CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical Assistance Response Plan – Terms of Reference

Country	**Mongolia**
Request ID#	**2021000014**
Title	Enhancing climate resilience and economic sustainability of livestock farming in a rural community of Mongolia
NDE	*Please add name, position, organization, email and address* Anand Tsog Climate Change Senior Officer Climate Change Department, Ministry of Environment and Tourism of Mongolia anand@mne.gov.mn; anandtsog13@gmail.com United Nations Street 5/2, Ulaanbaatar, Mongolia
Proponent	*Please add name, position, organization, email and address* L. Lhagvasuren Executive Director Northeast-Asian Environmental and Agricultural Research Center (NEARC) Lhagva1999@gmail.com 4th brigade, Bayantümen sum, Dornod Province, Mongolia

Summary of the CTCN technical assistance

A major part of Mongolia's land is degraded through overgrazing, deforestation, and climate change. Climate change has significant impacts on Mongolia's grassland ecosystems and the livestock farming which consequently threatens the food security of the country. In the entire value chain of livestock sector, the nomadic livestock herders are most vulnerable as they are directly facing the adverse impacts of climate change on the animals, pasture lands and of the ensuing scarcity of water and grazing for animals. Due to loss of the livestick to erratic weather events and climate disasters (e.g., dzud), the herders are increasing the livestock headcount, in turn leading to overgrazing of pastures. The pastures are lacking nutrition, and thus gaining weight during warm seasons is difficult.

With the existing players in the market, the value-adding process like meat production, processing, packaging and selling are several steps away from these communities. Hence, communities are also suffering as their livelihood is depleting, making them more vulnerable to the climate change. Lack of institutional capacity, barriers to the market and lack of adequate risk mitigation measures and financing are further adding to it.

The CTCN support is requested to strengthen climate-resilient livestock farming while deriving the economic sustainability for vulnerable herding communities in Bayantümen sum, Mongolia. The CTCN Technical Assistance (TA) will support in two folds:

- By enhancing the capacity and knowledge of herding communities on climate-resilient livestock farming
- By facilitating the decision making to invest in community-scale sustainable meat-processing system to improve the livelihood from livestock farming

The CTCN TA will enable the vulnerable communities to derive the best value from the livestock farming while dealing with the adverse impacts of the climate change. The TA would contribute to

the Nationally Determined Contributions and national priorities of Mongolia in the field of climate change adaptation and mitigation.

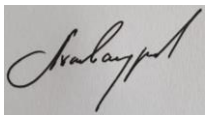
The TA will be implemented in 12 months. The maximum budget estimated for the implementation of the TA is USD 209,600.

Agreement:

(If possible, please use electronic signatures in Microsoft Word file format)

National Designated Entity to the UNFCCC Technology Mechanism
Name: Anand Tsog
Title: Climate Change Senior Officer
Date: 16th June 2021
Signature:

Proponent (signature of the Proponent is optional)
Name: L. Lhagvasuren
Title: Executive Director
Date: 14th June 2021
Signature:



UNFCCC Climate Technology Centre and Network (CTCN)

Name: Rose Mwebaza
Title: CTCN Director
Date: 17.06.2021
Signature:

1. Background and context

Please provide a brief description of the background and context for the CTCN Response Plan. Please include national and sectoral information using recognized and publicly available sources. (maximum 2500 characters including spaces).

Mongolia is facing adverse impact of climate change, from the increased frequency of heavy storms, droughts and record-breaking hot temperatures in the summer to the cold winters that are challenging the survival of humans and animals, especially for the communities that are most vulnerable to these climate phenomena.

Dzud is a climatic phenomenon, unique to the Mongolian landscape. It is a Mongolian term referring to a multiple natural disaster consisting of a summer drought resulting in inadequate pasture and production of hay, followed by very heavy winter snow, winds, and lower-than-normal temperatures. Dzuds occur when the extreme snowy winter conditions prevent livestock from accessing pasture or finding fodder through the heavy snow cover. Consequently, a large number of livestock die, primarily due to starvation as they are unable to graze, and in other cases directly from the cold.

In the absence of any other alternatives, the only option left to individual families has been to increase their herd size. This is causing the pasture quality to deteriorate and families are inevitably pitted against each other to compete for the limited resources. Deteriorating pasture lands are adversely impacting the quality of the livestock and consequently the meat sector, and the vulnerable communities that are dependent on livestock for their livelihood are the ones who suffer the most. Concerns are high because a large fraction of the population, especially the rural and the most vulnerable, is strongly dependent on the sector, and especially on herding livestock. The agricultural sector accommodates up to 30% of Mongolia's work force. 80% of the agricultural sector in Mongolia relies on herding.

