



Investing in rural people

MONGOLIA

Project for Market and Pasture Management Development (PMPMD)

Additional Financing Report

Main Report and Appendices

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Currency Equivalents

(as of April 2016)

Currency Unit	=	Tugrug (MNT)
USD 1.0	=	MNT 2,050

Weights and Measures

1 kilogram	=	1000 g
1 000 kg	=	2.204 lb.
1 kilometre (km)	=	0.62 mile
1 metre	=	1.09 yards
1 square metre	=	10.76 square feet
1 acre	=	0.405 hectare
1 hectare	=	2.47 acres

Abbreviations and Acronyms

AGRA	Alliance for the Green Revolution in Africa
ADB	Asian Development Bank
AF	Additional Financing
ALAGAC	Administration for Land Affairs, Geodesy and Cartography
AWPB	Annual Work Plan and Budget
CCA	Climate Change Adaptation
EGF	Employment Generation Fund
EU	European Union
FAO	Food and Agriculture Organization of the UN
FIs	Financial Institutions
GoM	Government of Mongolia
FY	Financial Year
HDI	Human Development Index
LGF	Loan Guarantee Fund
KM	Knowledge Management
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MFI	Microfinance Financial Institution
MOF	Ministry of Finance
MOFA	Ministry of Food and Agriculture
MOI	Ministry of Industry
MOL	Ministry of Labour
MoU	Microfinance Financial Institution
MTR	Mid Term Review
NBFIs	Non-Bank Financial Institutions
PMU	Project Management Unit
PSC	Project Steering Committee
RF	Revolving Fund
SCGF	State Credit Guarantee Fund
SLA	Subsidiary Loan Agreement
SMEs	Small and Medium-sized Enterprises
TA	Technical Assistance
VC	Value Chain
WB	World Bank
WGs	Women's Groups

Map of the PMPMD Area



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.
Map compiled by IFAD | 29-04-2016

Executive Summary

Background

1. The Project for Market and Pasture Management Development (PMPMD) in Mongolia (or referred as the original loan hereafter) was approved by IFAD Executive Board in May 2011 and became effective on 26th August 2011. The original IFAD loan with highly concessional terms amounts to SRD 7.25 million (equivalent to USD 11.5 million) and was combined with the Global Environment Facility (GEF) grants of USD 1.5 million. The Project Completion Date is 30th September 2016 and the Loan Closing Date is 31st March 2017.
2. On 25 February 2016, the government of Mongolia requested an increase in the financing of the on-going Project for Market and Pasture Management Development (PMPMD) in Mongolia. The requested additional financing (AF) amounts to US\$ 9,060,141 from IFAD's 2016-2018 PBAS allocation for Mongolia and will be provided with blend terms.
3. The AF request is combined with a 5-year extension of the PMPMD. When the AF is submitted to the September 2016 IFAD Executive Board, the PMPMD AF completion date will be 30 September 2021 and its closing date will be 31 March 2022.

PMPMD – Original loan

4. The PMPMD goal is to contribute to empower poor rural women and men to achieve higher incomes and sustainable improvements in their livelihoods. Its objective is to reduce poverty, improve livelihoods of poor herder and *Soum* and *Aimag* centre households in the project area, which is in line with the Mongolian Government's "Mongol Livestock" and "Cooperative Development" programmes.
5. The PMPMD consists of 3 components: (i) **Market Development** to enable livelihood development of poor households through small- and micro-enterprises development and through value chain development; (ii) **Pasture Management and Climate Change Adaptation** to increase the capacity and resilience of herders to cope with climate change impacts and to establish grassroots herder institutions for sustainable pasture management; and (iii) **Project Management and Policy Development**.
6. The PMPMD target area covers the following five *aimags*: Arkhangay, Bulgan, Gobi-Altai, Huvsgul, and Khentii. Within those 5 *aimags*, the Pasture Management and Climate Change Adaptation component is being implemented in 15 *soums*, and the Market Development component is being implemented in 45 *soums*. Some of these *soums* are common to both components. The project target groups include: (i) poor producers, herders, and women living in project-supported *soums*, *soum* centres and *baghs*, as well as (ii) existing emerging micro- and small enterprises and cooperatives that have backward linkages with PMPMD target groups.
7. Key lessons from the PMPMD are the following:
 - a) The current mechanism of enabling project beneficiaries to access commercial bank loans through developing micro-businesses has been effective. 88% of project beneficiaries accessed a loan compared to 66% of non-project¹. Also 62% of project beneficiaries used the loan for income generation activities while only 14% of non-project invested for income-generation activities. This success has been possible thanks to (i) dedicated credit resources provided by the project to participating commercial banks that in turn use them to finance WGs at agreed conditions; (ii) provision of technical assistance and trainings in financial management, accounting and business planning; (iii) the implementation of a guarantee mechanism as a pilot for rural development and micro-businesses portfolio guarantee.
 - b) Successful work with Women's Groups (WGs) have encouraged other stakeholders to modify or adapt their policy. The following are key achievements:
 - (i) Local authorities co-financed the rehabilitation of workplaces rented to WGs to support their production improvement;

¹ This is based on the annual outcome survey results conducted by the Project in 2015.

