Pastures, Conservation and Climate Action, Mongolia

Annual Report Year 6 (01.04.2020-31.03.2021)

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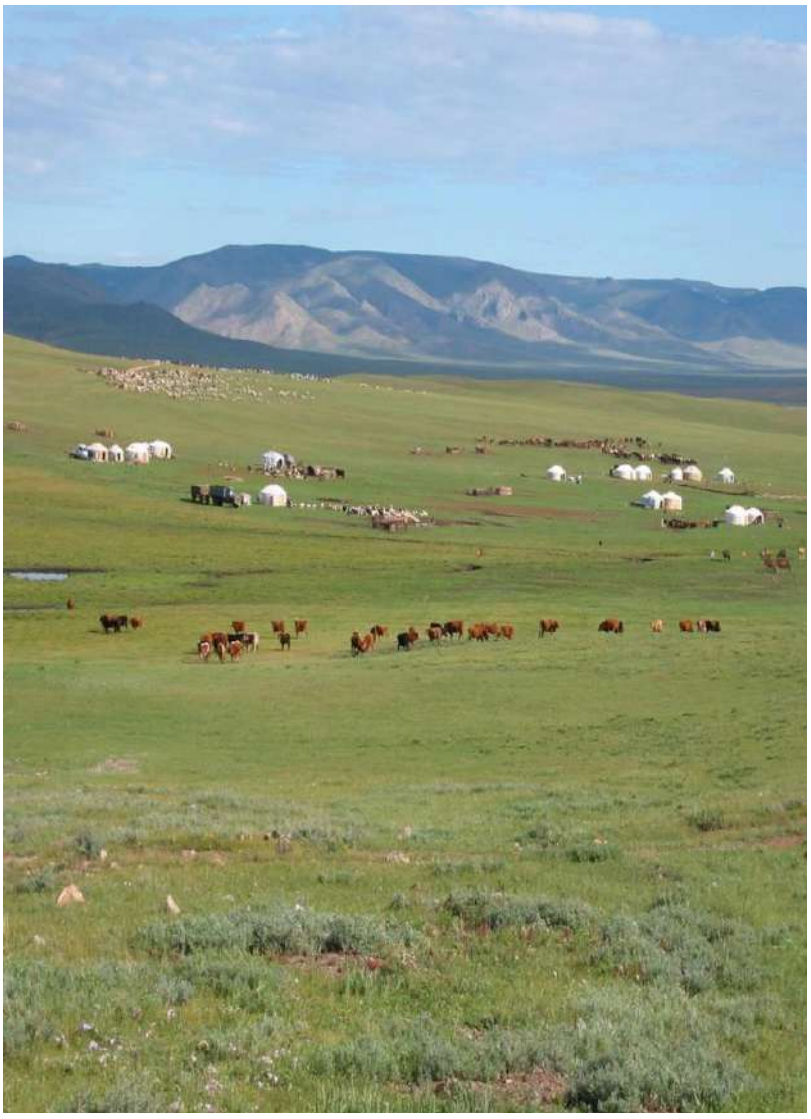

Summary

Project overview	
Reporting period	1st April 2020 - 31st March 2021
Geographical areas	3 herder community (*heseg*) areas at sites across Mongolia: *i)* Hongor Ovoo *heseg*, Ikh Tamir *soum* (district), Arkhangai *aimag* (region) (36,756ha) ii) Ikh Am *heseg*, Undurshireet *soum*, Tuv *aimag* (18,241 ha) iii) Dulaan Khairkhan *heseg*, Bogd *soum*, Bayankhongor *aimag* (22,485ha)
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 2020)**	**Added/ Issued this period (April 2020- March 2021)**	**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*	124 (Year 1) 114 (Year 2-4) 116 (Year 5)	0	116
Area under management (ha) where PES agreements are in place	77,482	0	77,482
Total PES payments made to participants (USD)	78,290.7	8,195.68	86,486.38
Total sum held in trust for future PES payments (USD)	64,393.68	-4243.2	60,150.48
Allocation to Plan Vivo buffer (tCO_2) (including this issuance)	18,454	3,607	22,061
Saleable emissions reductions tCO2)	100,770	17,663	118,433
Unsold Stock at time of Submission (PVC)			0
Plan Vivo Certificates available for future issuance			**0**
Plan Vivo Certificates (PVCs) issued to date			**100,770**
Plan Vivo Certificates requested for issuance (2020-2021 Vintage)			**17,663**
Total PVCs issued (including this report)			**118,433**

*****The number of herding families decreased by 10 from 124 to 114 between Year 1 and Years 2-4. This is due to the following reasons: three herding families moved to another province and Ulaanbaatar city. three pastoral families moved to live in the centre of their village. The heads of three herder families died, and one family stopped to engage in animal husbandry production. In 2020, two families joined the project, increasing the total to 116. This is due to the fact that the children of 2 herding families have started a new family and began herding themselves.

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 Years 2-5, 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. Project site visits by prospective purchasers, who were able to meet with participating herders directly, were also important milestones in Year 6 and translated into subsequent sales. Proceeds from certificate sales (less agreed MSRM management costs of 30%) continued to be distributed across the participating project sites and allocated to activities as agreed by the herder groups (heseg) themselves.