Pasture growth reaches its annual peak usually in the month of August. However, this has now reduced to only about 75% of the peak growth observed 40 years ago. There is less pasture growth in spring when livestock need it urgently. There are fewer highly nutritious plants and hay harvests for the livestock as invasive plants have become common, or even dominant, in many pastures. The average weight of livestock has declined. Between 1980 and 2000, the average weight of sheep decreased by 4 kilograms (kg), goats by 2 kg, and cattle by 10 kg.[1] Wool and cashmere yields also decreased. Animals already suffer due to the hotter summer temperatures, and scientists predict that, with the climate warming, livestock will graze for fewer hours per day. This will further reduce the summer weight of animals and will therefore affect growth, fertility, and productivity. This is threatening livelihoods and food security in Mongolia.

Mongolia's National Action Program on Climate Change, which was approved by the State Great Khural (Parliament) in January 2011, identified the following as priority adaptation measures: (i) conserving natural resources, especially natural pasturelands; (ii) strengthening the bio-capacity of domestic animals; (iii) enhancing the capacities and livelihood opportunities of rural communities; (iv) increasing food security and supply; (v) improving understanding of climate extremes, and strengthening disaster risk capabilities; and (vi) introducing new and reliable insurance systems. The National Mongolian Livestock Program is also making important contributions to the country's objectives of helping traditional economic activities adapt to climate change. The purpose of the

[1] Making Grasslands Sustainable in Mongolia: Herders' Livelihoods and Climate Change- Asian Development Bank

program is to support the livestock sector through (i) developing good governance in the sector; (ii) improving livestock breeding to increase productivity and market competitiveness, including the production of high-quality, ecologically friendly livestock products and raw materials; (iii) raising veterinary service standards to international levels and protecting public health through securing Mongolian livestock health; (iv) developing livestock production that is adaptable to climatic, environmental, and ecological changes with strengthened risk management capacity; and (v) developing targeted markets for livestock and livestock products, and establishing processing and marketing structures.

In conjunction with the above mentioned national plans, a request is made to the CTCN to support, through Technical Assistance (TA), strengthening the climate-resilient livestock farming for rural communities like Bayantümen sum of Mongolia through identifying and promoting sustainable practices in the value chain of livestock farming, ranging from pasture land management to meat-processing.

2. Problem statement

Founded on the national and sectoral context as detailed in the section above, please include a brief problem statement clarifying the main problems and barriers for climate change mitigation and/or adaptation in terms of climate technologies that the CTCN Response Plan will address and overcome. (maximum 1250 characters including spaces).

It is evident that there is need for adaptation measures to be developed and implemented to protect economies and livelihoods of the vulnerable livestock farming community.

Besides the lack of adaptability to the erratic climate events, there are several challenges and barriers existing in the value chain of the livestock farming that are making the dependent communities more vulnerable:

- The livestock farmers of Mongolia are lacking socially organized income and risk management arrangements. The herding families are in-effect small-scale firms that must compete in markets and must face the inevitable instabilities. Some insurance models for risk-mitigation were proposed but did not fully address underlying structural problems.
- Mongolian export of meat is not steady as the export of livestock due to concerns over zoonotic/animal diseases. As the livestock facilities are centralized, in case of a disease outbreak this would contaminate the few centralized facilities, disqualifying the entire country's meat exports.
- Furthermore, the existing market structure has many layers that take the value-adding process several steps away from rural communities. Hence, there is very little leveraging power on the part of livestock raising households when it comes to sale prices.
- The sector also lacks financing as herding communities simply cannot pool enough cash and expertise to identify and build a technologically suitable facility, purchase the equipment, and receive training on industry-standard butchering practices.
- Moreover, many herding communities are not connected to electricity grids, which makes electric refrigeration difficult.

Overall Objective

CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical Assistance Response Plan – Terms of Reference

The CTCN TA will strengthen climate-resilient livestock farming while deriving the economic sustainability for vulnerable herding communities in Bayantümen sum, Mongolia.

Under the TA, the activities will be implemented to achieve the following outputs:

- Climate change vulnerability assessment will be conducted on livestock farming in Bayantümen sum in a consultative way.
- Pastureland management measures to be implemented for climate-resilient livestock farming in Bayantümen sum will be identified.
- Business models will be developed with community-scale meat-processing system for climate-resilient livestock farming in Bayantümen sum.
- Capacity of government bodies will be enhanced for climate-resilient livestock farming in Bayantümen sum

3. Logical Framework for the CTCN Technical Assistance:

(Guidance: Please note that multiple activities lead to one Output, and multiple Outputs lead to one Outcome. There can be several Outputs, but only one Outcome description capturing the CTCN technical assistance. Deliverables are the products or services to be delivered to the NDE/Proponent/CTCN based on the Activities and the Outputs.)

