

# **Pastures, Conservation and Climate Action, Mongolia**

## **Annual Report Year 7 (01.04.2021-31.03.2022)**

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## Summary

Project overview	
Reporting period	1st April 2021-31st March 2022
Geographical areas	3 herder community ( <i>heseg</i> ) areas at sites across Mongolia: i) Hongor Ovoo <i>heseg</i> , Ikh Tamir <i>soum</i> (district), Arkhangai <i>aimag</i> (region) (36,756 ha) ii) Ikh Am <i>heseg</i> , Undurshireet <i>soum</i> , Tuv <i>aimag</i> (18,241 ha) iii) Dulaan Khaikhan <i>heseg</i> , Bogd <i>soum</i> , Bayankhongor <i>aimag</i> (22,485 ha)
Technical specifications in use	Technical Specification as set out in Part G of approved Phase II PDD (27/6/2022) and linked to Plan Vivo Climate Benefit Quantification Methodology 'Carbon sequestration through improved grassland and natural resources management in extensively managed grasslands' Version 1 (Annex 8, Phase II PDD).

Project indicators	Historical (Years April 2015 -March 2021)	Added/ Issued this period (April 2021- March 2022)	Total
No. smallholder households with PES agreements	0	0	0
No. community groups with PES agreements (where applicable)	3	0	3
Approximate number of households (or individuals) in these community groups	116	-2	114
Area under management (ha) where PES agreements are in place	77,482	0	77,482
Total PES payments made to participants (USD)	86,486.4	73,426	159,912.4
Total sum held in trust for future PES payments (USD)	60,150.48	271,084.45	271,084.45
Allocation to Plan Vivo buffer (tCO <sub>2</sub> ) (including this issuance)	22,061	3,890	25,951
Saleable emissions reductions tCO <sub>2</sub> )	118,433	18,779	137,212
Unsold Stock at time of Submission (PVC)	0		
Plan Vivo Certificates available for future issuance			0
Buffer credits available for future allocation (after current issuance)			0
Plan Vivo Certificates (PVCs) issued to date			118,433
Plan Vivo Certificates requested for issuance in this period			18,779
Total PVCs issued (including this report)			137,212

## Part A: Project updates

### A1 Key events

Participating herder groups (heseg) continued to show their commitment to the project through successful implementation of planned activities across a range of pasture management, livelihood and conservation issues. As in previous years, in Year 7, they even conducted activities over and above those planned in the PDD to include additional conservation and livelihood support activities, as specified in Section E, below. Sales of certificates continued to increase above levels in previous years. Proceeds from certificate sales (less agreed MSRM management costs of 30%) continued to be distributed across the participating project sites, to be allocated to activities as agreed by the herder groups (heseg) themselves.

In Year 7, these funds were primarily used by herder groups to create mutual funds able to offer members low interest loans for critical activities such as winter preparations, marketing of livestock products and seasonal movements throughout the year.

### A2 Successes and challenges

As noted in the Years 5 and 6 reports, the continued functioning of the project and commitment of herders to it is a significant success in itself, given that this is the first of its kind in Mongolia. An even greater indicator of success is that at the end of this Phase 1 commitment period (April 2015- March 2019), coinciding with the end of Year 4, all participating herder groups expressed a strong desire and commitment to continue with PCCA into Phase 2 (April 2019 onwards). This is despite the originally unfamiliar nature of the funding model, based on reward in exchange for delivery against mutually agreed targets, and the quite slow progress of certificate sales. The latter did, however, improve again in Year 7, as indicated in Table 6, with some major sales to new and established purchasers. Compliance with pasture management plans and stocking rates was high for Year 7. Participating *heseg* at all sites were active and successful in taking on and developing their roles in governance and decision-making for conservation, as well as in conducting targeted monitoring of key sites and species.

### A3 Project developments

As stated in previous Annual Reports, the project validator did not submit any formal CARs. However, he did make the following observations in the Validation Report (issued early in Phase I), which we took as points for action:

1. *'Herder groups require additional training required on several topics according to the specifics of the herder groups. For example, technical training on planting tree among the herder group that represent desert steppe environments'*. This observation was made in reference to requirements for permanence (Item 2.4, Validation Report). In Year 7, these points for action were addressed by MSRM training for heseg on planting green fodder (oats and barley). They had previously been discharged by further trainings on pasture degradation and ways to reduce this, on rotational pasture use and on carbon sequestration throughout Years 2-7.

2. 'MSRM needs to provide continued training and ensure that herders and local officials are gaining knowledge from land management techniques'. This observation was made in reference to requirements for monitoring (Item 2.7, Validation Report). In response, as noted here and in previous ARs, MSRM instituted further training in land management techniques for *heseg* members in 2016, 2019, 2020, and also in 2021. Training was also conducted with local officials, concerning collaboration with herders, making agreements with them and supporting herders' cooperation and collective action.

3. Section A1 describes how the Mutual Fund was first established. This shared fund was provided by a local NGO to provide loans to herders participating in the project. However, in 2022, some improper spending was found in the internal audit monitoring and evaluation of the expenditure of the Mutual Fund. For example: The director of a Local non-government organization that was responsible for providing loans to non-project herders in Hongor Ovo PUG of Ikh Tamir Soum, took a loan (about \$5,800) and used it for himself. In this regard, the director of the NGO was replaced by another person. Loans of \$7,560 were granted to 15 non-project herders in the Ikh-am PUG of Undurshireet Soum. Some loans have already been repaid. In order to stop all this, it has been decided that the money provided by the Project will be transferred directly to the account of each herdsman involved in the project by the Mongolian Society for Range Management, based on the proposals of the herdsman themselves and the minutes of their meetings.

After the financial audit in 2022, **a specific methodology for distributing funds to farmers** will be developed and presented to farmers. Herders also accept this. According to this methodology, the funds will be distributed starting from June 2023. With this methodology, the role and participation of each herdsman in the implementation of the 3 main goals of Pasture Management, Environmental Protection, and Socio-Economic Issues, which are included in the project document, are distributed based on evaluation. At that time, **80%** of the total funding will be allocated to pasture management, of which 60% will be allocated in accordance with the number of animals, 20% will be allocated to pasture rotation and the number of migrations, **10%** of the funding will be how the environmental protection objectives are being implemented, and **10%** of the funding will be allocated to socio-economic issues. When evaluating this indicator, it is agreed to find it based on the annual report received from the herdsman.

**Table 1: Methodology of compensation allocation for herders in Dulaankhairkhan Herders Group**

		Number of herder households	Sheep units per household	Compensation per units, MNT
Pasture carrying capacity, sheep units	4500	22	204.5	
Total amount of compensation, MNT	24,000,000			1,090,909
Number of animals, 60%	14,400,000		205	3,200
Herders' movement, 20%	4,800,000	88		54,545
Biodiversity conservation, 10%	2,400,000			
Socio-economic management, 10%	2,400,000			

Note: The numbers in yellow are constant. Other indicators will change depending on the amount of shared funds, the number of households, and the number of migrations.

**Calculation of pasture management:** 4500 heads of sheep is the maximum number of animals in the grazing land of that area. It is the number of animals that can meet the goals of our project. In other words, the normal carrying capacity of the pasture in that area. If we divide this amount by the number of households (22 households), the appropriate number of animals per household will be obtained (204.5 sheep units). Households with less than this number of animals will be fully compensated and additional payments will be made for the amount of animals that are missing. This can be understood as providing more ecological services by underutilizing grasslands. The amount of compensation for the household with more than appropriate number of animals is calculated by deducting the number of animals exceeding this number (204.5 sheep units). For example, if one head of sheep is more (205.5-204.5), the amount of compensation will be deducted by 3200 MNT. Incentives for rotational use of pastures are calculated in this way. For example, a household that moves a lot and rotates its pasture well will be given more, and a household that moves less often will be given less.

**The biodiversity conservation and socio-economic management part** (10%) is allocated by evaluating the role and participation of herders in the implementation of the goals included in the management plan. One herdsman must get up to 100 points, and the amount of compensation allocated (2400000 MNT) is divided by the sum of all herdsmen's points (1462) to calculate the evaluation of one point (1619MNT). If a herdsman gets 75 points, multiplying it by one point gives 12675 MNT for that herdsman. It is also decided to distribute the biodiversity conservation area in this way.

