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## Leveraging Tradition and Science in Disaster Risk Reduction in Mongolia-2 (LTS2-Mongolia)

### SIXTH QUARTERLY REPORT

**Agreement # AID-OFDA-G-15-00101**

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*Submitted By: Mercy Corps*

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## ACRONYMS AND TRANSLATIONS

<i>Aimag</i>	An administrative unit similar to a province or state
<i>APF</i>	Aimag Partnership Facilitator
<i>bagh</i>	An administrative unit similar to a sub-county (sub-soum)
<i>dzud</i>	An environmental hazard that unfolds over several seasons and includes drought conditions in the summer leading to poor forage availability and low temperatures, heavy snows and/or ice in winter which combine to exhaust animals, leading to death from starvation or exposure.
ES	engageSPARK
EMA	Emergency Management Agency
FAO	Food and Agriculture Organization of the United Nations
<i>Hural</i>	An elected decision-making body at the district, province and national level
ICT	Information and Communication Technology
KEIO	Keio University of Japan
LEWS	Livestock Early Warning System
LEGS	Livestock Emergency Guidelines and Standards
LEMA	Local Emergency Management Agency
LTS	Leveraging Tradition and Science in Disaster Risk Reduction in Mongolia
MEGD	Ministry of Environment and Green Development
MNO	Mobile Network Operator
MNDI	Mongolian National Development Institute
MOFALI	Ministry of Food, Agriculture and Light Industry
NAMEM	National Agency of Meteorology and Environmental Monitoring
NEMA	National Emergency Management Agency
RIMES	Regional Integrated Multi-Hazard Emergency Warning System
NUM	National University of Mongolia
SMS	Short Message Service
SDC	Swiss Agency for Development and Cooperation
<i>soum</i>	An administrative unit similar to a county
ToT	Training of Trainers
UNDP	United Nations Development Programme
WB	World Bank

## GENERAL INFORMATION

<b>Project name:</b>	Leveraging Tradition and Science in Disaster Risk Reduction in Mongolia 2
<b>Duration:</b>	May 1, 2015 to June 30, 2017
<b>Funding:</b>	Total funding: \$1,078,206.00      USAID: \$1,078,206.00
<b>Direct Beneficiaries:</b>	Government representatives and local authorities; community representatives, herder organizations and herders (total 49,354)
<b>Indirect:</b>	Rural residents in 15 aimags (total 451,616)
<b>Reporting period:</b>	July 1, 2016 to September 30, 2016
<b>Target area:</b>	128 Soums of 15 Aimags

Region	Aimags	Highly dzud affected soums (counties)
West	Hovd (HO)	Altai, Bulgan Uench, Must, Munhkhairkhan, Darvi and Chandmani
	Uvs (Uv)	Baruunturuun, Davst, Zuungobi, Zuunkhangai, Malchin, Naranbulag, Undurkhangai, Sagil, Tes, Turgen, Khyargas, Tsagaankhairkhan and Umnugovi, Tarialan and Ulgii
	Bayan-Ulgii (BU)	Altai, Bulgan, Sagsai, Ulaankhus, Tsengel, Bayannuur, Tsagaannuur and Nogoonnuur
Altai	Zavhan (ZA)	Aldarkhaan, Asgat, Bayantes, Bayankhairkhan, Ider, Numrug, Songino, Tosontselgel, Tudevtei, Telmen, Tes, Tsagaankhairkhan, Tsagaanchuluut, Tsetsen-Uul, Erdenekhairkhan, Ih-Uul, Otgon, Yaroo and Shiluustei
	Gobi Altai (GA)	Bugat Bayan-Uul Delger Tonkhil Tugrug Khaliun, Sharga, Taishir, and Tseel