	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Objective: Identification of the pastureland management measures and development of community-scale business models for enhancing climate-resilient livestock farming in Bayantümen sum												
Outcome: Findings from the technical assistance will strengthen climate-resilient livestock farming while deriving economic sustainability of herding communities in Bayantümen sum, Mongolia												
Output 1: Development of implementation planning and communication documents												
Activity 1: The lead implementer must undertake the following activities at the beginning and at the end of the CTCN technical assistance (TA). ii) A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organisations and detailed budget to implement the Response Plan developed. The detailed work plan and budget must be based directly on this Response Plan; ii) Based on the work plan, a monitoring and evaluation (M&E) plan with specific, measurable, achievable, relevant and time-bound indicators provided and used to monitor and evaluate the timeliness and appropriateness of the implementation (a template will be provided). The M&E plan should apply selected indicators from the technical assistance closure report template and enable the lead implementer to complete the technical assistance closure report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan); iii) Impact statement formulated at the beginning of the TA and updated/revised once the TA is fully delivered (a template will be provided); and iv) A technical assistance closure report completed at the end of the TA (a template will be provided).												
Deliverables 1: ii) Detailed work plan ii) Monitoring & evaluation (M&E) plan and impact statement												

iii) Technical assistance closure report												
Output 2: Stakeholder consultations and climate change vulnerability assessment of livestock farming in Bayantümen sum												
Activity 2.1: Stakeholder meetings and site visit A kick-off meeting and consultations with stakeholders from national and local governments and other stakeholders (e.g., National Agency for Meteorology and Environmental Monitoring, Mongolian Meat Association, etc.) will be carried out (in-person or online[2]). Current situation and climate change-related issues as to livestock farming in the target area and in Mongolia as well as meat-processing and associated industry in the country will be identified. During this activity, the lead implementer with support from the national expert and the proponent will visit Bayantümen sum and carry out a site survey together with interviews with herding communities in the target area, as well as capture findings/lessons learnt from relevant past or ongoing research or interventions/projects.												
Activity 2.2: Organisation of the key stakeholders A restrictive group of key stakeholders (up to 8 persons) will be created. The key stakeholders shall maintain a gender balance and an adequate representation of vulnerable groups. They will provide a technical overview and a guidance at different stages of activities in this TA, reaching out to other stakeholders and experts as needed. For this purpose, the members of the key stakeholders should have the capacity to take key decisions with regards to identification of the appropriate pastureland management options and development of community-scale business models for climate-resilient livestock farming in Bayantümen sum.												
Activity 2.3: Climate change vulnerability assessment in Bayantümen sum												

[2] If the border lockdown is continued due to the COVID-19 pandemic, the lead implementer will take into account conducting the kick-off meeting and stakeholder consultations on an online basis with support from the national expert employed for the TA and the proponent.

The lead implementer with support from the national expert will conduct a climate change vulnerability assessment in Bayantümen sum, focusing on livestock farming and herding communities in the target area. Based on the concept of vulnerability defined by the Intergovernmental Panel on Climate Change (IPCC), the lead implementer will analyse and quantify hazards stemming from changes in temperature and rainfall (exposure), and assess not only the characteristics of the target area and its status of livestock farming and response to such hazards (sensitivity) but also its ability to deal with anticipated impacts (adaptive capacity). Through the climate change vulnerability assessment, which will include a gender and vulnerable groups analysis, it will be possible to estimate the extent of impacts of climate change on the target area and in particular impacts on livestock farming and herding communities in the target area, and prioritize necessary interventions based on the sensitivity of their elements.												
Activity 2.4: Organisation of a meeting with key stakeholders The results of Activity 2.3 will be shared with key stakeholders in a virtual meeting. In particular, the lead implementer will present the necessary interventions for livestock farming in Bayantümen sum identified through the climate change vulnerability assessment and get practical feedback from key stakeholders.												
Deliverables 2: ii) Report on the kick-off meeting, stakeholder consultations and site visit ii) Detailed description of the key stakeholders, with name and contact details of the members, respective institutions, gender, etc. iii) Report on the climate change vulnerability assessment in Bayantümen sum iv) Minute of the key stakeholder meeting with a list of participants disaggregated by gender, materials used, and summary of the discussions held												
Output 3: Identification of the pastureland management measures to be implemented for climate-resilient livestock farming in Bayantümen sum												

Activity 3.1: Enumeration of the pastureland management practices and associated technologies and their impacts on climate-resilient livestock farming Based on findings from the climate change vulnerability assessment (Activity 2.3) and feedbacks from key stakeholders (Activity 2.4), the lead implementer will investigate the cases and references on pastureland management practices and associated technologies, and estimate their influence on climate-resilient livestock farming. Moreover, previous and on-going efforts for pastureland management that national and local governments of Mongolia have conducted for climate-resilient livestock farming so far will be also identified during this activity. Innovative approaches are to be adopted to make recommendations by considering the cross-cutting best adaptation and mitigation practices for pasture management and livestock management integrating with ecosystem protection and restorations, and livelihoods.												
Activity 3.2: Selection of the most appropriate pastureland management practices and associated technologies for climate-resilient livestock farming in Bayantümen sum The lead implementer will undertake Multi-criteria Analysis (MCA) on the pastureland management practices identified in Activity 3.1 to select 2 – 3 most appropriate practices and associated technologies that can be adopted to enhance climate-resilient livestock farming in Bayantümen sum, with an estimate of the carrying capacity for livestock in the sum. The results of the MCA will be consulted further with the NDE of Mongolia and the proponent before organizing a key stakeholder meeting. The practices and technology measures identified with cross cutting innovative approaches, fed to the MCA will also address the potential GHG emissions under land use changes, fertilizer applications, loss of soil organic carbon, energy use, and transport. A life cycle analysis approach is recommended to be adopted using available tools like Cool Farm Tools.												
Activity 3.3: Organisation of a meeting with key stakeholders												