- (ii) WGs are now recognized entities by the Employment Generation Fund (EGF) and by commercial banks partnering the EGF – although WGs are not yet legally recognized, this already helps facilitate their access to credit; and
 - (iii) The State Credit Guarantee Fund (SCGF) has aligned its guarantee coverage to the one of the Loan Guarantee Facility of the Project (up to 80 % from previous 50% for poor loan beneficiaries)
- c) PHG organization has proved to be an effective approach to facilitate collective action for improved pastureland management, whereby group members collaborate better among themselves and with the *soum* government on pasture management issues. The key achievements are:
 - (i) PHGs in the Project areas have become an institution to facilitate co-management between the government as the owner of the pastureland and herders as the users.
 - (ii) With project support, the role of PHGs has been further expanded from a production group to a true community group. Project-supported groups not only worked together to improve fodder production but also made a group decision together through creating and managing a Revolving Fund (RF) which allows to finance small loans to members.
- d) Transformation of WGs into cooperatives has not yet been achieved on a large scale (only 4 groups out of around 450 supported by the project), indicating that groups have not yet seen the added value of becoming a cooperative. Sustainability of the model will be achieved with the participation of commercial banks in the financing of WGs or women's cooperatives from their own resources.
- e) A lack of adequate source of funds for emerging SMEs and cooperatives has hampered the implementation of project activities. The project's financial mechanism of dedicated credit lines and loan guarantee facility (LGF) has demonstrated their pertinence as instruments to enable access to finance and graduation process. To replicate a PMPMD model of supporting emerging SMEs and cooperatives to become a driver of sustainable livelihood development, it should be institutionalized to provide financial support to the emerging entities.
- f) The link between PHGs and market development could become stronger. PHGs have had limited access to credit and to training to start economic activities.

PMPMD Additional Financing (AF)

8. The Additional Financing will be used to consolidate and scale up the PMPMD successful activities and to introduce innovative approaches to the PMPMD model that would contribute to more efficiency and sustainability for project interventions, particularly in value chain development.

9. The Additional Financing will develop synergies with donors' projects operating along the same objectives and in the same commodities but in different areas. In addition, and as part of the project's exit strategy, its interventions will increase the ability, through capacity building, of the relevant government and local institutions to monitor, supervise and replicate in other *aimags* and *soums* all project activities. This would prepare them for taking over total responsibility when the project ends.

10. **Costs and Financing.** The total project cost of the PMPMD AF amounts to US\$ 11.38 million (or MNT 24.59 billion) which consists of: (i) US\$ 9.06 million (79.4% of total cost) from an additional IFAD Loan; (ii) US\$ 1.87 million (16.4%) from the Government of Mongolia – including operation costs, duties and taxes, co-financing from the Employment Generation Fund; and (iii) US\$ 0.45 million (4.2%) from financial institutions through syndicated loans. Project costs by component is the following:

Component 1: Pasture Management and Climate Change Adaptation (US\$ 4.96 million)

- 1.1 - Pasture Management (US\$ 1.09 million)
- 1.2 - Climate Change Adaptation (US\$ 3.87 million)

Component 2: Market Development (US\$ 4.22 million)

- 2.1 - Production (US\$ 1.40 million)
- 2.2 - Value Adding Activities (US\$ 1.20 million)

- 2.3 - Market Access and VCs Development (US\$ 0.61 million)
- 2.4 - Loan Guarantee Facility (US\$ 1.02 million)

Component 3: Project Management and Enabling Environment for Business Development (US\$ 2.20 million)

- 3.1 - Enabling Environment for Business Development (US\$ 0.10 million)
- 3.2 - Project Management costs (US\$ 2.10 million)

11. **Benefits and Economic Analysis.** The total number of beneficiaries is projected to be 32,500 in the selected 18 soums from 6 aimags. This comprises of (i) 17,500 beneficiaries from members of pasture herder groups and women's groups including at least 50% of women's group members who are poor²; (ii) 10,000 beneficiaries from implementation of consolidated pasture management plans and emergency plans; and (iii) 5,000 beneficiaries from value chain investment.

² Below the minimum living standard in the respective region. In 2015, the national average minimum living standard was MNT 174 200 (equivalent to approximately US\$ 86) a month.