	Huvsgul (HU)	Bayanzurkh, Galt, Jargalant, Tsagaannuur, Tsagaan-Uur, Tsagaan-Uul, Chandmani-Undur, Rinchinlkhumbе, Ulaan-Uul, Khankh and Erdenebulgan
<b>Hangai</b>	Uvurhangai (UH)	Bat-Ulzii, Bayan-Undur, Burd, Kharkhorin, Khujirt, Ulziit, Yesunzuil, Zuunbayan-Ulaan, Uyanga and Nariinteel
	Arkhangai (AR)	Bulgan, Ugiinuur, Tuvshruulekh, Khashaat, Khotont, Tsenkher, Tariat, Tsakhir, and Khangai,
	Bayankhongor (BH)	Bayanbulag, Bayan-Ovoo, Gurvanbulag, Jargalant, Jinst, Zag, Ulziit, Khureemara, Erdenetsogt, and Galuut
<b>Gobi</b>	Dundgobi (DG)	Adaatsag, Erdenedalai, Bayanjargalan, Gobi-Ugtaal, Gurvansaikhan and Undurshil
	Umnugobi (UG)	Bulgan, Sevrei and Khurmen
	Selenge (SE)	Altanbulag and Yeruu
<b>East</b>	Sukhbaatar (SU)	Asgat, Dariganga, Erdenetsagaan, Bayandelger, Naran, Ongon, Suhbaatar and Tuvshinshree
	Dornogobi (DO)	Airag, Altanshree, Dalanjargalan, Delgereh and Ikhkhet
	Khentii (HE)	Bayanmunh, Bayankhutug, Bor-undur, Galshar, Darhan and Delgerkhaan

## EXECUTIVE SUMMARY

Mercy Corps began supporting the use of weather and pasture data in production planning through the Gobi Forage project resulting in the introduction of the Livestock Early Warning System (LEWS) in 2007. The LEWS system continues to receive international development support from the World Bank. A number of government agencies<sup>1</sup> in Mongolia are now tasked with creating and distributing information on weather risk and weather forecasts, but with little coordination and no clearly defined goals on reaching end-users. In this context, information and knowledge products are being produced, but they are not reaching local communities, herder households, local administrators and first responders who can utilize such necessary information.

From June 2013 to September 2014, OFDA supported Mercy Corps' efforts to solve this communication breakdown through training and information delivery systems. The *Leveraging Tradition and Science in Disaster Risk Reduction in Mongolia* (LTS) project evaluated existing DRR and disaster management systems, connected local communities to weather information, trained local administrations on emergency management planning, and tested an SMS information platform that would enable herding communities to access, interpret and apply weather forecast information in their management practices. The LTS project theorized that there was strong demand for information and for management tools that could improve planning, mitigation and management of winter weather risks and this was validated through effective program implementation. Working closely with local partners and key national emergency management actors, LTS introduced planning tools that are simple to implement; provided increased understanding of available weather information and how to utilize it; and identified opportunities for significant improvement in dzud outcomes through simple management tools and improved information flow. LTS demonstrated that herders are eager for more information and better tools to support dzud preparation and risk mitigation.

Expanding upon our initial work, the LTS2 project is accomplishing three goals: 1) completing construction of a national SMS platform for weather and pasture information delivered directly to herders; 2) increased aimag (province) and soum-level capacity to provide training on emergency planning, preparation and mitigation to segmented audiences within the local community; and 3) introducing local communities to sustainable mitigation activities based on the Livestock Emergency Guidelines and Standards (LEGS) to address current year dzud effects on individual households and communities. Mercy Corps is implementing LTS2 project in collaboration with the National Emergency Management Agency (NEMA), the Livestock Early Warning System (LEWS), the National Agency of Meteorology and Environment Management.

<sup>1</sup> The National Emergency Management Agency (NEMA); NAMEM; the Ministry of Environment and Green Development (MEDG); aimag Governors' Offices; aimag agriculture and veterinary extension workers, and soum governments.