The results of Activity 3.1 and 3.2 will be shared with key stakeholders in a virtual meeting. In particular, the lead implementer will not only present the methodology and associated criteria used for the MCA but also introduce the selected pastureland management practices and associated technologies to key stakeholders.						■						
Deliverables 3: ii) Report on the pastureland management practices and associated technologies and their impacts on climate-resilient livestock farming ii) Report on the selection of the most appropriate pastureland management practices and associated technologies for climate-resilient livestock farming in Bayantümen sum iii) Minutes of the key stakeholder meeting with a list of participants disaggregated by gender, materials used, and summary of the discussions held					■	■						
Output 4: Development of business models with community-scale meat-processing system for climate-resilient livestock farming in Bayantümen sum							■	■	■	■		
Activity 4.1 Feasibility analysis of establishing a meat-processing center in Bayantümen sum The lead implementer will analyse the feasibility of establishing a meat-processing center in Bayantümen sum. Based on understanding of different meat-processing stages and associated technical options available, the operation of small, community-scale slaughtering and meat-packing processes will be assessed in the context of geographical, environmental and socio-economic conditions of the target area. Accessing energy to support the operation of the meat-processing center could be challenging for remote communities where the grids are not reachable or otherwise also, as it will add to the operational cost of the meat-processing. The efforts should be made to make the process, energy efficient through carefully identifying the energy intensive processes/ sub processes in the meat-processing center and assessing the energy efficient alternatives. In particular, amount of electricity for operating and maintaining the processes will be estimated (including the requirements for the refrigeration for storage), and availability and connectivity of electricity supply to Bayantümen sum (at district level 'sum' and/or at sub-district level 'bag') will be evaluated. Moreover, potential of the use of renewable energy to supply electricity to the processes depending on centralized or distributed (e.g., distributed meat-processing center with standalone Photovoltaic) will be also							■	■				

assessed together with identifying all the possible barriers, challenges and bottlenecks that can make the operation of the processes difficult in Bayantümen sum.												
Activity 4.2: Design of business models with a meat-processing center for climate-resilient livestock farming in Bayantümen sum Based on findings from Activity 4.1, the lead implementer will design business models that integrate small, community-scale meat-processing into climate-resilient livestock farming in Bayantümen sum. The recommendation on business model will be made focusing on most climate adaptive measures including the cooperative-based producer ownership and maintaining an export-ready standard, which will support to create a robust meat industry in Bayantümen sum, and allow its herding communities to maintain a smaller number of animals without having a detrimental effect on their household economy. After designing the business models, the lead implementer will assess the potential of their replication in other rural areas of Mongolia. Moreover, a list of financing mechanisms or instruments that can be used to finance the establishment of the business models in those areas will be identified and assessed.												
Activity 4.3: Organisation of a meeting with key stakeholders The lead implementer will 11rganize a virtual key stakeholder meeting to present findings from the feasibility analysis in Activity 4.1 and introduce the concept of the business models designed in Activity 4.2. In this meeting, key stakeholders will provide their feedback regarding the business models as well as a potential area for pilot testing of the business models as a following-up project of this TA.												
Deliverables 4: ii) Report on the feasibility analysis of establishing a meat-processing center in Bayantümen sum ii) Report on the design of business models with a meat-processing center for climate-resilient livestock farming in Bayantümen sum												

iii) Minute of the key stakeholder meeting with a list of participants disaggregated by gender, materials used, and summary of the discussions held												
Output 5: Capacity enhancement of government bodies and rural communities for climate-resilient livestock farming in Bayantümen sum												
Activity 5.1: Stakeholder workshops on climate-resilient livestock farming in Bayantümen sum The lead implementer will 12rganize and facilitate a 1-day workshop for national government officials as well as local government officials in Bayantümen sum. Key findings identified from Activity 3.1 and 3.2 (pastureland management practices and associated technologies for climate-resilient livestock farming) as well as the concept of the business models designed in Activity 4.2 will be provided to participants in the workshop. A second workshop would also be organized for livestock farmers/herder families in the target area, and other interested participants, including livestock farmers and community leaders from areas identified as potential areas for replication. Similarly, the workshop would cover (1) climate-resilient pastureland management practices and livestock farming, (2) promising business models under different conditions (at a minimum for areas with and without access to the grid), and (3) appropriate financing mechanisms available. (The two workshops could be combined, if felt more appropriate and effective.) After the workshops, satisfaction survey from participants will be conducted to identify the level of their understanding regarding pastureland management practices for climate-resilient livestock farming and the business model designed through this TA.												
Deliverables 5: ii) Report on the stakeholder workshops (including results of the satisfaction survey) ii) Stakeholder workshop materials												