The allocation is made based on the annual report of herdsmen certified by the section leaders. After confirming the allocation by each person at the herdsmen's meeting, it will be transferred to the bank account of each herdsman. The method of distribution of the funds in the Khongor Ovo PUG and Ikh Am PUG is the same as in the above table, only the number of livestock, the number of households, and the number of migrations will be different in that pasture. Pasture carrying capacity, sheep units (the maximum number of animals in the pasture) in the above table are **21,000** in Hongor Ovo PUG and **18,000** in Ikh Am PUG. This number will be constant.

**Table 2: Progress against corrective actions**

Document	Corrective action	Activity against this
Validation Report	<b>Section 2.4: Permanence</b> Observation by Validator: additional training required according to the specific planned actions of the herder groups (e.g., oats and barley planting)	MSRM provided further ongoing training in specific activities with herder groups in Summer 2016 (May-September), 2018, 2019, 2020 and 2021. (Years 4,5,6 and 7).

<b>Validation Report</b>	<b>Section 2.7: Monitoring</b> Observation by Validator: MSRM need to provide continued training and ensure that herders and local officials are gaining knowledge from land management techniques.	MSRM provided further ongoing training with herder groups in Summer 2016 (May-September), 2018, 2020 and 2021. Local officials were also invited to specific training events, and training materials and project outputs shared with all parties.
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#### **A4 Future Developments**

Other major conservation organisations and government bodies active in Mongolia have shown interest in adopting the PCCA approach, which may result in it being rolled out to other areas and sites in the future. These discussions are currently ongoing.

## **Part B: Project activities**

### **B1 Project activities generating Plan Vivo Certificates**

The Technical specification is as set out in Part G of the approved Phase II PDD (27/6/2022). This mirrors the Technical Specification used in the Phase I PDD, with the continuation of this Technical Specification approved by Plan Vivo and their technical advisors. As in Phase I, this Phase II specification is linked to Plan Vivo Climate Benefit Quantification Methodology 'Carbon sequestration through improved grassland and natural resources management in extensively managed grasslands' Version 1 (Annex 8, Phase II PDD), hereafter referred to as TS1. This is linked to the development and implementation of new schedules for annual pasture use by the *heseg*, designed to reduce grazing pressure and enhance carbon sequestration through enhanced seasonal mobility, and in some cases through reductions in stocking rates. This is as specified for each *heseg* in the Phase II PDD Annex 5 Management Plans. Modelled carbon reductions in Year 7 for each site are as specified in Section C, Table 4 below. A further indicator here, as set out in the Annex 5 Management Plans, was the percentage of herders who complied with the agreed schedule, with 90-100% required to do so for all sites in Year 7. In addition, as part of the project design, herder groups (*heseg*) each identified a range of other activities, not specifically related to carbon sequestration, against which progress was to be evaluated (see B2 below).

**Table 3: Project activity summary**

<b>Name of technical specification</b>	<b>Area (Ha)</b>	<b>No herding households</b>	<b>No Community Groups</b>
TS1	77,482 ha (total pasture areas for all three sites – see Project Indicators, above)	114	3

There have been no new technical specifications submitted to the PV Foundation for approval, nor are there any in development as part of Phase 1. The project has not expanded to new communities or geographical areas in this reporting period. However, an amended PDD has been submitted and approved for Phase 2.

### **B2 Project activities in addition to those generating Plan Vivo Certificates**

The activities reported are those set out in the final PDD. These involve not only carbon sequestration through improved grazing management practices, but also specific activities linked

to biodiversity conservation and livelihoods/ wellbeing. These are all specified in the site- specific management plans in Annex 5 of the PDD and summarised below. *Heseg* performance against agreed indicators and in relation to these activities is analysed in Section E.

***For Hongor Ovoo heseg:*** In Year 7 of the project these entailed:

- Completion of activities for herder group partnerships for environmental protection, as set up in Year 1, with activities as agreed with local administration for Year 7.
- Herders' increased participation in decision-making on environmental issues with herders' committee established and recognised by local administration in Year 1 and indicators in subsequent years as set by that committee;
- Due to the good summer in 2021, each household has expanded its haymaking and green fodder cultivation.
- Repair of fences and winter shelters, with 10 fences/ shelters repaired in Year 7, in addition to those repaired in previous years;
- Continued collaborative production and marketing of local brand milk products, and following the establishment of a cooperative in Year 3, resulting in increased household income against 2014/5 baselines;
- Enhanced household income from gathering and sale of wild fruit and nuts;
- Combing of yak wool and delivery to markets, with enhanced household income from this source.

Monitoring results against these activities and associated indicators are summarised in Part E, Table 8b.

***For Ikh Am heseg:*** In Year 7 of the project these additional activities entailed:

- Protection of red deer, argali, marmot and Mongolian gazelle, with repeated manned surveys of target species by herders in Year 7;
- Repair of fences/ winter or spring shelters, with 10 fences/ shelters per annum;
- Collaborative production and marketing of milk and curd in season, with enhanced household income from this source against 2015 baselines;
- Hay preparation, with hayfield established by end 2015 and increased % of households with adequate hay provision in Year 7 and in accordance with targets set.

Monitoring results against these activities and associated indicators are summarised in Part E, Table 8b.

***For Dulaan Khairkhan herder group:*** In Year 7 of the project, these additional activities entailed:

- Continued protection of argali, ibex and goitered gazelle, e.g., through herder patrols and surveys;
- Ongoing protection of saxaul forest, with numbers of cut stumps decreased by >80% by comparison with baseline data;
- Repair of fences/winter or spring shelters, with 7 fences/ shelters in Year 7;
- Hay preparation, with increased percentage of herders with adequate hay provision in Years 7, and according PDD targets.

Monitoring results against these activities and associated indicators are summarised in Part E, Table 8b.

## Part C: Plan Vivo Certificate issuance submission

### C1 Contractual statement

The project continues to be based on signed PES agreements with participants complying with all the minimum requirements stated in these agreements.

### C2 Issuance request

The project requests the issuance of a further 18,779 certificates, already earned through activities in Years 7, to meet buyer demands. For Year 7, and as discussed in Section E below reductions in livestock numbers, both in terms of total numbers and by sheep units were achieved across all sites with the exception of Hongor Ovoo, wherein overall livestock numbers were reduced against the baseline, but with a slight increase in sheep units. Sheep units at Hongor Ovoo have, however, fallen since Year 6. Pasture yields and greater mobility of herders further enhanced delivery against targets.

**Table 4: Statement of tCO<sub>2</sub> reductions available for issuance as Plan Vivo Certificates based on activity for reporting period 01/04/21– 31/03/22**

Area ID	Total area (ha)	Tech. Spec	Saleable ER's (tCO <sub>2</sub> ) generated in previous periods (end Phase I)*	Saleable ER's (tCO <sub>2</sub> ) available from previous periods (Phase II only)	Total ER's (tCO <sub>2</sub> ) achieved this period**	% Buffer	No. of PVCs allocated to buffer from ER's achieved this period	Saleable ER's (tCO <sub>2</sub> ) from this period	Issuance request (PVCs)	ER's (tCO <sub>2</sub> ) available for future issuances
Hongor Ovoo	36,756	Improved grassland management	44,287	10,055	6470	10	647	5,823	5,823	0
Ikh Am	18,241		3,426	7,831	7812	20	1,562	6,250	6,250	0
Dulaan Khaikhan	22,485		2,438	9,873	8407	20	1,681	6,726	6,726	0
<b>TOTAL</b>	<b>77,482</b>		<b>90,674</b>	<b>27,759</b>	<b>22,689</b>		<b>3,890</b>	<b>18,779</b>	<b>18,779</b>	<b>0</b>

\*Saleable ERs from Phase I were accounted for and sold during Years 5 and 7, so are not included in further calculations here, only summarised here (column 4: end Phase I). They are not included in Phase II calculations.