## PROJECT IMPLEMENTATION AND OUTCOMES

This quarterly report covers the period between from July 1, 2016 to September 30, 2016 in which the program focused on signing the Letter of Agreement between Food and Agriculture Organization of the United Nations (FAO) and Mercy Corps to provide trainings on Livestock Emergency Guidelines and Standards (LEGS), translating the LEGS handbook from English to Mongolian, identifying regional codes for the new target soums and preparing to connect the soums with SMS system.

Period	Activities	Outcomes
Jul 1, 2016 – Sep 30, 2016	<ul style="list-style-type: none"> <li>• The representatives of OFDA and USAID visited Ider soum, Zavhan aimag to meet with beneficiaries and partners.</li> <li>• FAO and Mercy Corps signed the Letter of Agreement for provision of LEGS training</li> <li>• LEGS handbook was translated from English to Mongolian. Mercy Corps will print this handbook and distribute it in all target soums in October 2016.</li> <li>• Identified and added area codes for 282 baghs in the new target 60 soums. These codes must be added to the server in order to receive the weather forecasts via SMS.</li> </ul>	<ul style="list-style-type: none"> <li>• SMS system received 6,231 text requests from mobile users and 5,388 responses were sent to them via their cell phones.</li> <li>• The herders are using weather information through the SMS system to plan their daily work: manage their herds, cut hay, set up camps, move to new pastures, shear wool etc.</li> </ul>

### Program Set Up

The project launched on May 1, 2015 with the formation of the project team from within existing Mercy Corps staff.

### Partner Coordination

The LTS2 project team continued working with the Alpha Labs LLC on expanding the SMS system into new areas. The team worked with NEMA to expand the SMS system, jointly organize LEGS trainings at soum and aimag level, improve soum disaster plans and reduce negative effects of the last dzud. The LTS2 team also partnered with FAO to translate the LEGS book into Mongolian and organize LEGS training for NEMA, Ministry of Food, Agriculture and Light Industry (MOFALI) and Mercy Corps staff.

### Risk Management Policy and Practice

#### Sub-sector: Building Community Awareness/Mobilization

##### Activity 1.1 SMS System Design

Based on the analysis and recommendations of Mercy Corps' Senior Director for Program Technology, the LTS2 team initiated work on the SMS delivery system based on the engageSPARK (eS)<sup>2</sup> platform. Over the last twelve months, the system was completed and it delivers on-demand weather and pasture updates in response to text prompts from the user. The weekly forecasts are updated automatically and delivered via engageSpark.

##### Activity 1.2 SMS Message System Implementation

During the reporting period, Alpha Labs LLC worked on connecting the new target soums with the SMS system and assessed the changes in the system. In addition, the LTS2 team is working with the Communication and Early Warning Department of NEMA to further improve the system. Meetings were held between NEMA and LTS and the LTS team introduced to NEMA the program's system. Since the meeting, there are discussions to jointly develop an improved system and NEMA provisionally suggested the following ideas:

1. NEMA will support the program to use the NAMEM local weather source. Currently the program uses [www.forecast.io](http://www.forecast.io). NAMEM is the only professional institute on Meteorology and Environment in Mongolia (for weather forecast). Most government officials prefer to use local sources as they do not know how reliable forecast.io is. LTS2 has hired a consultant, who is currently working on assessing our SMS system, to test weather information from both sources to monitor the accuracy. Whichever source is proven to be the most accurate will be the preferred choice, however, people will have the option to choose the source that they prefer.

2. Utilize the system to provide early warning messages to the community in the instances of a disaster (e.g. flood, storm, forest fire etc.)

After assessing the SMS system, the team will meet again and develop a plan for improvement.

### **Activity 1.3 Community Mobilizations**

During the reporting period, the LTS weather forecast SMS system received 6,231 text requests from mobile users and delivered 5,388 responses, according to engageSPARK generated report. A total of 843 (13%) of the SMS requests didn't receive a response due to a variety of circumstances. Most errors were made by users who either mistyped or typed wrong or incomplete requests. The rest was caused by temporary malfunctioning of the engageSPARK application or server, sudden disconnection of the server by mobile operator and poor connectivity (no network coverage or phone power was off). The program team is analyzing these issues and working with local communities and mobile operators to prevent future issues.