As in Year 5, in Year 6 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 Year 5 report, for Year 6 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 from Year 4 onwards and continuing into Year 6, as indicated in Table 6 (this report), with some major sales to new purchasers. Good pasture yields, as in Year 5, again reduced the need for many participating herders to make long distance *otor* movements in Year 6, and facilitated compliance with pasture management plans and stocking rates, as did relatively high prices for livestock products, which encouraged offtake for sale. Participating *heseg* at all sites were active and successful in taking on new and enhanced 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, 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 tree planting amongst the herder group that represent desert steppe environments*'. This observation was made in reference to the requirements for permanence (Item 2.4, Validation Report). As noted in the Year 5 and Phase I Annual Reports, these points for action were discharged by MSRM training for heseg on planting green fodder (oats and barley). They were also discharged by further trainings on pasture degradation and ways to reduce this, on rotational pasture use and on carbon sequestration

throughout Years 2-6.

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 in this and previous Annual Reports, MSRM instituted further training in land management techniques for *heseg* members in 2016, and 2017, 2018, 2019 and 2020. Training was also conducted with local officials, concerning collaboration with herders, making agreements with them and supporting herders' cooperation and collective action.

Table 2: Progress against corrective actions

Document	Corrective action	Activity against this
Validation Report	**Section 2.4: Permanence** 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 and 2020 and Spring 2021 (Years 2, 3, 4, 5 and 6).
Validation Report	**Section 2.7: Monitoring** 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 and 2020. Local officials were also invited to specific training events, and training materials and project outputs shared with all parties.

A4 Future Developments

Other major conservation organisations and government bodies active in Mongolia continue to show 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 Approved Approach '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 PDD Annex 5 Management Plans. Modelled carbon reductions in Year 6 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 6. 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

Name of technical specification	Area (Ha)	No herding households	No Community Groups
TS1	77,482 ha (total pasture areas for all three sites – see Project Indicators, above)	116	3

There have been no new technical specifications submitted to the PV Foundation for approval during or since the completion of Phase I, nor are there any currently in development. The project has not expanded to new communities or geographical areas in this reporting period.

B2 Project activities in addition to those generating Plan Vivo Certificates

The activities reported are those set out in the Phase II 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 Phase II 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 6 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 6;
- 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;
- As in Year 5, the forest cooperative in Ikh Tamir soum purchased oat seeds with PCCA project funding and the project participating herder families planted animal fodder. Planting animal fodder is beneficial for herders as it is much cheaper than purchasing animal fodder from the market as well as it helps to rotate and rest the pastureland. In the 2020–2021

monitoring period, 20 herder families in Ikh Tamir soum harvested 30 tonnes of green fodder;
- Repair of fences and winter shelters, with 12 fences/ shelters repaired in Year 6, in addition to those repaired in previous years;
- 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 2015 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 6 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 6;
- 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 6 and in accordance with targets set;
- Encouraging herders who have reduced the number of livestock to engage in other types of production and services, such as sewing and purchasing good breeds of dairy cattle.

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

For Dulaan Khairkhan herder group: In Year 6 of the project these additional activities entailed:
- Protection of argali, ibex and goitered gazelle, e.g. through herder patrols and surveys;
- Protection of saxaul forest, with numbers of cut stumps decreased by >80% by comparison with 2015 baseline data by the end of Year 6;
- Repair of fences/winter or spring shelters, with 6 fences/ shelters in Year 6;
- Hay preparation, with increased percentage of herders with adequate hay provision in Years 6, and according to 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 17,663 certificates, already earned through activities in Year 6, to meet buyer demands. For Year 6, and as discussed in Section E below, despite some small increases in livestock numbers (by sheep units) at the Hongor Ovoo site, these were

offset by higher pasture yields and greater mobility of herders. This resulted in carbon sequestration being achieved, albeit slightly below the volumes initially modelled in the Phase II PDD for Hongor Ovoo. For other sites, decreases in livestock numbers, combined with higher than predicted herder mobility and/ or pasture yields, facilitated carbon sequestration in Year 6.

In order to ensure the results are calculated very conservatively, the project will only issue credits in accordance with recorded (rather than predicted) grazing pressures, as can be seen below:

Table 4: Statement of tCO_2 reductions available for issuance as Plan Vivo Certificates based on activity for reporting period 01/04/20– 31/03/21

NB: Risk buffer allocations are different across the three sites (H.O. 10%, L.A. 20%, D.K. 20%)

Area ID	Total area (ha)	Tech. Spec	Saleable ER's (tCO_2) generated in previous periods* (end Phase I)	Saleable ER's (tCO_2) available from previous periods (Phase II only)	Total ER's (tCO_2) achieved this period**	% Buffer	No. of PVCs allocated to buffer from ER's achieved this period	Saleable ER's (tCO_2) from this period	Issuance request (PVCs)	ER's (tCO_2) available for future issuances
Hongor Ovoo	36,756	Improved grassland management	44,287	4,232	6,470	10	647	5,823	5,823	0
Ikh Am	18,241		12,707	3,426	5,506	20	1,101	4,405	4,405	0
Dulaan Khairkhan	22,485		33,680	2,438	9,294	20	1,859	7,435	7,435	0
TOTAL	**77,482**		**90,674***	**10,096**	**21,270**		**3,607**	**17,663**	**17,663**	**0**

*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_2 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
CLevel	*5,900*		*TS1*
Zeromission	*5,950*		*TS1*
Earthly	*500*		*TS1*
Myclimate	*5,313*		*TS1*
TOTAL	***17,663***		

C4 Data to support issuance request

Under the Management Plans in the Phase II 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 Khairkhan are found in Annex 5 of the PDD, with equivalent tables for Ikh Am included as Table F1a and F1c in the main body of the 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). Actual rates for Year 6 per site are summarised in C2, Table 5 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 6 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 6 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 are included in Part E, Monitoring Results. MSRM's Annual Report for Year 6 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
2021.02.17	2021.06.04	2016-2017	CLevel	50			70%
2021.03.27	2021.04.02	2016-2017	ZeroMission	547			70%
2021.03.24	2021.04.13	2016-2017	Azolla	70			70%
Total				**667**			

*Pricing reported for internal monitoring purposes only and is removed from the final published document.