\*\* Number of tCO<sub>2</sub> sequestered or avoided emissions through participants' activities this reporting period

### C3 Allocation of issuance request

**Table 5: Allocation of issuance request**

Buyer name/ Unsold Stock	No. PVCs transacted	Registry ID (if available) or Project ID if destined for Unsold Stock	Tech spec(s) associated with issuance
<i>PCCA (unsold stock)</i>	<i>18,779</i>	<i>PCCA</i>	<i>TS1</i>
<b>TOTAL</b>			



#### **C4 Data to support issuance request**

Under the Management Plans in the PDD, evidence for carbon sequestration is through grazing pressure, movement patterns and stocking rates for each site and its different pasture types. Tables c and d for Hongor Ovoo and Dulaan Khaikhan are found in Annex 5 of the PDD, with equivalent tables for Ikh Am included as Table F1a (p.32) and F1c (p.34) in the main body of the Phase II PDD. The site-specific Management Plans also show detailed plans for grazing pressure at each site year in year and how these are translated into carbon sequestration (based on Century modelling, as explained in the Technical Specification). Rates for Year 7 per site are summarised in C2, Table 4 above, with underpinning spreadsheets, based on PDD Annex 5, as set out in Annex 2 tables in this report.

At all sites, compliance with agreed grazing management practices and protocols was to be assessed on the basis of biannual self-reporting by the herder groups, subject to confirmation by MSRM. For Year 7 of the project, MSRM checked reported actions in August/ September, then again at the end of the year. Overall, monitoring undertaken at the end of Year 7 was thus designed to monitor compliance with site specific Management Plans, and to confirm climate, livelihood and biodiversity benefits against PDD baselines. Detailed tables of activities for each site, showing progress against agreed activities and indicators for Year 7 are included in Part E, Monitoring Results. MSRM's Annual Report for Year 7 is included in Annex 1.

As highlighted in Table 8b in Section E, as well as the accompanying narrative, performance indicators relate not just to stocking rates and mobility and hence to carbon sequestration, but to a range of biodiversity conservation and livelihood support activities. The majority of these met or even exceeded targets and the carbon sequestration calculations have been updated accordingly.

## Part D: Sales of Plan Vivo Certificates

### D1: Sales of Plan Vivo Certificates

**Table 6: Sales of Plan Vivo Certificates**

Invoice Date	Date of receipt by MSRM	Vintage	Buyer	No of PVCs	Price per PVC (\$)*	Total sale amount (\$) *	% Received by participants
2021.04.14	2021.08.04	2016-2017	Cleavel	320			70%
2021.06.04	2021.08.04	2016-2017	Cleavel	500			70%
2021.07.01	2021.07.16	2016-2017	Eternal Landscapes	87			70%
2021.07.06	2021.08.27	2016-2017	Zeromission	28			70%
2021.07.14	2021.08.04	2016-2017	Cleavel	636			70%
2021.07.23	2021.06.04	2016-2017	Cleavel	300			70%
2022.02.03	2022.02.16	2016-2017	myclimate	7,997			70%
2022.02.03	2022.02.16	2015-2016	myclimate	7,592			70%
2022.02.03	2022.02.16	2016-2018	myclimate	17,975			70%
2022.02.03	2022.02.16	2018-2019	myclimate	25,092			70%
<b>Total</b>				<b>60,527</b>			

\*Pricing reported for internal monitoring purposes only

The amount received by participants takes into account the 30% allocated to MSRM for management, monitoring and reporting (calculated after deduction of any bank and PV issuance fees).

**Table 7: Summary of Sales in Year 7**

Local bank charges (\$)*	
PV issuance fees (\$)*	
Total sales after deductions (\$)*	
Amount assigned to participants (70%)	284,360

\*Charges and fees reported for internal monitoring purposes only

## Part E: Monitoring results

### E1: Ecosystem services monitoring

Monitoring results for all sites and against the full range of indicators (ecosystem services, socioeconomic and environmental/ biodiversity) and in relation to red, orange and green 'traffic light' indicators (Section K of PDD) are set out in Tables 8a & b, below.


**Table 8a: Summary of Carbon Sequestration (Year 7)**



			C Seq. (tCO <sub>2</sub> e) p.a. at different grazing pressures				C Seq. (tCO <sub>2</sub> e) based on recorded grazing pressure at each site (Year 7)
Site	Pasture type	Season	30%	40%	50%	> 50%	
i) Hongor Ovoo	Riparian Meadow	Spring/summer/fall	1721	811	23	0	23
	Riparian Meadow	Summer	2724	1764	981	0	1764
	Mountain Meadow	Winter	990	466	304	0	304
	Mountain Meadow	Summer/fall	1198	560	-52	0	-52
	Mountain Meadow	Winter/spring	2175	2130	2060	0	2060
	Mountain Steppe	Fall	1241	682	199	0	682
	Mountain Steppe	Summer/fall	1153	418	-84	0	418
	Mountain Steppe	Winter/spring	2470	2029	1271	0	1271
			<b>13675</b>	<b>8861</b>	<b>4702</b>	<b>0</b>	<b>6470</b>
ii) Ikh Am	Riparian Meadow	Spring	988	466	13	0	13
	Mountain Steppe	Spring	628	227	-46	0	227
	Mountain Steppe	Winter	4302	3534	2213	0	4302
	Steppe	Spring	1354	490	-98.91	0	-98.91
	Steppe	Winter	4102	3369	2110	0	3369
			<b>11374</b>	<b>8086</b>	<b>4283</b>	<b>0</b>	<b>7812</b>
iv) Dulaan Khaikhan	Mtn Desert Steppe	Winter/spring	4973	4086	2559	0	4086
	Mtn Desert Steppe	Fall	3021	1660	485	0	3021
	Desert Steppe	Summer/fall	3346	1211	-245	0	-245
	Desert Steppe	Fall	1545	849	248	0	1545
			<b>12885</b>	<b>6952</b>	<b>3047</b>	<b>0</b>	<b>8407</b>

**Table 8b: Summary of Overall Monitoring Results (Year 7)**

Site and 'Traffic light'1 indicator status	Specific Activities (Year 7)	Indicators (1-3) & Targets (expected results)	Results Achieved
Hongor Ovoo heseg			
1.Pasture management (carbon sequestration)	Annual pasture use schedule developed and implemented, with grazing pressure equivalent to modelled carbon sequestration rates for different pasture types.	i) Development of agreed annual schedule (approved by HG members & LA (by end March each year), and which is equivalent to 50% grazing pressure or less for seasonal pasture areas and in accordance with carbon modelling. Any subsequent updates/ changes also agreed and approved by same parties.	i) In 2021-2022, grazing pressure across various pasture types was 50% or less, as per targets.
		ii) 5% reduction in livestock (sheep units) against baseline by end March 2019; further 3% by end March 2020; 3% by end March 2021; 1% by end 2022, 2023.	ii) In 2021, the number of livestock (sheep units) increased by 3.4 % compared with baseline,2014 year.
		iii) % of HG households that comply with schedule (80% in summer and winter 2019; 85%, 2020, 90% 2021, 95-100% 2022/29).	iii) Heseg leader reported full (100%) compliance with pasture use schedule re timing and periods of use of different seasonal pastures in heseg area, confirmed by MSRM through interviews. Target achieved.
	iv) Assist selling livestock over pasture carrying capacity.	iv) Decrease in number of livestock.	iv)Number of livestock (13,516) decreased by 4.1 percent compared to the baseline (14,095). Assistance was provided in the provision of discounted loans and gasoline for the sale of 580 animals.

	v) Organise seasonal camping in underused areas (Khanuin gol, Khukh nuur).	v) Improved pasture conservation through using reserve (less used) pasture and camping. No other specific indicators or monitoring for this activity.	v) There was no migration to these areas due to the favourable weather and the decrease in the number of animals.
2.Biodiversity Conservation	i. Herder group partnerships established through the project in Year 1 continuing to undertake activities to protect local environments.	i. Objectives, work plans, responsibilities, mission statements and registration documents for herder groups produced. Herder groups able to conduct collaborative work to protect local habitat, through collaboration with LA.	i. Agreed activities for Year 7 to conduct forest clean up (specific targets and compliance highlighted below); protection from illegal cutting & collection and sale of wood waste.
	ii. Cooperation in groups for forest cleaning & protection.	ii. Forest patrol activities will be continued. Vegetation survey will be conducted and reported. Cleaning of 2ha area by end each year.	ii. Completed as planned. The five forest cooperatives “Shiree bulan”, “Haluun us”, “Haltar angarhai”, “Neg sanaa”, and “Ikh ulunt” have been actively working to do forest cleaning and protection according to the plan approved by local administration. Forest clearing of 1.5 hectares in Ikh Olont community, 0.2 hectares in Shiree Bulan, and 0.3 hectares in Haluun us community was done respectively.
	iii. Increased herders’ participation in decision- making on environmental issues.	iii. As per targets set by herder representative committee at the end of Year 1: these required herders to conduct forest patrols to monitor and protect the forest from illegal cutting trees in summer and fall.	iii. Completed as planned. As highlighted above, the five forest cooperatives “Shiree bulan”, “Haluun us”, “Haltar angarhai”, “Neg sanaa”, and “Ikh ulunt” have been actively working to do forest cleaning and protection according to the plan approved by local administration. Between August and November, when nuts and fruits are harvested and deer are hunted, each community distributes herdsmen to patrol the forests of their respective areas. As a result, poaching and illegal fruit harvesting are under control.
	iv. Nurseries and planting for enhanced provision of forest habitat for native species	iv. By end 2021 nursery established and produced first seedlings ready for planting	iv. Tree nursery already established as previously reported, ahead of end 2021 target, and planting ongoing. Ikh Olont community has fenced 2 hectares of land and started planting tree seeds. In 2021, about 30 seedlings were transplanted.