The LTS2 project team plans to further develop the system to create a unified service to communicate all types of emergency information to local residents in collaboration with national agencies such as NEMA, NAMEM, MOFALI, the Red Cross Society, World Vision and others. These agencies are heavily engaged with emergency work in Mongolia and the LTS2 team introduced the SMS system during several meetings. All expressed interested to use the system for early warnings and to provide essential information to the local community. For example: NEMA can use the system to provide early warning messages about floods, forest fires, wind storms etc. In return, NAMEM can provide the program with their products such as weather forecasts, pasture yields and winter seasonal forecast information. MOFALI's support can provide livestock related information such as livestock disease outbreak, information of vet drug registration etc. The Red Cross and World Vision are discussing the use of the system in their target areas. Furthermore, NEMA is interested to connect all soums in Mongolia to the system.

## **Sub-sector: Capacity Building and Training**

### **Activity 2.1 Partner Mobilization and Planning**

On 24 August 2016, a Letter of Agreement was signed between FAO and Mercy Corps Mongolia. During the reporting period Mercy Corps accomplished the following activities:

- i) Translated the second edition of LEGS handbook
- ii) Finished preparation for the LEGS training at the national level

Mercy Corps translated the LEGS handbook according to LEGS committee authorization funded by FAO TCP/MON/3603 (E) "Emergency assistance to support drought-dzud response and resilience" project. This handbook has essential guidelines and standards, introduced in Mongolia for the first time in the native language. After translating the book, Mercy Corps will introduce the Standards and Guidelines at several levels during the LEGS trainings. First, the LTS2 team will organize LEGS training at the national level for local and national EMA, MOFALI and Mercy Corps staff. Then Mercy Corps and local EMA staff will provide training at aimag level for soum local trainers. After that, the soum local trainers will provide training to the local community. In the end, the Soum disaster plan will be improved according to the LEGS standards through participative approaches.



**Photo 1. Introducing the Mongolian version of LEGS handbook during the training**



**Photo 2. Training participants doing group work using the LEGS handbook**

### **Activity 2.2 Curriculum Development**

LTS2 team worked with NEMA to develop a training curriculum adapted for target aimag and soum conditions. Mercy Corps will organize the LEGS training at national, aimag and soum levels. Generally, the training will follow the LEGS training outline. However, the training curriculum needs to be adapted to and identify the different local conditions. The training participants will work on different case studies and local emergency-related agencies that need to provide information, such as Local EMA, Meteorology and Environment Agency and the Agricultural department. For instance, the Hangai region is frequently hit by dzud; the Eastern aimags are most affected by wildfires; the Western region is prone to outbreaks of infectious animal diseases and floods; and Altai region has lots of snow and sand storms. In the above case, NEMA and Mercy Corps staffs will improve and consider the training curriculum. The training agenda will include SMS system introduction, system testing for local community, and the provision of the Dzud lessons learned book.

### **Activity 2.3 Training of Trainers and Direct Training**

LEGS training is expected to take place in October 2016.

## **Agriculture and Food Security**

### **Sub-sector: Livestock**

#### **Activity 3.1 Planning**

Mercy Corps is discussing with NEMA, MOFALI and FAO on how to coordinate more effectively on joint recovery and mitigation efforts in the future to reduce the negative effects of last year's dzud. Progress under this activity will be reported in more detail in the next quarterly report.

Currently, the LTS2 team has identified regional Dzud mitigation activities based on the LEGS' six interventions (i.e. destocking, veterinary support, feed supplies, provision of water, livestock shelter and settlement, and provision of livestock). As the project team cannot provide all supports to the target soums due to budget restrictions, the team is working to select the targets and interventions supported by national and local stakeholders and partners particularly after the LEGS training. This is because after completing LEGS training, the local authorities and communities generally have a good understanding on how to design response options and learn best practices. Their newly obtained knowledge will help to transparently select the targets and high quality interventions.