Table 7: Summary of Sales in Year 6

International wire bank fees ($)*	
Local bank charges*	
PV issuance fees ($)*	
Total sales after deduction of bank fees ($)*	
Amount assigned to participants (70%)	3,952.48

*Charges and fees reported for internal monitoring purposes only and is removed from the final published document

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).

The project's full historic sales data, including sales data for this reporting year, is provided in Annex 8.

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 6) (for Phase I, Years 1-4, see Year 4 AR)

			C Seq. (tCO_2e) p.a. at different grazing pressures				C Seq. (tCO2e) based on recorded grazing pressure at each site (Year 6)*
Site	Pasture type	Season	30%	40%	50%	> 50%	Total Yr 6
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
			13672	**8860**	**4702**	**0**	**6470**
ii) Ikh Am	Riparian Meadow	Spring	988	466	13	0	466
	Mountain Steppe	Spring	628	227	-46	0	227
	Mountain Steppe	Winter	4302	3534	2213	0	2213
	Steppe	Spring	1354	490	-98.91	0	490
	Steppe	Winter	4102	3369	2110	0	2110
			11374	**8086**	**4191**	**0**	**5506**
iv) Dulaan Khairkhan	Mtn Desert Steppe	Winter/spring	4973	4086	2559	0	4973
	MDS 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
			12885	**7806**	**3047**	**0**	**9294**

*these grazing pressures are derived from Annex 2 monitoring results Tables 2a-2c, and recommended biomass utilisation rates for each site and pasture type

Table 8b: Summary of Overall Monitoring Results (Year 6)

Site and 'Traffic light'[1] indicator status	Specific Activities (Year 6)	Indicators (1-3) & Targets (expected results)	Results Achieved
Hongor Ovoo heseg			
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. 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);** 1% by end 2022, 2023. iii).% of HG households that comply with schedule (80% in summer and winter 2019; 85%, 2020, 90% 2021 **(Year 6),** 95-100% 2022/29).	i) In 2020-2021, grazing pressure across various pasture types was 50% or less, as per targets. ii) In 2020, The actual number of livestock decreased by 12.6% compared to the baseline (2014-5) due to introduction of taxation on livestock and increased livestock sales. However, nos by sheep units increased slightly (by 4.4%) due to a decrease in the number of young animals and increase in mature animals in the total herd. iii) 85-90 % of the herding households moved an average of 70 km, 4-5 times in a given year to rotate pastures. Heseg leader reported full (100%) compliance with pasture use schedules. Target met.

	iv). Assist selling livestock over pasture carrying capacity.	iv) Decrease in number of livestock.	iv). Livestock number decreased by 12.6 % compared to the baseline due to increased livestock sales. PCCA facilitated livestock sales through connecting herders with people and stores who will buy their meat, and through funds being used by participants to provide loans for the purchase of gasoline and fuel for transportation of livestock and meat. E.g. in Ikh Tamir the PCCA coordinator has started making contact with the aimag center meat processing plant and herders are taking loans from the mutual fund to sell and transport their meat.
	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). In 2020-2021 (Year 6), there was no migration to these areas due to the favorable weather and the decrease in the number of animals.
2.Biodiversity Conservation	i) Herder group partnerships established through the project in Year 1 now undertaking 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 6 were to conduct forest clean up (specific targets and compliance highlighted below); protection from illegal cutting and collection and sale of waste wood. These were completed successfully.
	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).Every fall, the Forest cooperative conducts patrols during berry and nut picking, focusing on prevention of illegal logging, and poaching  *Collected waste wood* Ikh Olont cooperative conducted forest clean-up of total 2.0 ha and 60 m3 waste wood was transported to the soum center and sold. Targets achieved.

	iii). Increased herders' participation in decision-making on environmental issues – e.g. licenses for wood cutting	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. 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 According to Herders group meeting decision, stopping attempt of illegal cutting trees by making a schedule for patrolling the places where the members live. Year 6 targets achieved.
	iv). Production of tree seedlings (native species) for reforestation	iv) By end 2021 nursery established and produced first seedlings ready for planting.	iv) Nursery establishment ongoing. 50 seedlings planted in 2020 (Year 6).
3. Socioeconomic activities	i).Repair fences & winter/spring shelters.	i) Repair 5 fences/ shelters p.a (incl. Year 6).	i).5 fences/ shelters repaired by end March 2021. Target achieved.  *Repair of spring shelter, HO heseg, 2020*

	ii). Collaborative production & marketing of local brand milk products.	ii) Increased annual HH income through marketing milk products, and against baseline.	ii). Ikh Tamir soum has a large number of cattle and yaks, and herders in this soum prepare various home-made dairy products which are well known in the country, thus selling homemade dairy products is one of the main income sources for the herder families in this soum. In 2020 (Year 6), 30 herder families produced 3020 kg of curd and 1431 kg of butter and earned 13.7 million MNT.  *Herders make curd from their milk and dry it*
	iii). Gathering and sale of wild fruit & nuts.	iii) Increased annual HH income, and against baseline (% households with increased income, evaluated against baseline)	iii).About 60 percent of all families picked berries and nuts, and each family made a revenue of about 600,000-1,200,000 tugrugs on average.
	iv). Establish a herders' market.	iv)Increased annual HH income, and against baseline.	iv). No specific target for this activity in Year 6. The herder's market will be built and put into operation in 2022.
	v). Comb yak wool & deliver to markets.	v). Enhanced household income by end 2019 and in subsequent years (% households with increased income. Evaluated against baseline; year on year increase)	v). Herders increase their income by combing their yak's fluff and selling it. 53% of households prepared 600kg of yak wool and earned 7,200,000 MNT, an increase over Year 5.