<b>3. Socioeconomic activities</b>	i. Repair of fences & winter/spring shelters	i. Repair 5 fences/ shelters p.a (incl. Year 7).	i. In 2021, this group fixed 10 winter and spring shelters (above target of 5 pa).
	ii. Collaborative production & marketing of local brand milk products	ii. Increased annual HH income through marketing milk products, and against baseline	ii. As reported for previous years, herders prepared and sold dairy products collaboratively in Ulaanbaatar and at the aimag's trade fair. Each herder household sold an average of 60 kg of curd and butter. In total, 3.5-4 tons of dairy products were sold.  Yak is the main dairy animal in this area. 
	iii. Gathering and sale of wild fruits and nuts	iii. Year 7: Enhanced HH income against baseline.	iii. In 2021-2022, the harvest of nuts and fruits was poor and did not contribute significantly to household income.
	IV. Establish a herders' market.	iv. Increased annual HH income, and against baseline.	iv. Its planning in 2022-2023 years
	V. Comb yak wool and deliver to markets	v. Year 7: Enhanced HH income against baseline	v. In 2021-2022 heseg members combined their yak wool and sold 800 kg, earned 12,000,000 MNT, enhancing HH income.
	VI. Enroll herders to participate activity in project activities	VI. Indicators include nos. of herders attending training events.	vi. Sum's veterinarian gave advice on animal health and sanitizing the cattle yard.
	VII. Sewing	VII. Increased income. Job creation.	vii. Herders Batbayar and Batnasan increased their family income by MNT 150,000-200,000 by making Mongolian coats and shirts.
	VIII. Plant perennials for green fodder		vii. A total of 174.3 tons of hay and fodder in 2021 were prepared and purchased by households. This is 26.1% more than in 2020. The increase in the amount of hay and fodder was due in part to the project's provision of soft loans for seed and small tractors. This increase in fodder production has had a significant impact on reducing pasture loads and reducing risk. There are two types of green fodder production. First type: A number of herder households are cultivating fodder in their winter and spring manure on a small plot of land (200-400 m2). Herders B.Bukhbaatar, B.Davaakhuu, O.Erdenebat, Bo.Altansukh, B.Altansukh,

			<p>S.Ariunbold, L.Erdenebaatar and B.Purevsuren planted green fodder in their winter manure and prepared 1 ton to 3 tons per household.</p>  <p>Second type:Some herders cultivated larger areas e.g., D. Erdenebaatar 3 hectares, L. Nerguibaatar 6 hectares, P. Regzendarjaa 2 hectares, D. Bolbat 3 hectares, G. Enkhtuvshin 1 hectare, P. Unensaikhan 3 hectares, each of them planted and harvested an average of 5-10 tons.</p> 
	IX. Experiment and introduce soilless green fodder cultivation.	VIII.	viii. No target in year 7



<b>Ikh Am PUG</b>			
1.Pasture management (carbon sequestration)	Develop & implement schedule for seasonal pasture use (rotation).	i. Development of agreed annual schedule (approved by HG members & LA (by end March each year), and which is equivalent to 50% grazing pressure or less for seasonal pasture areas and in accordance with carbon modelling. Any subsequent updates/ changes also agreed and approved by same parties.	i. In 2021-2022, grazing pressure across various pasture types was 50% or less, as per targets.
		ii. 5% reduction in livestock (sheep units) against baseline by end March 2019; further 3% by end March 2020; 3% by end March 2021 (Year 6); 2% by end 2022,2023,2024,2025,2026,2027. 1% by end 2028.	ii. The number of livestock (sheep units) decreased by 25.1 percent in 2021 to compared to the 2014 baseline. Achieved target
		iii. % Of households that comply with schedule (80% in summer and winter 2019; 85%, 2020, 90% 2021, 90-100% 2022/29).	iii. Heseg leader reported 100% compliance in 2021.Target met.
	iv. Experiment and introduce soilless green fodder cultivation	iv. Reduction of pasture load	iv. No specific target for this activity in 2021-2022.
	v. Assist selling livestock over pasture carrying capacity	v. Decrease in number of livestock.	v. The actual number of livestock decreased in 2021 by 12.9% compared to the 2014 baseline. 2,600 livestock of herdsmen were sold through the “Shireet Development” Herdsmen's Cooperative.
	vi. Dig hand wells	vi. No specific target for Year 7	




2.Biodiversity Conservation	<i>Year 7:</i>	<i>Year 7:</i>	
	i. Protect red deer, argali and Mongolian gazelle	i. Enhanced populations of target species by 2029 as measured against baselines. Actions to protect species in accordance with agreed annual workplans.	<i>i. Year 7:</i> Mr. Nyambuu, herder from Ikh Am PUG was again issued a volunteer ranger's license by the Ministry of Nature and Environment. The PUG herders continue to take actions to protect wildlife such as wild sheep, deer, and antelopes. In order to protect wildlife including deer and antelopes from poachers, the PUG herders took turns to patrol and guard them every 45 days in fall. In spring, herders rotated every 30 days to patrol and guard deer from poachers who try to poach deer for their horns. These actions help wildlife to raise naturally. In January 2021, the "Doshit and Bayan Ulaan" mountainous area herders regularly provide salt, hay for deer, antelope and argali. The herdsman S.Munkhbat and J.Tsogoo provided 200 kg of salt and 120 kg of hay for deer, antelope and argali in the winter of 2021.
	ii. Planting trees in winter and spring shelters	Increased absorption of carbon dioxide	No target in 2021-2022. 3 households in 2022-2023.
	iii. Clean area (collect rubbish brought downriver from Ulaanbaatar and deposited locality)	<i>Year 7:</i> Cleaning/litter collection in May and October	They cleaned up the garbage along the Tuul River every year and dispose of it at landfills. 3 tonnes were removed over the year.

3.Socioeconomic activities	Year 7: i) Repair of fences & winter/spring shelters.	Year 7: 5 additional fences/shelters repaired by end 2020.	Year 7: Achieved as planned and target exceeded: 12 families fixed their shelters.
	ii) Collaborative production and marketing of milk and curd in season.	Year 7: Enhanced HH income against baseline	Year 7: As in previous years, herders made dairy products and sold them in their in order to increase their household income. Since the start of the PV project products have been produced and sold more collaboratively, with additional families participating.
	iii. Sewing	iii) Increase non-livestock income (enhanced participating HH income by the end of each year) and job creation.	One herder increased household income by 6.8 million MNT by producing coats, shirts, and other products.
	iv. Small scale processing of hide and skin of animals and deliver to markets.	Year 7: Enhanced HH income against baseline.	As in previous years, one herder operated a small tannery from the Revolving Fund to produce Mongolian coat and shirt. A garment maker, woodworker, and shoemaker, were also supported through the fund. The loans have been repaid. In 2021, a number of herder households were due to receive loans for small-scale production, services, planting potatoes and vegetables, reducing the number of livestock, purchasing dairy cattle and producing dairy products. In 2021, a total of 18 herder households received a loan of MNT 62.5 million for a period of 6-12 months.
	v. Hay provision	Year 7: Increased % HH with adequate hay provision.	Year 7: A total of 40 households prepared 180 tons hay, 30 tons of mixed fodder, and 55 tons green fodder for the winter. Households also collected nettle silage.

