arrangement establishes a coherent, country-driven structure that integrates national leadership, UN technical support, and multi-stakeholder participation to deliver lasting adaptation benefits for Mongolia’s rangelands, ecosystems, and herder communities. The joint MECC, UNDP, and UNIDO execution model ensures that governance, ecological, and economic dimensions of adaptation are addressed through a unified, mutually reinforcing framework.

## PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

### A. Record of endorsement on behalf of the government

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

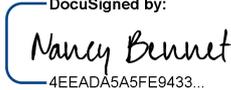
Bat-Ulzii Batchuluun, Director General, Policy and Planning Department, Ministry of Environment and Climate Change	Date: December 17, 2025
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### B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Vision 2050, Nationally Determined Contribution 3.0, and National Adaptation Plan) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Implementing Entity Coordinator

DocuSigned by:



4EEADA5A5FE9433...

Nancy Bennet  
 Executive Coordinator,  
 Vertical Fund Programme Support, Oversight and Compliance Hub  
 Bureau for Policy and Programme Support  
 United Nations Development Programme

Date: 23 January 2026	Tel. and email: <a href="mailto:nancy.bennet@undp.org">nancy.bennet@undp.org</a>
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Date 18 July 2025  
Ref. 1/103

TO: THE ADAPTATION FUND BOARD  
c/o Adaptation Fund Board Secretariat  
Email: [afbsec@adaptation-fund.org](mailto:afbsec@adaptation-fund.org)  
Fax: 202 522 3240/5

Letter of Endorsement by Government

Subject: Endorsement for the Concept Proposal “**Climate-Smart Rangelands and Livestock Value Chains for Sustainable Adaptation (RAISE) project**”

In my capacity as designated authority for the Adaptation Fund in Mongolia, I confirm that the above project proposal is in accordance with the government’s national priorities in implementing adaptation activities to reduce adverse impacts of, and risks posed by, climate change in Mongolia.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be executed by the United Nations Development Programme (UNDP) and implemented by UNDP with United Nations Industrial Development Organization (UNIDO), also acting as a partial executing entity.

Sincerely,

Dr. Batjargal Zamba,  
National Focal Point for the Adaptation Fund  
Science Advisor, IRIMHE



## Revised PFG Submission Form<sup>1</sup>

### Project Formulation Grant (PFG)

**Submission Date:** January 23, 2025

**Adaptation Fund Project ID:**

**Country/ies:** Mongolia

**Title of Project/Programme:** Climate-Smart Rangelands and Livestock Value Chains for Sustainable Adaptation (RAISE) project

**Type of IE (NIE/RIE/MIE):** Multilateral Implementing Entity

**Implementing Entity:** UNDP

**Executing Entity/ies:** Ministry of Environment and Climate Change (MECC), UNDP and UNIDO

#### A. Project Preparation Timeframe

<b>Start date of PFG</b>	May 2026
<b>Completion date of PFG</b>	December 2026

**Overall Objective:** Preparation of a full project proposal for RAISE Project, demonstrating robust climate-adaptation rationale, sound technical feasibility, environmental and social safeguards, gender-responsive stakeholder ownership, cost-effective design, and a sustainable implementation & MEL system.

#### B. Proposed Project Preparation Activities (\$)

<b>List of Proposed Project Preparation Activities</b>	<b>Output of the PFG Activities</b>	<b>US\$ Amount</b>	<b>Budget note<sup>2</sup></b>
1. Technical studies, feasibility, project coordination support	Conduct and complete technical pre-feasibility for Components 1–4, including site selection	28,200 Local Consultant and Contractual services	2 short missions + technical and financial feasibility (pasture, water NbS, value chains, institutional)

<sup>1</sup> As presented in AFB/PPRC.33/40 Annex 1.