	vi). Enroll herders to participate activity in project activities	vi) No specific targets for Year 6. Indicators include nos. of herders attending training events.	vi). Specialists and veterinarians of Soum Veterinary Service and Breeding Department gave advice on improving animal breeds to all herders twice in Year 6.
	vii). Sewing	vii) Increased income. Job creation. No specific targets for Year 6.	vii). Increased income was achieved through producing boots and other leather goods.  *One family are producing Mongolian shoes and horse equipment with loan from revolving fund.* 5-6 people in 3 households are provided with jobs and income.
	viii). Plant perennials for green fodder	viii) Sow perennials in spring/winter camps. (no specific targets for Year 6).	viii). Herders are growing green fodder on the manure at winter and spring camps. Hand fodder and nettle silage are prepared and pressed. In Year 6, each household also prepared an average of 1.5 tons hay.  *Green fodder at winter sites.*
	ix). Experiment and introduce soilless green fodder cultivation.	ix) Reduction of pasture load. No target for Year 6.	
Ikh am PUG			

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. 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. iii). % of households that comply with schedule (80% in summer and winter 2019; 85%, 2020, 90% 2021, 90-100% 2022/29). Increased annual mobility.	i). In 2020-2021, grazing pressure across various pasture types was 50% or less, as per targets. ii). In 2020, the number of animals (sheep units) decreased by 3% against baseline (2014-5). iii).85-90% of the herding households moved an average of 140 km, 5 times in a given year to rotate pasture. Heseg leader reported 100% compliance with schedule in Year 6. Therefore, targets have been achieved.
	iv). Experiment and introduce soilless green fodder cultivation.	iv). Reduction of pasture load	iv). No specific target for this activity in Year 6.

	v).Assist selling livestock over pasture carrying capacity.	v). Decrease in number of livestock.	v). In 2020 (Year 6), the actual number of animals decreased by 1.2% (3% in sheep units) against baseline (2014-5). PCCA facilitated livestock sales through connecting herders with people and stores who will buy their meat, and through funds being used by participants to provide loans for the purchase of gasoline and fuel for transportation of livestock and meat. The leader and coordinator of Ikh am PUG is contacting the traders and companies of Ulaanbaatar city to support the sale of livestock.
	vi).Dig hand wells	vi). 2 new hand wells created, enhancing water supply in currently under-used pasture areas. 1 by 2025, 1 by 2028. No specific targets for Year 6.	vi). Ikh Amn Doloon Khudag hand well was repaired and a new deep well was built. These wells supply water to more than 13,000 livestock from 32 herder households in the Ikh Am PUG.Target exceeded.  *Doloon khudag hand well*
2. Biodiversity Conservation	i)Protect red deer, argali, marmot and Mongolian gazelle - through conservation measures outlined in the IUCN summary Action Plans for the target species.	i)Enhanced populations of target species by 2029 as measured against baselines. ii) actions to protect species in accordance with agreed annual workplans.	i)No specific target for Year 6. ii) In January 2021, the “Doshit and Bayan Ulaan” mountainous area herders regularly provided salt, hay for deer, antelope and Mongolian gazelle.   *Ikh Am herders providing hay*

			In order to protect wildlife including deer and antelope from poachers, the heseg 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.
	iii). Planting trees at winter and spring shelters.	iii) Increased absorption of carbon dioxide. 3 households in 2022, 10 in 2025, 15 in 2028. No specific target for Year 6.	iii). Currently preparing for this larger scale tree planting.
	iv) .Clean area (collect rubbish brought downriver from Ulaanbaatar and deposited area)	iv)Cleaning /litter collection in May and October. Recreational aesthetic qualities of area improved through heseg members' regular litter collection	iv). Herders cleaned up garbage along the Tuul River every month and disposed of it at landfill.
3. Socioeconomic activities	i).Repair fences & winter/spring shelters.	i) 5 fences/shelters repaired per annum.	i). Achieved as planned and target exceeded: 12 families fixed their shelters.   *Winter shelters repaired by heseg herders.*

	ii). Collaborative production & marketing of milk and curd in season.	ii) Enhanced household income by end 2019 and in subsequent years – linked to milk products (% households with increased income, evaluated against baseline).	ii). 60% of all herding households sell their milk and milk products. Each HH earned some 1.5 million MNT on average per year for Year 6, with income increasing year on year. Herders made dairy products and sold them in their aimag's dairy product exhibition, 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.	iii). In winter, summer and autumn, when the workload of animal husbandry is reduced, women can increase their income by sewing. With project funding, 5 women from herders families are being helped to buy sewing machines.

	iv). Small scale processing of hide and skin of animals and deliver to markets	iv).Enhanced household income by end 2019 and in subsequent years – linked to hide and skin products (% households with increased income, evaluated against baseline).	iv). 20% of the herdsmen's households use leather for processing and use it to sew shoes and clothes. By increasing non-livestock income in this way, it is possible to reduce the number of animals.   *One family got a soft loan from the project revolving fund to buy raw materials and make shoes*
	v). Hay preparation	v) Establishment of hayfield by end 2019. Increased % of *heseg* households with adequate hay provision year on year from end 2019. Annual targets to be confirmed by *heseg* end 2019.	v). A total of 40 households prepared 200 tons hay, 28 tons of mixed fodder, and 48 tons green fodder for the winter. In 2020, 276 tons of hay and fodder were prepared, exceeding the target by 25%. Each herder household set a goal of preparing 5.5 tons of hay and fodder per year. In other words, 40 households have a goal of preparing 220 tons of hay and fodder per year. In 2020, 276 tons of hay and fodder was prepared, exceeding the target by 25 percent.   *Hay preparation, Ikm Am*
Dulaankhairkhan. HG			