<b>Dulaan Khairkhan heseg</b>			
1.Pasture management (carbon sequestration)	Develop & implement schedule for seasonal pasture use (rotation).	i. Development of agreed annual schedule (approved by HG members & LA (by end March each year), and which is equivalent to 50% grazing pressure or less for seasonal pasture areas and in accordance with carbon modelling. Any subsequent updates/ changes also agreed and approved by same parties.	i. In 2021-2022, grazing pressure across various pasture types was 50% or less, as per targets.

		ii. Further 1% reduction in livestock (sheep units) against baseline by end March 2019; 1% by end March 2020; 1% by end March 2021. 2% by end March (2023-2029).	ii. The number of livestock (converted to sheep unit) decreased by 8.0 % in 2021 compared with baseline. Target met.
		iii. % of HG households that comply with schedule (80% in summer and winter 2019; 85%, 2021, 95% 2022, 95-100% 2023/29). Increased annual mobility (Average per heseg).	iii. Heseg leader reported full (100%) compliance with pasture use schedule in terms of timing and periods of use of different seasonal pastures. The families of the group are resting the winter pasture from June 10 to November 20 and the autumn pasture from August 20 to November 20 in accordance with the decision of Herder Group Meeting. Increasing plant growth in winter and autumn pasture. The families of the group move a maximum of 15 times and a minimum of 7 times for pasture rotation
	iv. Assist selling livestock over pasture carrying capacity	iv. Decrease in number of livestock.	iv. The actual number of livestock decreased in 2021 by 31.1% compared to baseline, 2014 year. About 1,600 animals will be sold and transported with soft loans from the revolving fund.
	v. Organize seasonal camping in underused areas	v. Improved pasture conservation through using reserve (less used) pasture and reducing grazing pressure in other areas	v. Due to lack of water in the reserve pasture, there is no need to use it
2. Biodiversity Conservation 	Year 7. i) Protection of argali, ibex & goitered gazelle. 	Year 7: surveys completed summer 2018, at baseline survey sites.	Year 7: Herders continue to protect wild sheep and goats e.g., in Ikh Bogd special protected area, as well as licorice plants and saxaul trees (see below). Local wildlife conservation volunteer Togookhuu and Amarsanaa reported that the number of wild sheep and goat continues to increase since Year 1. B. Togookhuu and A. Amarsanaa are responsible for counting and registering the argali and ibex. When the weather is difficult, they put hay and salt and protect it. The number of wild animals is growing. Due to the cessation of the use of saxaul as a fuel, saplings are multiplying and nature is recovering. In 2020, 35 dung and 25 ibex were registered, while in 2021, 35 argali and 28 ibex were recorded.
	ii) Protection of saxaul forest.	Year 7: patrols and protection of saxaul forest.	In Phase I, the heseg herders made a plan to collectively protect saxaul trees and requested the Citizens' Representative Hural to ban cutting and using saxaul trees for fuel. As a result, saxaul forest is regenerating and new trees are growing. The numbers of stumps decreased by up to 80%. Because herder households live near saxaul forests, each household protects its own saxaul. At group meetings, they discuss how to protect and provide guidance.

3.Socioeconomic activities 	Year 7 i) Repair of fences & winter/spring shelters.	i) Year 7: 5 shelters/ fences repaired.	Year 7: Herders fixed 5 shelters. Target achieved
	ii) Experiment and introduce soilless green fodder cultivation	ii). Reduction of pasture load	No specific target for Year 7
	ii) Hay preparation	iii) Every <i>heseg</i> family to prepare hay annually. Increased % of HH year on year with adequate hay provision. Annual targets to be confirmed by heseg.	In 2021, 180 tons of hay and fodder were prepared. Poor households prepared a relatively large amount of fodder to survive the drought and dzud in order to survive the small number of livestock that are their main source of livelihood.
	iv) Establish a market to sell livestock, meat and raw materials	iv). Assist heseg herders to sell their livestock, meat and raw materials.	No specific target for Year 7
	v) Sewing	v). Increase non livestock income and job creation. Enhanced income for participating HH by end of year.	v.A number of herders increased their household income by 350,000-450,000 MNT as a result of sewing Mongolian coats and shirts.
	vi) Making noodles	vi).Increase non livestock income and job creation. Enhanced income for participating HH by end of year.	vi.Several herdsmen in the group increased their household income by MNT 1,500,000 as a result of producing noodles and baked goods.

N.B. The ‘traffic light’ system (red, orange and green dots) relates to the activity-based monitoring set out in Section K of the PDD, where green denotes the project is on track and all payments should be made in full; orange denotes that some activities have fallen short of targets and that corrective action(s) may be required; red denotes that project activities have fallen far short of requirements and corrective action is necessary

For the majority of sites and across the range of indicators, most targets were met in Year 7, as indicated by the green status of ‘traffic lights’ for most activities. A number were even exceeded, with additional activities being undertaken. However, stocking rates were an issue in some cases, as specified below. Detailed livestock figures are presented in MSRM’s annual report for Year 7 (see Annex 2, this report).

**Hongor Ovoo:** MSRM monitoring and reporting, supported by official soum level and herder group livestock census data, reveal that in 2021, the livestock number (by sheep units) increased by 3.4 %, but the actual number of livestock decreased by 4.1 % compared to the baseline. This reflects the introduction of taxation on livestock and increased livestock sales, post removal of covid-related restrictions. The difference between the increase and decrease of sheep units vs the actual number of animals is due to the decrease in the number of young animals (each of which is equivalent to fewer sheep units) and the increase in the number of mature animals in the total herd.

Compliance with the pasture schedule meets the target, with both average annual mobility of herding households and numbers of movements comparable to Year 6.

Overall, carbon reductions, as modelled in the PDD and set out in more detail in Section C, were achieved in Year 7. This reflects the biomass (pasture yield) in Year 7, as measured in soum level statistics, in conjunction with the mobility of the herders. Total PVCs claimed for Year 7 across all sites are based on PDD targets for recommended biomass utilisation rates, which in turn reflect the state of particular pastures: for the most degraded pastures this is set at 30%, with 40 or 50% for less degraded pastures.

Figures in Table 4, Part C, are derived using the Century model and technical specification set out in the PDD. Data used for the three sites in Years 7 is presented in Annex 2.

For other activities and indicators, Hongor Ovoo met and even exceeded the majority of goals, as summarised above and as indicated by a green ‘traffic light’ symbol. Successes continue to be noted in terms of enhanced herders’ roles and activities in environmental governance and biodiversity conservation and livelihood/ risk management activities. As in Year 6, additional activities undertaken by the heseg included some vegetable production and engagement in eco-tourism, as well as production of hay and livestock fodder. These activities further supported livelihoods, food security and risk management.

**Ikh Am:** According to the soum’s land utilization plan, “Ikh Am” PUG of Undurshireet soum, Tuv aimag made a Pasture Use Agreement with the soum’s land inspector based on the soum governor’s order of September 12, 2017 (2017-2031). In Year 7, they continued to follow that plan. MSRM monitoring and reporting, supported by official soum level and herder group livestock census data, reveal a decrease in livestock numbers in Ikh Am by comparison with the baseline. In 2021, compared to the baseline, the number of animals (sheep units) decreased by 25.1%, and the actual number of animals decreased by 12.9%. The decline in livestock numbers reflects the project’s efforts to reduce the negative impact of overgrazing on herders’ livelihoods, as well as to provide training, advise and encourage small businesses, for example for the processing of hides and skins. This operates in conjunction with wider factors such as an increase in livestock exports to foreign markets, increased livestock prices and the introduction of income tax on livestock holdings.

There have been no significant changes in the average number of seasonal movements per household and distances as compared to Year 6.

Further details and implications of Year 7 grazing patterns for issuance of certificates are as set out in Part C. As for Hongor Ovoo, the ERs in Table 4, Part C are derived using the Century model and technical specification set out in the PDD. Data used for the three sites in Year 6 is presented in Annex 2.

For other activities and indicators Ikh Am generally met or even exceeded targets, as indicated by ‘traffic lights’ and accompanying narratives in Table 8b, above. In addition, herders used PCCA funds to build a livestock washing basin and vaccinate and wash livestock to prevent the spread of disease. Environmental conservation activities were very successful, with many conducted over and above the targets set in the PDD.