<sup>2</sup> The proposal should include a detailed budget with budget notes indicating the break-down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

2. Social Environmental and & inclusion instruments	Prepare safeguards related documentation and Gender Action Plan, Stakeholder Engagement Plan	16,800 Local Consultant	Recruit and engage with relevant national consultant(s) to prepare safeguards documentation, such as: ESMP, Gender Action Plan, Stakeholder Engagement Plan, Grievance & FPIC, initial screening/classification consistent with AF ESP & UNDP SES
3. Stakeholder engagement activities	Undertake structured stakeholder consultations with government, herder associations, industry, and financial institutions	30,000 (Training and Workshops)	National & Aimag/Soum workshops; private sector roundtables; translation and design and development services
4. Proposal Drafting & packaging	Define detailed Monitoring and Evaluation Plan, baselines, data flows, and sustainability;  Draft and compile project proposal, edit graphics; annex assembly; QA and finalize package	35,000 International Consultant	Support and engage with relevant technical consultant(s) to draft the full AF proposal with budget, procurement plan, implementation arrangements, risk & mitigation, knowledge & scaling strategy, and annexes
Travel & logistics (local)	Field transport, per diem	27,250 (Travel, logistics and supplies )	
Subtotal		137,250	
Implementing Entity's Management Fee 8.5%		12,750	
<b>TOTAL</b>		<b>150,000</b>	

The PFG will finance targeted feasibility assessments, safeguards instruments, gender responsive stakeholder engagement, MEL/MRV design, and proposal drafting necessary to meet Adaptation Fund requirements at full proposal stage. The outputs and activities directly derive from the approved Concept

Note and from Mongolia's NAP/NDC3.0, rangeland governance reforms, and value chain upgrading priorities. The formulation work will be completed in 6 months, producing a full AF proposal and annexes ready for DA endorsement and submission.

### **1. Technical & climate feasibility**

The Project Formulation Grant will support detailed technical and climate feasibility assessments to confirm the suitability, effectiveness, and sustainability of the proposed adaptation interventions. This will include an updated climate risk and vulnerability analysis, assessment of current and projected climate hazards and impacts, evaluation of technical options for adaptive rangeland management, EbA solutions design parameters, and value chain analysis. Moreover, the studies will evaluate the additionality and cost-effectiveness of project proposed outputs. The work will ensure that the selected measures are technically sound, climate-resilient, and aligned with national policies, sectoral strategies, and Adaptation Fund requirements.

### **2. Gender and Environmental and Social Risk analyses**

The PFG will finance the preparation of all required environmental and social safeguards and inclusion tools, and documentation in accordance with the UNDP's and Adaptation Fund's Environmental and Social Policy. This will include environmental and social screening, risk categorization, and the development of appropriate environmental and social management plans, as well as a gender-responsive and socially inclusive approach.

### **3. Stakeholder engagement**

Resources will be allocated to conduct inclusive and participatory stakeholder engagement at national, sub-national, and community levels. Consultations will involve relevant government institutions, local authorities, community representatives, civil society organizations, the private sector, and development partners to validate the problem analysis, refine proposed adaptation measures, clarify institutional roles, and strengthen country ownership. Feedback from stakeholders will be systematically documented and integrated into the final project design.

### **4. Proposal writing & packaging**

The PFG will support the development of a comprehensive Monitoring, Evaluation, Learning, and Measurement, Reporting and Verification (MEL/MRV) framework for the project. This will include the definition of a clear theory of change, results framework, indicators, baselines, targets, data collection methods, roles and responsibilities, and learning mechanisms. The framework will be aligned with Adaptation Fund guidance and will enable effective tracking of adaptation results, climate resilience outcomes, and lessons learned during implementation. Finally, the PFG will finance the drafting, consolidation, and quality assurance of the full Adaptation Fund project proposal. This will involve integrating all technical studies, safeguards instruments, consultation outcomes, and MEL/MRV elements into a coherent, high-quality submission that fully complies with Adaptation Fund templates, policies, and Board expectations. The process will ensure internal consistency, clarity of adaptation logic, and readiness for review and approval by the Adaptation Fund Board.

### **Implementing Entity**

UNDP will serve as the Implementing Entity, assuming overall fiduciary responsibility and providing technical oversight. UNDP will also act as the Executing Entity for the Project Formulation Grant, while UNDP and UNIDO will be jointly executing partners with MECC in the full project implementation.

The request has been prepared in full accordance with the Adaptation Fund Board’s policies and procedures and satisfies the Adaptation Fund’s requirements for project identification and formulation.

<b>Implementing Entity Coordinator, IE Name</b>	<b>Signature</b>	<b>Date (Month, day, year)</b>	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email Address</b>
Nancy Bennet, Executive Coordinator, UNDP	 <p>DocuSigned by Nancy Bennet 4EEADA5A5FE9433...</p>	January 2026	Samar Taha	+66967706052	Samar.taha@undp.org