1.Pasture management (carbon sequestration)	i) 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. 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). 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).	i). In 2020-2021, grazing pressure across various pasture types was 50% or less, as per targets. ii). In 2020, the number of animals (sheep units) decreased by 13.7% against the baseline (2014-15) and exceeds the overall target This large decrease in part reflects the imposition of a livestock tax, and also the impacts of a drought in Bogd sum in Year 6. Livestock mortality has also increased. iii). 85-90 % of the herding households moved an average of 200 km, 5-6 times in Year 6 to rotate pastures. Targets met. Herders' household movement has increased 25% and distance of movement some 33 % compared to previous years E.g Year 5.
	iv) Assist selling livestock over pasture carrying capacity	iv). Decrease in number of livestock.	iv).In 2020, the actual number of animals decreased by 28.1%.against baseline (2014). PCCA facilitated livestock sales through revolving funds being used by participants to provide loans for the purchase of gasoline and fuel for transportation of livestock and meat.

	v) Organise seasonal camping in underused areas	v).Improved pasture conservation through using reserve (less used) pasture and reducing grazing pressure in other areas	v).In the summer and autumn of 2020, which was a year of drought, 25% of all herder households migrated 400-500 km using reserve (less used) pasture.
2.Biodiversity Conservation	i) Protection of Argali, Ibex and goitered gazelle.	i).Baselines for target species populations are established. (Completed 2015. No specific targets for Year 6). ii).Capacity to conduct monitoring is established. (Completed. No specific targets for Year 6). iii).Enhanced populations of target species as measured against baselines. (No specific targets for Year 6).	ii). According to the decision of the group meeting, the herdsmen who live near the area where wild animals live, set up monitors and protect them. These 2 herders are provided with binoculars to count wild animals. Every year census counted by binoculars. iii).The number of wild sheep, ibex is increasing according to the herdsmen who live near the area where wild animals live and conduct the monitoring. In 2015, there were 30 wild sheep and 20 ibex. In 2020, 35 wild sheep and 25 ibex were registered.   Dulaankhairkhan HG herders continue to protect the wild sheep and goats in Ikh Bogd special protected area. Animals such as wild sheep and ibex, which are malnourished due to drought, are given hay and salt.
	iv) Protection of saxaul forest	iv).Regular controlled monitoring of saxaul forest by HG established.	iv). The heseg herders previously 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 renegerating and new trees are growing. The numbers of stumps decreased by up to 80% against baseline.Because herder households live near saxaul forests, each household protects its own saxaul. At group meetings, they discuss how to protect and provide guidance since 2016. This conservation activity can be considered as an established plan that has been implemented over many years under PCCA.

		Patrol routes, times and staff will be recorded and, where necessary, amended by the *soum* government and pasture user groups.	Four herdsmen who live near saxaul forest are patrolling on a quarterly basis according to the plan made by the group meeting.  Saxaul forest in Dulaan Khairkhan HG
	v) Protection of Argali, ibex and goitered gazelle's pasture.	v) Don't build new winter and spring shelters in grazing areas of wild sheep and goats. No specific target for Year 6.	v) In 2020, no new winter and spring shelters have been added since it was discussed at the group meeting. According to the decision of the group meeting, the herdsmen who live near the area where wild animals live, set up monitors and protect them.
3. Socioeconomic activities	i) Repair fences & winter/spring shelters	i).5 shelters/ fences repaired p.a	i) 5 herder families have repaired their winter and spring shelters in Year 6. Target met.

	ii)Experiment and introduce soilless green fodder cultivation	ii). Reduction of pasture load	ii.) No specific target for this activity in Year 6.
	iii) Hay preparation	iii). Every *heseg* family to prepare hay annually. Increased % of HH year on year with adequate hay provision. Annual targets to be confirmed by heseg.	iii). Every year, a herders household plans to make 4-5 tons of hay, but due to the drought in 2020, they prepared 1-1.5 tons of hay and bought other necessary feed from outside. Target not met in Year 6.
	iv) Establish a market to sell livestock, meat and raw materials	iv). Assist heseg herders to sell their livestock, meat and raw materials.	iv). No specific target for this activity in Year 6. Market planned to be established in Year 8.
	v) Sewing	v).Increase non livestock income and job creation. Enhanced income for participating HH by end of year.	v).The herders group participated in a trade fair organized in Ulaanbaatar city to sell their hand made products with support from the project. Handicraft products made and sold earned about 2.5 million MNT. It is considered that the set target has been met in Year 6.  *Handicrafts made by Dulaan Khaikhaan herders displayed at the trade fair in Ulaanbaatar city*
	vi) Making noodles	vi).Increase non livestock income and job creation. Enhanced income for participating HH by end of year.	vi). One herder received a low interest long term loan from the project fund and bought a small-scale noodle making equipments such as a dough mixer, a dough kneeder and a noodle cutter which uses them for preparing noodle dishes. 2 new jobs were created. She started making noodles in 2019, and in 2020, she produced 3000 kg of noodles and earned 6 million MNT. The target has been achieved in Year 6.