**Dulaan Khairkhan:** In 2021, the number of animals (sheep units) decreased by 8% compared to the baseline, and the actual number of animals decreased by 31.1%. This large decrease to some extent reflects the imposition of livestock taxes and the previous drought in Bogd sum in Year 6. This has led to a sharp decline in pastureland loads for the Dulaan Khairkhan group over the past two years, due to declining livestock numbers. In 2020, the average number of seasonal movements per household and distances as compared to Year 5 increased slightly.

Carbon sequestration targets as modelled in the PDD and set out in more detail in Section C were achieved. Further details and implications of this for issuance of certificates are as set out in Part C.

For other activities and indicators, Dulaan Khairkhan generally reached or exceeded goals. Environmental conservation and monitoring activities were discharged successfully on the whole, with protection of the saxaul forest as per targets set, planting of sea buckthorn and regular activities and surveys led by local conservation volunteers. Limited funds did however preclude additional planting or fencing of existing bushes/ planted areas.

MSRM annual monitoring and progress reports are included in Annex 1, in support of the data presented against the agreed PDD indicators in Tables 8a & 8b, above.

For all three sites/ heseg the majority of indicators are green in Table 8b, above, showing that monitoring targets were achieved in full. Areas where targets have not been met in full are indicated by amber markers and summarised in Table 8b.

## **E2: Maintaining commitments**

In this period, all existing herder groups have maintained their commitment to the project (see section H1 for further details around participating households). All groups have also demonstrated their commitment through opting to enter into Phase 2 from April 2019.

## **E3: Socioeconomic monitoring**

Monitoring indicators for Year 7 are as set out for each heseg in Section B1 and B2 above, and in Table 7b above.

## **E4: Environmental and biodiversity monitoring**

Monitoring indicators for Year 7 are as set out for each heseg in Sections B1 and B2 above. B2 sets out biodiversity related activities and monitoring for each site over this period. These are also summarised in Table 7b, above.

## Part F: Impacts

### F1: Evidence of outcomes

As highlighted above and in Table 8b in particular, PCCA Phase 1 has secured a range of specific impacts in relation to livelihoods, pasture use and management, carbon sequestration and biodiversity conservation.

The overall impacts of Phase II will be summarised in the end of Phase II report.

## Part G: Payments for Ecosystem Services

### G1: Summary of PES by year

Table 9: Summary of payments made and held in trust

1. Reporting year (04/19 – 03/20)	2. Total previous payments (Previous reporting periods)	3. Total ongoing payments (in this reporting period)	4. Total payments made (2+3)	5. Total payments held in trust	6. Total payments withheld
Year 1	0	0	0	0	0
Year 2	0	0	0	0	0
Year 3	0	\$6,788.0	\$6,788.0	\$2,694.31	0
Year 4	\$6,788.0	\$6,340.0	\$13,128.0	\$6,058.62	0
Year 5	\$13,128.0	\$65,162.7	\$78,290.7	\$64,393.68	0
Year 6	\$78,290.7	\$8195.7	\$86,486.4	\$60,150.48	0
Year 7	\$86,486.4	\$73,426.0	\$159,912.4	\$271,084.45*	0

*\* Payments previously held in trust were disbursed to the participants (herder groups) in the Spring of 2022 upon review of their work report and planned activities.*

All payments have been made in accordance with the PES agreements signed by participating herders and as set out in the PDD.

## Part H: Ongoing participation

### H1: Recruitment

No further participants have been recruited in Year 7. The numbers of households in each herder group are set out above. The number of participating heseg are unchanged, although numbers of households within those heseg decreased in Years 2, 3, 5 and 7 due to departure of a small number of households from project areas, with the remaining difference being due to new census methods of recording households, which only include those with their own livestock herds (e.g., omitting dependent households without livestock).

### H2: Project Potential

All three existing participating heseg have continued into a second commitment period. As noted, other key organisations in Mongolia have expressed interest in adopting the PCCA approach and thus potentially extending it to new sites and herder groups.

### H3: Community participation

For Year 7, evidence of community participation is summarised below.

Through a series of meetings with MSRM all members of herder groups have undertaken participatory management and planning activities in relation to the following main issues:

- i. *Pasture use planning;*
- ii. *Maintenance/ repair of winter and other shelters and hand wells;*
- iii. *Cooperation in livestock/ raw material marketing, felt processing and dairy product manufacturing;*
- iv. *Environmental protection/ conservation*

Specifically, in Year 7 a team from MSRM visited each of the three participating heseg. During these visits, herders were given ongoing training in pasture use planning, in order to develop pasture use strategies in accordance with carbon sequestration targets and modelling as set out in the PDD. These meetings were also used as opportunities to discuss the progress of the project; the development of activities agreed under the PDD, any issues or problems being encountered in meeting agreed targets and to answer any questions about the sale of certificates or carbon sequestration and modelling. Heseg members also conducted their own informal meetings on numerous occasions throughout the year, but given the nature of these meetings, formal minutes are not kept. Evidence of activities completed is presented in Table 8b, Section E, and in the MSRM reports in Annex 1.



## Part I: Project operating costs

### I1: Allocation of costs

For Year 7, MSRM costs in training and capacity building with participating *heseg* and in monitoring were met through their allocation of funds from PV certificate sales, and some external funding.

**Table 10: Allocation of costs**

Expense	Narrative	Amount (in USD\$)	Contribution from sale of PVCs	Contribution from other sources
Travel expense	Training (global warming, carbon emissions and pasture management)	2000	2000	
	Survey and monitoring	2000	2000	
	Participant meeting	3000	3000	
MSRM staff time (2 staff 12 month)	Country management of project and Markit Account	2000	2000	

# Annexes

## **Annex 1. Monitoring results for issuance request**

Results are presented in Tables 8a and b, Section E, above.

Further supporting information from MSRM Annual Report for Year 7 is also included below.

# MSRM Year 7 Annual Report

## Additional Project Monitoring and Evaluation

Project monitoring and evaluation is conducted at least twice a year. In August, a project coordinator worked in Undurshireet and Ikh Tamir soums and met with some PUG herders to clarify the progress of the project. PUG leader Baasansuren, met with Ts. Oyun, head of the NGO, and the project is being implemented according to plan. Information on the number of livestock, harvest data, migration, and other work done by herders in the area was reviewed and included in this year's report. At the meeting, the NGO's board replaced the group leader with Senge, at herders' request. Herder feedback and related information are included in this year's project report. The project coordinator was unable to attend as the Bogd soum travel ban lasted until mid-September.



*Interview with herder Myagmarsuren in Ikh am PUG. Undurshireet.*



*Pasture condition of Ikh am PUG. 6 August. 2022.*

In late September, a workshop was held in Ulaanbaatar for group leaders, NGO leaders and some herders. Training was provided on the impact of greenhouse gases on global warming, the role of pasture management in reducing it, and the participation of herders. The workshop discussed the progress of the project and future goals, and provided methodological advice on how to obtain information, how to conduct research, and how to write a report.



*In late September 2021, a workshop was held in Ulaanbaatar for group leaders, NGO leaders and some herders*

In March 2022, the project officer Otgontsetseg worked in Undurshireet and Ikh Tamir soums. She organised a PUG meeting to discuss the project progress and results, get feedback on the work plan for the next phase etc. Project Coordinator Participated in Bogd Soum Herder Group Meetings and agreed to do the same with the above soums. S.Otgontsetseg, an employee of MSRM, worked in Ikh Tamir soum from March 10 to 13, 2022. Khongor Ovoo gathered herders from the PUGs to get feedback on the progress of the project and the work to be done in the next phase. At the request of herders in the area, the project provided MNT 500,000 to each household and fodder to some herders.



*PUG meeting of Khongor ovoo. Ikh tamir soum, 2022.03.11*



*The project provided MNT 500,000 to each household and fodder to some herders.*





*PUG meeting of Ikh Am, Undurshireet soum*



*The project provided MNT 500,000 to each herders household in Ikh Am,PUG, Undurshireet soum*



*Meeting of Dulaan Khaikhan herders' group, Bogd soum, 2022.03.09. The project provided MNT 500,000 to each herder household.*



#### **Project fund and its allocation:**

In 2017-2022, the project funding was allocated to the three sites in different amounts using biomass utilization rate and the CENTURY model, and implementation of the grazing management plan.