4. Resources required and itemized budget:

Please provide an indicative overview of the resources required and itemized budget required to implement the CTCN technical assistance, including for M&E-related activities, using the table below. Important to note that minimum 1% of the budget should explicitly target gender specific activities related to the technical assistance (please see section 10 for further information on gender). Once the Response Plan is completed, a Response Implementation partner(s) will be selected by the Climate Technology Centre (CTC). A detailed activity-based budget for the CTCN assistance will be finalized by the CTCN and selected Implementer.

Activities and Outputs	**Input: Human Resources** *(Title, role, estimated number of days)*	**Input: Travel** *(Purpose, national vs. international, number of days)*	**Inputs: Meetings/events** *(Meeting title, number of participants, number of days)*	**Input: Equipment/Material** *(Item, purpose, buy/rent, quantity)*	**Estimated cost** *Please accumulate the costing at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan*	
					Minimum	**Maximum**
Output 1: Development of implementation planning and communication documents					***5,500***	***8,500***
Activity 1: i) Detailed work plan, ii) M&E plan and impact statement, iii) Technical assistance closure report	*I1: 3 days* *I2: 3 days* *I3: 3 days* *I4: 3 days* *N1: 3 days* *N2: 3 days*				*5,500*	*8,500*
nOutput 2: Stakeholder consultations and climate change vulnerability assessment of					***51,200***	***63,200***

livestock farming in Bayantümen sum						
Activity 2.1: Stakeholder meetings and site visit	*I1: 8 days* *I2: 8 days* *I4: 8 days* *N1: 5 days* *N2: 8 days*	*[International travel]* *3 international experts for the duration of 5 days each for the kick-off meeting, stakeholder consultations and the site visit* *[Domestic travel]* *3 international experts and 1 national expert for the duration of 1 day each for the site visit*	*Kick-off meeting, 10 participants (including women's representative), 1 day* *Stakeholder consultations, 15 participants (including women's representative), 1 day*		*23,600*	*26,600*
Activity 2.2: Organisation of the key stakeholders	*I1: 2 days* *I2: 2 days* *I3: 2 days* *I4: 2 days* *N1: 2 days* *N2: 2 days*				*3,200*	*6,200*
Activity 2.3: Climate change vulnerability assessment in Bayantümen sum	*I1: 5 days* *I2: 15 days* *I3: 10 days* *I4: 5 days* *N1: 5 days* *N2: 15 days*	*[Domestic travel]* *1 national expert for the duration of 2 days for gathering the practical information and/or field data (if required)*			*18,600*	*21,600*
Activity 2.4:	*I1: 4 days* *I2: 4 days*		*Key stakeholder meeting (online), 8*		*5,800*	*8,800*

Organisation of a meeting with key stakeholders	*I3: 4 days* *N1: 2 days* *N2: 4 days*		*participants (including women's representative), 1 day*			
Output 3: Identification of the pastureland management measures to be implemented for climate-resilient livestock farming in Bayantümen sum					***36,200***	***45,200***
Activity 3.1: Enumeration of the pastureland management practices and associated technologies and their impacts on climate-resilient livestock farming	*I1: 5 days* *I2: 5 days* *I3: 15 days* *N1: 5 days* *N2: 15 days*	*[Domestic travel]* *1 national expert for the duration of 2 days for gathering the practical information and/or field data (if required)*			*15,000*	*18,000*
Activity 3.2: Selection of the most appropriate pastureland management practices and associated technologies for climate-resilient	*I1: 8 days* *I2: 5 days* *I3: 10 days* *I4: 5 days* *N1: 5 days* *N2: 10 days*				*15,400*	*18,400*

livestock farming in Bayantümen sum						
Activity 3.3: Organisation of a meeting with key stakeholders	*I1: 4 days* *I2: 4 days* *I3: 4 days* *N1: 2 days* *N2: 4 days*		*Key stakeholder meeting (online), 8 participants (including women's representative), 1 day*		*5,800*	*8,800*
Output 4: Development of business models with community-scale meat-processing system for climate-resilient livestock farming in Bayantümen sum					***54,800***	***63,800***
Activity 4.1 Feasibility analysis of establishing a meat-processing center in Bayantümen sum	*I1: 10 days* *I2: 5 days* *I3: 5 days* *I4: 15 days* *N1: 5 days* *N2: 15 days*	*[International travel]* *2 international experts for the duration of 4 days each for the feasibility analysis* *[Domestic travel]* *2 international experts and 1 national expert for the duration of 2 days each for the feasibility analysis*			*25,800*	*28,800*
Activity 4.2:	*I1: 10 days* *I2: 5 days*				*21,800*	*24,800*