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 6, 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 6 (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 2020, the livestock number (by sheep units) increased by 4.4 %, but the actual number of livestock decreased by 12.6% 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 5.

Overall, carbon reductions, as modelled in the PDD and set out in more detail in Section C, were achieved in Year 6. This reflects the higher biomass (pasture yield) in Year 6, as measured in soum level statistics and compared to modelled levels, in conjunction with the mobility of the herders. Total PVCs claimed for Year 6 across 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 5, Part C, are derived using the Century model and technical specification set out in the PDD and these actual, rather than target, stocking levels and grazing practices. Data used for the three sites in Years 6 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. Significant successes were noted in terms of enhanced herders' roles and activities in environmental governance and biodiversity conservation and livelihood/ risk management activities. 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:

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 2020, compared to the baseline, the number of animals (sheep units) decreased by 3%, and the actual number of animals decreased by 1.3%. There have been no significant changes in the average number of seasonal movements per household and distances as compared to Year 5.

Further details and implications of Year 6 grazing patterns for issuance of certificates are as set out in Part C. As for Hongor Ovoo, the ERs in Table 5, Part C are derived using the Century model and technical specification set out in the PDD and the actual, rather than target, stocking levels and grazing practices in Ikh Am. 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. Herders continued to organise and take part in patrols to protect wildlife and provided fodder during harsh winters. Limited funds did however preclude additional planting or fencing of existing bushes/ planted areas at Ovootiin. Risk management and livelihood support activities were very successfully discharged.

Dulaan Khairkhan: In 2020, the number of animals (sheep units) decreased by 13.7% compared to the baseline, and the actual number of animals decreased by 28.1%. This large decrease to some extent reflects the imposition of livestock taxes and the drought in Bogd sum in Year 6. 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

Livelihood support and risk management activities were also successfully discharged, with additional activities around sale of livestock products and cooperative action within the heseg achieved in addition to those planned.

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 6 are as set out for each heseg in Section B1 and B2 above, and in Table 8b above.

E4: Environmental and biodiversity monitoring

Monitoring indicators for Year 6 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 8b, above.

Part F: Impacts

F1: Evidence of outcomes

As highlighted above and in Tables 8b in particular, Year 6 activities have continued to secure 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 (01/04/20 – 31/03/21)	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	$8195.68	$86,486.38	$60150.48*	0

** Payments previously held in trust were disbursed to the participants (herder groups) in the Spring of 2021 upon review of their work report and planned activities.*

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

Part H: Ongoing participation

H1: Recruitment

No further participants have been recruited in Year 6. 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 and 5 due to departure of 26 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). No further changes in the numbers of participants were noted in Year 6.

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 6, 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 6 a team from MSRM visited each of the three participating heseg. As in Year 5, 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 6, MSRM costs in training and capacity building with participating *heseg* and in monitoring were met through their allocation of funds from PV certificate sales.

Table 10: Allocation of costs

Expense	Narrative	Amount (USD$)	Contribution from sale of PVCs	Contribution from other sources
Travel expense	Training (global warming ,carbon emissions and pasture management)	**200**	**100%**	
	Survey and monitoring	**500**	**100%**	
	Participant meeting	**300**	**100%**	
MSRM staff time (2 staff 12 month)	Country management of project and Markit Account	**2000**	**100%**	

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 6 is also included below.

MSRM Year 6 Annual Report

Hongor Ovoo

The Hongor Ovoo herder group has been using the pasture according to the Five-Year Pastureland Management Plan which was approved by the soum's Citizens' Representatives Khural in 2015. In 2020, livestock numbers by sheep units increased by 4.4%, although the actual number of livestock decreased by 12.6% compared to the baseline, as shown in Table 1, below. This decrease reflects in part the introduction of taxation on livestock, and also increases in livestock sales. Compliance with the pasture schedule meets the target, with both average annual mobility of herding households and numbers of movements was 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

Depending on the number of livestock, each household prepared different amounts of natural hay. This year, each household prepared an average of 1.5 tons of natural hay, with a total of 92 ton for Hongor Ovoo PUG. 35 households purchased 35 tons of green fodder. 11.2 tons of bran was purchased in the PUG. Hand fodder and nettle silage were prepared and pressed. Herders are growing green fodder on the manure of winter and spring pastures. Each household purchased salt.

Green fodder planted by herders

Every year 30% of herder households fixed their winter and spring shelters.

All herders of the group participated in developing the “Pasture use and protection plan” in 2019 and had it approved by the group meeting, and since then (e.g., in Year 6) herders have been cooperating to protect and use the pasture properly. Five forest protection cooperatives were previously established within Khongor 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, which have been implemented in Year 6.

Specifically, these five forest communities protected the forest and collected and sold fruits, nuts and herbs. Each household earned an average of 2 million MNT.
"Ikh Olont" forest cooperative did a forest cleanup of an area of 1 hectares and 60 m3 cleaned scrap wood was transported to the soum center and sold.

Ikh Tamir soum has a large number of cattle and yaks, and herders in this soum prepare various home made dairy products which are well known in the country thus selling home made dairy products is one of the main income sources for the herder families in this soum. There is a major dairy products trade fair organized by the Ministry of Environment and Tourism of Mongolia in Ulaanbaatar city each year prior which herders from all parts of the country gather and sell their self prepared dairy products brought from their hometowns. As in previous years, in Year 6 the PCCA project participating herder families collaboratively participated in this trade fair organized in Ulaanbaatar city and sold their home made dairy products transported from their area. The project has assisted the herders to collaborate as a team to participate in the trade fair and to transport their dairy products to the city.