During this period, the herders in the groups discussed how to use the money at their group meeting and agreed to establish a mutual micro loan fund to lend money to their herders. Mongolian nomadic herders typically receive their income only twice a year; in spring from combing their goat cashmere and in autumn around October and November from selling their livestock. Herders often do not have any other fixed income in other times of the year, so they frequently get loans from the bank. Over 90 percent of all herders take bank loans with a monthly interest rate of 2.0%. Therefore, a mutual fund was created to meet this need. This way the project funding is being raised and used in a transparent way to inform and implement the project objectives, and accessible for all herders to use it for activities such as building and repairing animal shelters, preparing hay, purchasing a small scale equipment, making 'otor' movements, operating wells, buying gas for transporting their livestock products to sell at the soum center and centralized markets. accessible and transparent. Participants are also discussing about raising this fund by investing money from the group herders.

*Report written by Prof. Dorligsuren Dulamsuren (MSRM)*

## 1. Hongor Ovoo

The Hongor Ovoo herder group has been using the pasture according to the Pastureland Management Plan which was approved by the soum's Citizens' Representatives Khural in 2019, for the period til 2024, and the Management Plan set out in Phase II PDD, Annex 5. In Year 7 the number of livestock (sheep units) increased by 3.4 % compared with the 2014 baseline. However, the actual number of livestock decreased in 2021 by 4.1% compared to the baseline.

Compliance with the pasture schedule meets the target, with both average annual mobility of herding households and numbers of movements normal compared to previous years. (Table 1).

**Table 1. Hongor Ovoo Heseg actual livestock numbers**

Year	Camel	Horse	Cattle	Sheep	Goat	Total
2014		880	2260	7120	3835	14095
2015		825	2450	7215	3824	14314
2016		1017	2697	8758	4237	16709
2017		906	2483	6590	3414	13393
2018		804	2432	7120	3448	13804
2019		652	2895	8203	3143	14893
2020		635	2083	7100	2503	12321
2021		907	2669	7152	2788	13516

Five forest protection cooperatives were previously established within Hongor Ovoo PUG and signed an agreement with the soum governor and were issued a cooperative certificate. "Shiree bulan", "Neg Sanaa", "Ikh Ulunt", "Khaltar Angarkhai", "Khaluun Us" cooperatives developed plans for forest organization and forest management.

In Year 7, the soum governor and the forest unit designated "Ikh ulunt" cooperative to do forest cleanup of an area of 0.3 hectares and "Khaltar Angarkhai" cooperative to do forest cleanup in area of 0.4 hectare. These activities were completed as planned.

## 2. Ikh Am

According to the soum's land utilization plan, "Ikh Am" PUG of Undurshireet soum, Tuv aimag made a Pasture Use Agreement with the soum's land inspector based on the soum governor's order of September 12, 2017 (2017-2031). The heseg herders have been using the pastures in seasonal rotation as scheduled. The number of livestock (sheep units) decreased by 25.1 percent in 2021 to compared to the 2014 baseline. The actual number of livestock also decreased in 2021, in this case by 12.9 % compared to the 2014 baseline. The decline in livestock numbers reflects the project's efforts to reduce the negative impact of overgrazing

on herders' livelihoods, as well as to provide training, advise and encourage small businesses, as well as increased livestock exports to foreign markets, increased livestock prices and the introduction of income tax on livestock.

**Table 2. Ikh Am Heseg actual livestock numbers**

	Camel	Horse	Cattle	Sheep	Goat	Total
2014	0	1188	1143	10457	6960	<b>19748</b>
2015	18	1503	1337	11882	7677	<b>22417</b>
2016	29	1477	1377	13501	7574	<b>23958</b>
2017	26	1161	1005	10853	5798	<b>18843</b>
2018	2	809	985	10529	6046	<b>18371</b>
2019		971	982	11710	7156	<b>20819</b>
2020		515	686	11415	6880	<b>19496</b>
2021		678	649	10309	5556	<b>17192</b>

Considering the herd structure of Ikh Am PUG herders, sheep account for 60% and goats for 32.3% of the total livestock, and sheep and goats account for 47.1 percent and 32.7 percent of household income, respectively. The majority of herds are sheep and goats, which is more adapted to the climatic conditions of the steppe region. The low proportion of camels and cattle in this region is due to the ecological characteristics of steppe pastures.

As previously reported, Mr. Nyambuu, herder from Ikh Am PUG was issued a volunteer ranger's license by the Ministry of Nature and Environment. The PUG herders have been taking actions to protect wildlife such as wild sheep, deer, and antelopes. In order to protect wildlife including deer and antelopes from poachers, the PUG herders took turns to patrol and guard them every 45 days in fall. In spring, herders rotated every 30 days to patrol and guard deer from poachers who try to poach deer for their horns. These actions help wildlife to raise naturally. In January 2021, the “Doshit and Bayan Ulaan” mountainous area herders, in cooperation with hunting organizations, regularly provide salt ,hay for deer, antelope and argali. Every year, S.Munkhbat and J.Tsogoo, herders of Ikh Am PUG, took an active part in this work.

In 2021, a total of 18 herder households received a loan of MNT 62.5 million for a period of 6-12 months. For example, herder J.Tsogoo is buying leather and sewing machines and producing products, while herder Ulzii Nyam is reducing the number of livestock and buying a small number of dairy cows to supply milk to the soum. Herder Erdenebat has purchased a large tractor and is pushing the manure from the winter shelters of his local family. Some herders spend on hay and fodder, while others spend on petrol for rent, rent cars and sell their products.

### 3.Dulaan Khairkhan

According to the soum's land management plan, Dulaan Khairkhan HG of Bogd soum, Bayankhongor aimag made a Pastureland Use Agreement with the soum land inspector based on the soum governor's order in 2017. The number of livestock (converted to sheep unit) decreased by 8.0 % in 2021 compared with baseline, 2014. The actual number of livestock also decreased in 2021, this time by 31.1% compared to the year 2014 baseline. The number of livestock in the Dulaan Khairkhan group has decreased by 29.9-31.9% for the last two years, respectively, in part due to the drought in those years. Due to the drought, on the one hand, and in order to protect against the next year's drought and dzud, most of the mother animals have not been inseminated, leaving large animals without offspring. This is a traditional way of dealing with the climatic risks of nomadic herding.

In 2021, the average number of seasonal movements per household and distances as compared to Year 6 increased slightly. One of the factors contributing to pasture improvement is the traditional rotational grazing.

**Table 3. Dulaan Khairkhan actual livestock numbers**

Year	Camel	Horse	Cattle	Sheep	Goat	Total
2014	201	85	65	531	3940	4822
2015	195	96	64	606	4383	5344
2016	230	111	73	719	4787	5920
2017	158	72	63	562	3864	4719
2018	202	91	47	528	4008	4876
2019	224	98	39	531	4109	5001
2020	150	54	34	354	2874	3466
2021	147	64	47	365	2697	3320

As previously reported, the heseg herders made a plan to collectively protect saxaul trees and requested the Citizens' Representative Hural to ban cutting and using saxaul trees for fuel. As a result, the saxaul forest is regenerating and new trees are growing. The numbers of stumps decreased by up to 80% since the baseline.

25% of the herder households fixed their winter and spring shelters in 2021.

According to the livestock structure of Dulaan Khairkhan herder group, camels and goats account for 85.6% of the total number of livestock in the Gobi desert



region, and 91.7% of household income.

Due to the specifics of the Gobi Desert region, 48.9% of household income comes from livestock and meat sales and 51.1% from cashmere sales. In terms of the income gap, poor households earn 29-32.7% of the income of wealthy households. Therefore, the project pays more attention to these poor groups and provides soft loans.

## Annex 2. Ongoing monitoring results for all participants

Monitoring results for Year 7 are summarised in Section E, Table 8a & 8b.

Further supporting information from MSRM Annual report for Year 7 is also included as part of Annex 1, above.

Carbon modelling calculations are presented in the following tables. These underpin the figures for carbon sequestration achieved in Year 7, as presented in Section C, Table 4 of the main report.