Design of business models with a meat-processing center for climate-resilient livestock farming in Bayantümen sum	*I3: 5 days* *I4: 20 days* *N2: 20 days*					
Activity 4.3: Organisation of a meeting with key stakeholders	*I1: 4 days* *I2: 4 days* *I3: 4 days* *I4: 4 days* *N1: 2 days* *N2: 4 days*		*Key stakeholder meeting (online), 8 participants (including women's representative), 1 day*		*7,200*	*10,200*
Output 5: Capacity enhancement of government bodies and rural communities for climate-resilient livestock farming in Bayantümen sum					***25,900***	***28,900***
Activity 5.1: Stakeholder workshops on climate-resilient livestock farming in Bayantümen sum	*I1: 5 days* *I2: 5 days* *I3: 10 days* *I4: 10 days* *N1: 5 days* *N2: 10 days*	*[International travel] 3 international experts for the duration of 4 days each for the stakeholder workshops* *[Domestic travel] 3 international experts and 2 national experts*	*Stakeholder workshop (government bodies), 20 participants (including women's representative), 1 day* *Stakeholder workshop (rural communities), 20 participants (including*		*25,900*	*28,900*

		for the duration of 3 days each for the stakeholder workshops	*women's representative), 1 day*			
Estimated range of costing for the entire Response Plan					***173,600***	***209,600***

5. Profile and experience of experts

Based on the required Human Resources identified in section 4 (Resources required and itemized budget) please provide a description of the required profile of all involved experts for the implementation of the CTCN Response Plan.

Experts required	Brief description of required profile
Please use the same titles for all experts as applied in section 4.	*Please provide a short description of expertise and experience needed (education, sectors of expertise, years of experience, country experience, language requirements, etc.).*
Project Manager (I1) (International expert)	The project manager shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in agricultural engineering, technology and/or management or a relevant major • Experience in leading and managing a project and a team of experts from different cultural background and fields of expertise • At least 10 years of experience in designing and/or deploying climate technologies and developing associated business models for climate-resilient livestock farming • At least 5 references demonstrating experience in the development of business models for climate-resilient livestock farming in developing countries • Experience in organising workshops and/or capacity building trainings • Previous experience in Mongolia will be valued. • Excellent written and communication skills in English are required.
Expert in climate change vulnerability assessment (I2) (International expert)	The expert in climate change vulnerability assessment shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in climate technology and management, climate change response, agricultural engineering and/or technology or a relevant major • At least 8 years of experience in assessing climate change vulnerability in agriculture sector • At least 5 references demonstrating experience in climate change vulnerability assessment for climate-resilient livestock farming in developing countries, including in-depth analysis of gender and vulnerable groups

	• Experience in organising workshops and/or capacity building trainings • Previous experience in Mongolia will be valued. • Excellent written and communication skills in English are required.
Expert in agricultural technology and management (I3) (International expert)	The expert in agricultural technology and management shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in agricultural engineering and/or technology, climate technology or a relevant major • At least 8 years of experience in identifying, evaluating, and/or deploying climate adaptation and mitigation technologies for climate-resilient livestock farming and best practices on pastureland management. • At least 5 references demonstrating experience in the identification, evaluation and/or deployment of climate technologies for climate-resilient livestock farming in developing countries • Experience in organising workshops and/or capacity building trainings • Previous experience in Mongolia will be valued. • Excellent written and communication skills in English are required.
Expert in meat-processing system design (I4) (International expert)	The expert in meat-processing system design shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in agricultural engineering and/or technology or a relevant major • At least 8 years of experience in designing and installing meat-processing system • At least 5 references demonstrating experience in the design and installation of the meat-processing system in developing countries • Previous experience in Mongolia will be valued. • Excellent written and communication skills in English are required. .
Gender expert (N1) (National expert)	The gender expert shall have the following expertise and experience: • Bachelor's degree or above (or equivalent experience) in social science or a relevant major • At least 8 years of experience in gender studies and/or management of equality policies • At least 2 references demonstrating experience in gender studies in agriculture sector in developing countries • Excellent written and communication skills in Mongolian and English are required.

	• It is expected that the gender expert will be based in Mongolia or with the availability to travel frequently and for long periods of time in Mongolia.
Agriculture engineer (N2) (National expert)	The agriculture engineer shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in agricultural engineering, technology and/or management or a relevant major • At least 8 years of experience in the field of livestock farming in Mongolia • Excellent written and communication skills in Mongolian and English are required. • It is expected that the agriculture engineer will be based in Mongolia or with the availability to travel frequently and for long periods of time in Mongolia.