The trade fair of dairy products to the city in 2020

In 2020, the group herders combed their yak wool and sold 3.0 tons of yak wool.

Every herder household sold a minimum of 50 kg and maximum of 500 kg of dairy products.


Received and served more than 200 domestic tourists.

The revolving loan fund continued to be used by herder households in Hongor Ovoo heseg. Revolving fund loans have many advantages. Loans from the revolving fund are issued at an interest rate 1 percent lower than the bank interest rate, supporting herders' income and access to funds. Obtaining a loan from a bank also requires collateral and a lot of paperwork and time, while obtaining a loan from a revolving fund eliminates these challenges. Therefore, herders are very pleased with the project micro loan fund which allows them easy access and low interest loans.



Ts. Delgertsogt's family are producing Mongolian shoes and horse equipment with a loan from a revolving fund

B.Bolor-Erdene produces bread and bakery products with a loan from the revolving fund

Kh.Nansalmaa makes dumplings with a loan from the revolving fund

2. Ikh Am

As in Hongor Ovoo, 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, and reflecting the same factors, such as the introduction of taxation on livestock. Livestock sales have also increased. In 2020, compared to the baseline and Year 5. For Ikh Am, the number of animals measured in sheep units decreased by 3%, whilst the actual number of animals decreased by 1.3%. (Table 2).

Table 2. Ikh Am Heseg actual livestock numbers

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

The heseg herders have been using pastures in seasonal rotation as scheduled.

For Year 6, although the herder group used to hold quarterly meetings, they now meet more frequently, every time there is a problem to be solved. Due to the high number of otor movements in the autumn, the Citizens' Representative Khural approved a regulation on pastureland responsibility, which will be reviewed by the Ministry of Justice in January 2021. Herders of all PUGs agreed with the soum's livestock tax. They clean up the garbage along the Tuul River every month and dispose of it at landfill. In collaboration with the Governor's Veterinary Office and Agricultural Office, 70% of herders from the Ikh Am PUG actively participated in removing mice in the pasture.

Improving animal health and quality:

Each family has entered into a contract with the veterinarian for a blood test and slaughter of infected livestock. 70% of Ikh Am PUG herders have a contract with a veterinarian D.Nergui. 30% have a contract with a veterinarian R.Tumurkhuyag to improve the quality of veterinary services. In 2020, no diseases such as brucellosis, foot-and-mouth disease were detected in heseg herds.


In 2020, 9 households purchased a high yield meat “Bayantsagaan” breed from the fair


A total of 40 households prepared 200 tons of hay, 28 tons of mixed fodder, and 48 tons green fodder for the winter. Households also collected nettle silage and autumn garbage.

In January 2021, the “Doshit and Bayan Ulaan” mountainous area herders regularly provide salt, hay for deer, antelope and argali.

S.Munkhbat and J.Tsogoo, herders of Ikh Am PUG, took an active part in this work

In order to protect wildlife including deer and antelopes from poachers, the heseg 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.

12 Herders families fixed their winter and spring shelters.

In 2020-20201, besides implementing activities specified in the monitoring plan, the PUG herders plan make hand-made sheep wool products, and produce more dairy products to increase their revenue.

The PUG herders prepared dairy products and sold them at the their provincial dairy product exhibition. Every year, each household sells approximately 60 kg of butter, 25 kg of curd, 100 liters of milk, 25 kg of dried cheese, 120 kg of sour cheese and earn 1,260,000 MNT.

Herders continued to benefit from the mutual micro loan fund established using proceeds from certificate sales to lend money to the 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 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 2.5-3 % for 3-9 months. 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, making 'otor' movements, operating wells, selling livestock products at the soum center and centralized markets. Participants are also discussing about raising this fund by investing money from the group herders.

Herder Mr. Tsend received a low interest loan from the project fund to expand his animal skin processing factory by purchasing more equipments and raw materials. The animal skin processing factory processes sheep skin which were previously left unused and sell the process skin in the local market or makes clothing with the processed sheep skin.

3. Dulaan Khairkhan

In 2020, the number of animals (by sheep units) decreased by 13.7% compared to the baseline, and the actual number of animals decreased by 28.1% (Table 3, below). This large decrease in part reflects the imposition of a livestock tax, and also the impacts of a drought in Bogd sum in Year 6. Livestock mortality has also increased. In 2020 the average number of seasonal movements per household and distances as compared to Year 5 increased slightly.

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

One of the factors contributing to pasture improvement is the traditional rotational grazing. Herders' household movement has increased 25% and distance of movement some 33 % compared to previous years. In the summer and autumn of 2020, which was a year of drought, 25% of all herder households migrated 400-500 km.

The heseg herders previously made a plan to collectively protect saxaul trees and requested the Citizens' Representative Hural to ban cutting and using saxaul trees for fuel. This continues to be implemented. 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.

Protecting saxaul forests: As a result, saxaul is no longer used as a fuel.

Dulaan Khairkhan HG herders continue to protect licorice plants and saxaul trees as well as wild sheep and goats in Ikh Bogd special protected area. The local wildlife conservation volunteer Togookhuu and Amarsanaa reported that the number of wild sheep and goats have increased since the previous year.

Dulaan Khairkhan HG herders jointly fixed 5 winter shelters.

Each household prepared 4-5 tons of natural hay, 200-500 kg of bran, 200-300 kg of salt, and 200-400 kg of handmade fodder.

In 2020-2021, loans worth some 89,130,000 MNT were issued to 25 herder households.The loan is issued at 1% lower than the monthly interest rate of the Bank. Herders' annual income increases by MNT 10,695,600 from this loan interest rate difference.