## **LTS2 PROJECT IMPACT**

### **SMS System Helps Herders Better Manage their Livestock**

In Mongolia, most people receive weather information from TV and radio. The weather forecast usually contains very general information on precipitation, temperature, and wind for the whole aimag. For instance, the weather information may cover the south-eastern or north-western part of a particular aimag, but there might be no information available for soums and baghs.

Based on only general information, the herders plan their daily work managing the herd, cutting hay, building camps, moving to new pastures or shearing wool. An inaccurate weather forecast can negatively affect the herders. In July 2015, about 18,000 head of sheep froze to death as a result of five days of cold rain in Zavhan. Local herders chose the wrong day to shear wool, and as a result, the sheep without wool were vulnerable to the cold temperatures.

Mercy Corps' Leveraging Tradition and Science 2 (LTS2) project (funded by USAID), created an SMS notifications system to help local herders get bagh-specific weather information on their mobile phones. Herder S. Bayanmunkh from Zavhan is one of those beneficiaries. "This new SMS system is very important for herders," says Bayanmunkh. "We are able to get weather information for our bagh and make proper work plans." Within two months, he received 21 text messages with weather information. The SMS messages helped him to choose sunny days to shear his sheep. His sheep were suited to the weather conditions -- and Batmunkh didn't lose a single animal.

## ANNEXES

## Annex 1: Performance against indicators

Indicator	Baseline	Target at original proposal	annual progress Performance	Notes	Target at Cost modification	Total Target	Q6 Performance	Notes	LOP Performance	Notes
<b>SECTOR: RISK MANAGEMENT POLICY AND PRACTICE</b>										
<b>1 Sub-sector Name: Building Community Awareness/Mobilization</b>										
1.1 Number of people participating in training, disaggregated by sex	n/a	7,640	4,478	(2,069 female and 2,409 male)	6,163	13,803	0		4,478	(2,069 female and 2,409 male)
1.2 Percentage of people trained who retain skills and knowledge after two months	n/a	100%	100%			100%				
1.3 Percentage of attendees at joint planning meetings who are from the local community	n/a	90%	97.7%			90%				
1.4 Early warning system in targeted community is in place for all major hazards with appropriate outreach to communities	n/a	Yes	Yes	SMS system has built in 345 bagh of 69 soums of 10 aimags		Yes			Yes	SMS system has built in 345 bagh of 69 soums of 10 aimags
1.5 Percentage of community members who received at least one early warning message from at least one source prior to a disaster occurring	0	6%				6%				
<b>2 Sub-sector Name: Capacity Building and Training</b>										
2.1 Number of people trained in disaster preparedness, mitigation, and management, disaggregated by sex;	n/a	1,528	2,287	(1,015 female and 1,272 male)	1,263	2,791	0		2,287	(1,015 female and 1,272 male)
2.2 Number of trainings conducted	n/a	75	145				0		145	
2.3 Number of people passing final exams or receiving certificates, disaggregated by sex	n/a	1,528	2,180	(971 female and 1,209 male)		2,791	0		2,180	(971 female and 1,209 male)
2.4 Percentage of people trained who retain skills and knowledge after two months.	n/a	100%	100%			100%			100%	
<b>3 Sub-sector Name: Livestock</b>										
3.1 Number of animals benefiting from or affected by livestock activities	n/a	n/a	0		TDB	TDB	0		0	
3.2 Number of people benefiting from livestock activities, by sex	n/a	n/a	0		32,760	32,760	0		0	
3.3 Number of soums implementing or supporting effective mitigation strategies	n/a	n/a	0		126	126	0		0	
<b>TOTAL Beneficiaries</b>	n/a	<b>9,168</b>	<b>6,765</b>		<b>40,186</b>	<b>49,354</b>	0		6,765	