6. Intended contribution to impact over time

Please provide a brief description of the intended contribution to impact over time of the outcome and outputs provided by this technical assistance on resilience to climate change and/or carbon abatement. To the extent possible, please quantify the intended impact contribution, for example by indicated estimated number of people potentially impacted over time, GDP contribution of the focus sector, carbon emissions by the focus sector, etc. This intended contribution to impact is what will happen if the objective (as articulated in section 3) is met. Please ensure relevant complementarity with text in sections 7 to 12. (maximum 1250 characters including spaces)

In Mongolia, pastureland has not been demarcated, and therefore herders have been able to cope with localised droughts by taking advantage of their mobility. This has been the key survival strategy of rural herding communities in the country for millennia. To support their mobility, various private and governmentally initiated projects have been implemented, providing mobile technologies such as solar panels and low-voltage household electronics.

However, more sustainable measures would be required to enhance climate resilience of livestock farming at local/community levels in Mongolia as well as to generate stable incomes of rural herding communities with community-scale, sound business models in long-term perspective. Findings from the TA will contribute to enhancing climate-resilient livestock farming and economic sustainability of herding communities in Bayantümen sum, Mongolia.

7. Relevance to NDCs and other national priorities

Please identify relevance and contribution from the technical assistance to the Nationally Intended Contributions (NDC) and other relevant national prioritized efforts (TNAs, TAPs, NAPs, NAMAs, etc.). (maximum 2500 characters including spaces)

The TA is in line with national strategies and plans of Mongolia for climate change response.

- **Nationally Determined Contribution (2020):** Annex 1: Mongolia's NDC target by 2030 - D. Adaptation Targets
  - **Animal husbandry and pastureland (page 6):** Sustainable use of pastureland by increasing the forage cultivation and water supply for livestock
  - **Animal husbandry and pastureland (page 6):** Enhance the disaster prevention system against drought and dzud
  - **Livelihood and social safeguard (page 8):** Reduce vulnerability by diversifying economic activities, increasing income, expanding income sources and supporting sustainable livelihoods

- **Mongolia Sustainable Development Vision 2030 (2016):** 2. Sustainable development objectives of Mongolia - 2.1 Sustainable economic development - 2.1.1 Agriculture sector
  - **Objective 1 (page 13):** Preserve the gene pool and resilience of pastoral livestock breeding that is adept to climate change, increase productivity; create proper flock structure of livestock in line with grazing capacity, reduce the grazing and land deterioration and rehabilitate, adopt international standards in animal disease traceability, inspection and maintenance technology, and develop livestock sector that is competitive in international markets

- **Objective 2 (page 13):** Develop intensive livestock farming based on the population concentration and market demand; increase the manufacture of meat and milk products; and develop the supply, storage and transportation network for raw materials and raw products
- **Objective 4 (page 15):** Support the business and economics of herders and herder groups, and small and medium sized farmers; provide modern techniques, technologies and electricity; and create a financial, economic and legal environment for sustainable production

8. Linkages to relevant parallel on-going activities:

Please identify relevant previous and ongoing public and private sector initiatives, projects or programmes that the CTCN assistance will specifically build on and contribute to. To the extent possible, please add practical and operational details on the linkages between existing activities and the CTCN assistance. (maximum 2500 characters including spaces)

E-Nomads programme which is being administrated by the proponent (NEARC) has been building a social network of rural communities in Mongolia. Currently, the network is used for spreading reliable information on the prevention of COVID-19 through broadcasting interviews with doctors and producing podcasts tailored to the needs of herders. Findings from the TA would be disseminated to rural herding communities not only in Bayantümen sum but also other sums in Mongolia by using the network.

9. Anticipated follow up activities after this technical assistance is completed:

Please describe the expected future use of the outputs and deliveries produced by this technical assistance, after the CTCN implementation is completed, towards contributing to the anticipated impacts over time articulated in section 6. For example, what organizations or stakeholders will use the outputs of the technical assistance after it is completed, for what purpose, at what scale and scope the outputs and deliveries will be applied, when and what will be the next steps undertaken, etc. (maximum 2500 characters including spaces)

Once the TA is completed, the local government with support from the NDE of Mongolia and other Ministries could implement pastureland management practices and associated technologies which are to be identified through the TA for climate-resilient livestock farming in Bayantümen sum. Moreover, as a following-up project of the TA, a pilot testing of the business models with community-scale meat-processing system for climate-resilient livestock farming could be conducted in Bayantümen sum. If the business models are suitable and prove to generate economic sustainability of herding communities in Bayantümen sum, more projects/programmes could be launched to replicate the business model in other sums of Mongolia.