Revolving fund survey for all sites:

According to the loan disbursement survey for 2019-2020, as reported in Year 6, the revolving funds were and will continue to be used for 1. Improvement of pasture management (haymaking, build and repair livestock shelters, purchase fodder, plant, purchase gasoline for movement, etc.), 2. sale of raw materials such as livestock, meat, milk, milk products, wool and cashmere, skin, etc 3. small business (carpentry, sewing, dumplings,noodles, etc.) 4. health and tuition fees. According to the revolving fund expenditure study, an average of 59.0% was spent on improving **pasture management** in three project sites. However, there are significant differences in the three sites. Dulaan Khairkhan, which had unfavorable weather conditions, spent 71.5% of the loan funds on fodder and otor migration, while Ikh Am used 65.49% on haymaking, plant of green fodder, construction and repair of sheds, and Khongor Ovoo herders spent funds on purchasing hay and fodder and breeding. **Sales of products and raw materials:** Ikh Am and Dulaan Khairkhan PUG spend 3.8-14.3% to sell their products, while Khongor Ovoo PUG spent 22.5%. **Small business;** Ikh Am spent more than the other two to increase their non-livestock income by running small businesses. **Hospital and tuition fees:** Up to 7.1-30 percent was spent on hospital and tuition fees. According to this loan disbursement, Khongor Ovoo is focusing on selling its products, while Ikh Am is focusing on small-scale production, while Dulaan Khairkhan HG is focusing more on otor movement and buying fodder.

Annex 2. Ongoing monitoring results for all participants

Monitoring results for Year 6 are summarised in Section E, Table 8a & 8b.

Further supporting information from MSRM Annual reports for Year 6 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 6, as presented in Section C, Table 5 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
Year 6 (2020-2021)									
start of grazing season (dd/mm)		25-Mar-19	12-Jun-19	15-Oct-19	25-May-19	1-Nov-19	20-Aug-19	15-Oct-18	25-May-19
end of grazing season (dd/mm)		20-Aug-19	1-Aug-19	25-Mar-20	1-Nov-19	1-May-20	15-Oct-19	25-May-19	15-Oct-19
number of days grazing in this location		148	50	162	160	182	56	222	143
average number of moves (camps) in this location		6	4	3	5	4	4	4	5
average number of sheep units grazing in this location		5,149	8,939	8,696	1,493	4,066	3,128	8,401	2,454
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)		**513.0**	**552.0**	**900.0**	**360.0**	**858.0**	**370.0**	**858.0**	**400.0**
total yield (kg DM)		761035.5	1463467.9	4175433.0	283104.0	1861087.8	609708.2	3845384.4	517048.0
estimation of sustainable carrying capacity									
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		25	13	54	32	46	14	56	29
total number of Sheep unit that can be grazed to sequester carbon		11018.9	33450.7	27615.3	3159.6	14608.2	12443.0	24745.1	5165.3
		0.47	**0.27**	**0.31**	**0.47**	**0.28**	**0.25**	**0.34**	**0.48**

Note: PDD. Phase II, pp -28. Sheep units (SU) are based on the following conversions and in accordance with accepted best practice in Mongolia:
adult camel: 5 SU; young camel: 1 SU; adult cattle: 6 SU; young cattle: 1.2 SU; adult horse: 7 SU; young horse: 1.4 SU; adult goats: 0.9 SU; young goats: 0.2 SU

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

	Location 1	Riparian meadow	Mountain steppe		Steppe	
		Spring	Spring	Winter	Spring	Winter
Year 6 (2020-2021)						
start of grazing season (dd/mm)		1-Mar-18	1-Mar-18	20-Nov-18	1-Mar-18	20-Nov-18
end of grazing season (dd/mm)		10-Jun-18	10-Jun-18	1-Mar-19	10-Jun-18	1-Mar-19
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		7805	5013	12211	7909	8516
area (ha)		851.7	703.3	7804.8	1517.1	7441.3
yield (kg DM ha)		**600**	**450**	**360**	**450**	**350**
total yield (kg DM)		511020.0	316485.0	2809728.0	682695.0	2604455.0
estimation of sustainable carrying capacity						
recommended biomass utilization rate (%)		0.4	0.4	0.5	0.4	0.5
kg DM per sheep unit per day		1.4	1.4	1.4	1.4	1.4
number of days grazing for each plot in this location		17	17	34	17	51
total number of Sheep unit that can be grazed to sequester carbon		8673.6	5371.7	29806.2	11587.5	18419.1
		0.90	**0.93**	**0.41**	**0.68**	**0.46**

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**
Year 6 (2020-2021)				
start of grazing season (dd/mm)	10-Nov-20	20-Aug-20	1-May-20	20-Aug-20
end of grazing season (dd/mm)	1-May-21	10-Nov-20	10-Nov-20	10-Nov-20
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	3603	2016	556	1031
area (ha)	9023	4010	3750	2051
yield (kg DM ha)	**140**	**120**	**135**	**110**
total yield (kg DM)	1263220	481200	506,250	225610
estimation of sustainable carrying capacity				
recommended biomass utilization rate (%)	0.3	0.3	0.5	0.3
kg DM per sheep unit per day	1.4	1.4	1.4	1.4

number of days grazing for each plot in this location	35	21	39	21
total number of Sheep unit that can be grazed to sequester carbon	7823.4	5030	4684	2358.3
	0.46	**0.4**	**0.28**	**0.44**

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%
				30,147			

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%)	146,636.84

*Charges and fees reported for internal monitoring purposes only and are removed from the final published document.