**Table Annex 2a: Hongor Ovoo, Ikh Tamir soum. Grazing Management Activity Description by Grazing Location**

1	Grazing location	Riparian meadow		Mountain meadow			Mountain steppe		
		spring/summer/fall	summer	Winter	summer/fall	winter/spring	fall	winter/spring	summer/fall
	<b>Year 7 (2021-2022)</b>								
	start of grazing season (dd/mm)	25-Mar-21	12-Jun-21	15-Oct-21	25-May-21	1-Nov-21	20-Aug-21	15-Oct-21	25-May-21
	end of grazing season (dd/mm)	20-Aug-21	1-Aug-21	25-Mar-22	1-Nov-21	1-May-22	15-Oct-21	25-May-22	15-Oct-21
	number of days grazing in this location	148	50	162	160	182	56	222	143
	average number of moves (camps) in this location	5	4	3	5	3	4	3	5
	average number of sheep units grazing in this location	3,775	6,807	8,609	1,841	4,025	4,231	8,316	4,296
	area (ha)	1,483.5	2,651.2	4,639.4	786.4	2,169.1	1,647.9	4,481.8	1,292.6
	yield (kg DM ha)	<b>618.2</b>	<b>623.8</b>	<b>899.8</b>	<b>568.6</b>	<b>899.8</b>	<b>623.8</b>	<b>899.8</b>	<b>807.3</b>
	total yield (kg DM)	917159.0	1653718.7	4174319.6	447115.6	1951669.4	1027869.2	4032544.4	1043532.1
	<b>estimation of sustainable carrying capacity</b>								
	recommended biomass utilization rate (%)	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.4
	kg DM per sheep unit per day	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	number of days grazing for each plot in this location	30	13	54	32	61	14	74	29
	total number of Sheep unit that can be grazed to sequester carbon	11066.1	37799.3	27607.9	4990.1	11489.4	20976.9	19462.1	10424.9
		<b>0.34</b>	<b>0.18</b>	<b>0.31</b>	<b>0.37</b>	<b>0.35</b>	<b>0.20</b>	<b>0.43</b>	<b>0.41</b>

**Table Annex 2b: Ikh Am, Undurshireet soum. Grazing Management Activity Description by Grazing Location**

	Riparian meadow	Mountain steppe		Steppe	
	Spring	Spring	Winter	Spring	Winter
<b>Year 7 (2021-2022)</b>					
start of grazing season (dd/mm)	1-Mar-21	1-Mar-21	20-Nov-21	1-Mar-21	20-Nov-21
end of grazing season (dd/mm)	10-Jun-21	10-Jun-21	1-Mar-22	10-Jun-22	1-Mar-22
number of days grazing in this location	101	101	101	101	101
average number of moves (camps) in this location	6	6	3	6	2
average number of sheep units grazing in this location	4647	3759	8528	7602	7480
<i>area (ha)</i>	851.7	703.3	7804.8	1517.1	7441.3
<i>yield (kg DM ha)</i>	<b>676.2</b>	<b>662.4</b>	<b>690</b>	<b>621</b>	<b>634.8</b>
<i>total yield (kg DM)</i>	575919.5	465865.9	5385312.0	942119.1	4723737.2
<b>estimation of sustainable carrying capacity</b>					
recommended biomass utilization rate (%)	0.5	0.4	0.3	0.5	0.4
kg DM per sheep unit per day	1.4	1.4	1.4	1.4	1.4
<i>number of days grazing for each plot in this location</i>	17	17	34	17	51
total number of Sheep unit that can be grazed to sequester carbon	12218.9	7907.2	34277.1	19988.4	26725.5
	<b>0.38</b>	<b>0.48</b>	<b>0.25</b>	<b>0.38</b>	<b>0.28</b>

**Table Annex 2c: Dulaan Khairkhan, Bogd soum. Grazing Management Activity Description by Grazing Location**

	Grazing location	Mountain desert steppe		Desert steppe	
		winter/spring	fall	summer/fall	fall
1.1	<b>description of baseline grazing practices</b>				
	<b>Year 7 (2021-2022)</b>				
	start of grazing season (dd/mm)	10-Nov-21	20-Aug-21	1-May-21	20-Aug-21
	end of grazing season (dd/mm)	1-May-22	10-Nov-21	10-Nov-21	10-Nov-21
	number of days grazing in this location	173	82	193	82
	average number of moves (camps) in this location	5	4	5	4
	average number of sheep units grazing in this location	3841	1562	1519	760
	<i>area (ha)</i>	9023	4010	3750	2051
	<i>yield (kg DM ha)</i>	<b>163</b>	<b>139</b>	<b>145</b>	<b>132</b>
	<i>total yield (kg DM)</i>	1469305.3	558913.8	543375.0	271716.5
	<b>estimation of sustainable carrying capacity</b>				
	recommended biomass utilization rate (%)	0.4	0.3	0.5	0.3
	kg DM per sheep unit per day	1.4	1.4	1.4	1.4
	<i>number of days grazing for each plot in this location</i>	35	21	39	21
	total number of Sheep unit that can be grazed to sequester carbon	12133.0	5842.3	5027.5	2840.2
		<b>0.32</b>	<b>0.27</b>	<b>0.30</b>	<b>0.27</b>

**Annex 2d: C sequestration per ha by pasture type under differing grazing pressures, Hongor Ovoo**

See Table 8a in main text.

**Annex 2e: C sequestration per ha by pasture type under differing grazing pressures, Ikh Am**

See Table 8a in main text.

**Annex 2f: C sequestration per ha by pasture type under differing grazing pressures, Dulaan Khairkhan**

See Table 8a in main text.

## Annex 3. Reallocation of commitments

n/a

## Annex 4. Socioeconomic monitoring results

Again, these are reported in Table 8b.

MSRM's annual reports, which provide further details of herders' activities and successes, are included at Annex 1, above.

## Annex 5. Conservation and monitoring results

These are reported in Tables 8a, 8b, referring to Annex 2.

## Annex 6. Impacts

Monitoring results as reported in previous annexes and in Table 8b.

## Annex 7. Community meeting records (summary)

Meetings and training events with *heseg* members are described in Section H above.

## Annex 8. Historic sales data

**Table 11: Historic sales data**

Invoice Date	Date of receipt by MSRM	Vintage	Buyer	No of PVCs	Price per PVC (\$)	Total sale amount (\$) *	% Received by participants *
06/02/2017	15/05/2017	2015-2016	CLevel	50			70%
01/07/2017	04/10/2017	2015-2016	ZeroMission	2500			70%
15/12/2017	27/11/2018	2015-2016	ZeroMission	500			70%
31/05/2018	27/11/2018	2015-2016	ZeroMission	1000			70%
02/04/2019	05/04/2019	2015-2016	CLevel	140			70%
09/03/2019	PV escrow	2015-2016	ZeroMission	700			70%
07/05/2019	15/05/2019	2015-2016	ZeroMission	1653			70%
05/06/2019	18/06/2019	2015-2016	ZeroMission	328			70%
26/07/2019	19/02/2020	2015-2016	CLevel	50			70%
05/09/2019	18/10/2020	2015-2016	myclimate	12784			70%
05/09/2019	18/10/2020	2015-2016	myclimate	310			70%
05/09/2020	18/10/2020	2016-2017	myclimate	6906			70%
02/10/2019	11/11/2019	2016-2017	ZeroMission	624			70%
06/02/2020	13/02/2020	2016-2017	ZeroMission	454			70%
02/03/2020	13/04/2020	2016-2017	ZeroMission	1181			70%

16/03/2020	20/03/2020	2016-2017	Clevel	300			70%
17/02/2021	04/06/2021	2016-2017	Clevel	50			70%
27/03/2021	02/04/2021	2016-2017	Zeromission	547			70%
24/03/2021	13/04/2021	2016-2017	Azolla	70			70%
14/04/2021	04/08/2021	2016-2017	Clevel	320			70%
04/06/2021	04/08/2021	2016-2017	Clevel	500			70%
01/07/2021	16/07/2021	2016-2017	Eternal Landscapes	87			70%
06/07/2021	27/08/2021	2016-2017	Zeromission	28			70%
14/07/2021	04/08/2021	2016-2017	Clevel	636			70%
23/07/2021	04/06/2021	2016-2017	Clevel	300			70%
27/10/2021	16/02/2022	2016-2017	myclimate	7,997			70%
27/10/2021	16/02/2022	2015-2016	myclimate	7,592			70%
27/10/2021	16/02/2022	2016-2018	myclimate	17,975			70%
27/10/2021	16/02/2022	2018-2019	myclimate	25,092			70%
				<b>90,674</b>			

**Table 12: Summary of historic sales data**

International bank wire fees (\$)	
Local bank charges	
PV issuance fees (\$)	
Total sales after deduction of bank fees and issuance fees (\$)	
Amount assigned to participants (70%)	430,996.85