10. Gender and co-benefits:

Imbedded in design of the activities:	*A gender mainstreaming analysis is mandatory to include for all technical assistances. A gender expert will be assigned to carry out an assessment and evaluation regarding gender mainstreaming during the implementation of the TA.*

	In addition, please describe all support to gender aspects, women's equality and other co-benefits embedded into the Response Plan (please include a reference to the actual activities and outputs as described in section 3). Most activities of the TA are designed with an imbedded intention of gender mainstreaming and providing other co-benefits to vulnerable groups. The lead implementer will be requested to assign a gender expert to conduct the monitoring and evaluation of gender mainstreaming during the implementation of the TA.
Gender and co-benefits intended as result of the activities:	*Please describe all gender aspects, women's equality and other co-benefits expected as a result of the CTCN technical assistance.* Application of the business models with community-scale meat-processing system to be designed through the TA are expected to increase employment opportunities to women in Bayantümen sum. Moreover, following-up projects/programmes on implementing pastureland management practices and associated technologies to be selected through the TA as the most appropriate measures for climate-resilient livestock farming are expected to bring about social and environmental welfare to women and vulnerable groups living in the target area.

11. Main in-country stakeholders in implementation of the technical assistance activities:

Using the table below, please list and describe the role of in-country stakeholders, participants and beneficiaries who will be involved in or directly consulted during implementation of the assistance.

In country stakeholder	Role in implementation of the technical assistance
Climate Change Department, Ministry of Environment and Tourism of Mongolia *(National Designated Entity)*	- Support for coordination of the TA and facilitation of stakeholder engagement - Provision of overall feedback to the CTCN and the lead implementer during the implementation of the TA
Northeast-Asian Environmental and Agricultural Research Center (NEARC) *(TA Proponent)*	- Support for coordination of the TA and facilitation of stakeholder engagement - Provision of feedback (practical and technical components) to the CTCN and the lead implementer during the implementation of the TA
Authorities of the Dornod province and Bayantümen sum	- Consultation about pastureland management measures for climate-resilient livestock farming in Bayantümen sum - Consultation about business models with community-scale meat-processing system for climate-resilient livestock farming in Bayantümen sum
National Agency for Meteorology and Environmental Monitoring	- Support for data collection for and consultation about climate change vulnerability assessment in Bayantümen sum

Ministry of Food, Agriculture and Light Industry of Mongolia	- Consultation about business models with community-scale meat-processing system for climate-resilient livestock farming in Bayantümen sum - Consultation about industry standards to ensure the fulfilment of domestic and export marketing criteria
General Agency for Specialized Inspection (GASI)	- Consultation about industry standards to ensure the fulfilment of domestic and export marketing criteria
Mongolian Meat Association (MMA)	- Consultation about industry standards to ensure the fulfilment of domestic and export marketing criteria
Herding households of Bayantümen sum (especially those of the 4th bag)	- Provision of feedback on the changes in pasture usage patterns and intensity to improve climate change resilience as compensated by the new meat-processing capacity in their community - Consultation about business models with community-scale meat-processing system for climate-resilient livestock farming in Bayantümen sum

12. SDG Contributions:

*Instructions: Please complete the grey section below for **a maximum of three SDGs** that will be advanced through this TA. A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/.*

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3 SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	This TA will identify the most appropriate pastureland management practices and associated technologies for climate-resilient livestock farming, which will contribute to promoting sustainable agriculture in Bayantümen sum against climate change.
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	
6	Ensure availability and sustainable management of water and sanitation for all	
7	Ensure access to affordable, reliable, sustainable, and modern energy for all (consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3 - By 2030, double the global rate of improvement in energy efficiency	
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	This TA will deliver the concept of business models with community-scale meat-processing system, which will strengthen climate-resilient livestock

		farming and economic sustainability of herding communities in Bayantümen sum.
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	This TA will contribute to enhancing climate-resilient livestock farming in Bayantümen sum by identifying the most appropriate pastureland management practices and associated technologies as well as designing business models with community-scale meat-processing system.
	13.2 - Integrate climate change measures into national policies, strategies and planning	
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	This TA will provide the 1-day workshop for national/local government officials, supporting them to increase their knowledge on and their capacity for climate-resilient livestock farming.
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please indicate primary type of technical assistance. Optional: If desired, indicate secondary type of technical assistance.

Please tick off the relevant boxes below	*Primary*	*Secondary*
☐ 1. Decision-making tools and/or information provision	☐	☐
☐ 2. Sectoral roadmaps and strategies	☐	☐
☐ 3. Recommendations for law, policy and regulations	☐	☐
☐ 4. Financing facilitation	☐	☐
☐ 5. Private sector engagement and market creation	☐	☐
☐ 6. Research and development of technologies	☐	☐
☐ 7. Feasibility of technology options	☑	☐
☐ 8. Piloting and deployment of technologies in local conditions	☐	☐
☐ 9. Technology identification and prioritisation	☐	☑

Please note that all CTCN technical assistance contributes to strengthening the capacity of in country actors.

14. Monitoring and Evaluation process

Upon contracting of the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. The monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation. The CTCN Technology Manager responsible for the technical assistance will monitor the timeliness and appropriateness of the Response Plan implementation. Upon completion of all activities and outputs, evaluation forms will be completed by the (i) NDE about overall satisfaction level with the technical assistance service provided; (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance; and (iii) the CTCN Director about timeliness and appropriateness of the delivery of the activities and outputs