Logical Framework – PMPMD AF

Results Hierarchy	Indicators					Means of Verification			Assumptions
	Name	Baseline	YR1	Mid-Term	End Target	Source	Frequency	Responsibility	
Goal: Empower poor rural women and men to achieve higher income and sustainable improvement in their livelihoods	Poverty ratio (% of population) at rural poverty line ³	30%	-	25%	20%	National statistics poverty	Every two years	PMU	Major shocks or crises which could weaken project effects do not occur or are sufficiently mitigated.
Development Objective: To reduce poverty and improve livelihoods of poor herder and soum- and aimag-centre households in the project area	Improvement in household income	0%	-	10%	20%	Baseline survey and project MIS measures	Annual	PMU	Major shocks or crises which could weaken project effects do not occur or are sufficiently mitigated.
Outcomes/ Components:	Number of households who became suppliers to SMEs	0	-	400	800	Baseline survey and project MIS measures	Annual	PMU	SMEs are connected to buyers through associations.
Component 1. Pasture Management and Climate Change Adaptation	Increase (%) of borrowers who previously had no access to formal financial institutions	0	10%	25%	50%	Baseline survey and project MIS measures	Annual	PMU	Businesses are matured within the project years.
Component 2. Market Development	Increase (%) of rangeland monitoring sites where improvement of pasture conditions reported	0	-	20%	40%	National Rangeland Monitoring Database (by NAMEM)	Annual	PMU	No major drought hit in the project areas
Component 3. Project Management and Enabling Environment for Business Development									
Outputs:	Number of beneficiaries involved in herder groups, women's groups or cooperatives	0	8,000	16,250	32,500	Baseline survey and project MIS measures	Annual	PMU	Herders and women are willing to participate in group activities.
Formation of PHGs and Women's Groups	Number of pasture management plans integrated into soum annual land management planning	0	-	6	15	Soum Annual Land Management Planning	Annual	PMU	PHGs participate in Bagh- and Soum-level meetings.
Development and Implementation									

³ Poverty in Mongolia is defined in terms of minimum living standards. The National Statistical Office determines the minimum levels by region. Households with an income of less than 40 percent of the minimum living standard and who are unable to provide for their basic food needs are defined as households in extreme poverty. In 2015, the national average minimum living standard was MNT 174 200 a month (equivalent to approximately US\$ 86).

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 Project for Market and Pasture Management Development (PMPMD)
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Results Hierarchy	Indicators					Means of Verification			Assumptions
	Name	Baseline	YR1	Mid-Term	End Target	Source	Frequency	Responsibility	
of Pasture Management Plans	Repayment ratio of bank and revolving fund loans	0	-	40%	100%	Baseline survey and project MIS measures	Annual	PMU	Steady business growth
Value Chain Development	Number of value chain associations (at national level) fully operational	0	-	1	3	Baseline survey and project MIS measures	Annual	PMU	Successful identification of international and domestic buyers
Business Capacity Enhanced	Amount of loan guarantee disbursed	0	-	50%	100%	Baseline survey and project MIS measures	Annual	PMU	Steady value chain development

I. Introduction

1. The government of Mongolia requested on 25 February 2016 for the additional financing (AF) of US\$ 9,060,141⁴ to the on-going Project for Market and Pasture Management Development (PMPMD) in Mongolia. The additional financing will focus on improving or developing value chains for selective livestock or agricultural products, and providing financial and non-financial incentives for improving pasture management.

2. The AF request is combined with a 5-year extension of the PMPMD. The new completion date of the original PMPMD will be 30 September 2017 after extension for one more year. The completion date of the new PMPMD AF will be 30 September 2021 and the closing date will be 31 March 2022.

3. The AF design is based on the following consideration as per IFAD additional financing guidelines:

- The proposed AF will be used to scale-up existing activities through a modular and geographical expansion of the ongoing PMPMD activities/components
- The potential for scaling-up PMPMD activities has been identified during the last supervision missions
- Activities that will be financed are consistent with and will contribute to PMPMD objectives
- Activities financed have already proved to be successful
- The proposed AF will allow incremental outreach, i.e. the same or lower cost/beneficiary ratio
- Activities financed will be in line with all existing IFAD policies
- Incremental results will be monitored as part of PMPMD, and integrated with its results
- PMPMD is not an actual or potential problem programme.

II. PMPMD Description

A. Objective

4. In May 2011, IFAD approved a loan of SRD 7.25 million (equivalent to USD 11.5 million) on highly concessional terms for the Project for Market and Pasture Management Development (PMPMD). The original project completion date is 30 September 2016 but this will be extended for one year.

5. The PMPMD goal is to empower poor rural women and men to achieve higher incomes and sustainable improvements in their livelihoods. Its objective is to reduce poverty, improve livelihoods of poor herder and *Soum* and *Aimag* centre households in the project area. This objective is in line with the Mongolian Government's "Mongol Livestock" and "Cooperative Development" programmes.

B. Components

6. The project consists of three components:

- Component 1: Market Development.** The objective of Component 1 is to promote poverty reduction and livelihood improvement through economic development around three main activities. These main activities are (i) value chain development - strengthening of selected value chains such as dairy, vegetables and berries and financial and non-financial support to their stakeholder; (ii) small enterprise development – demonstrating backward linkages⁵ with project target groups; and (iii) micro-enterprise development - supporting herders', women's or producers' groups to start or improve their income generating activities, and to pilot the implementation of a loan guarantee scheme for rural development.
- Component 2: Pasture Management and Climate Change Adaptation (CCA).** The Component 2 aims to increase the capacity and resilience of herders to cope with climate change impacts and to establish grassroots herder institutions for sustainable pasture

⁴ This is the amount of IFAD's 2016-2018 PBAS allocation for Mongolia.

⁵ Backward linkage means the inter-industry effect of every activity due to its requirements of production of inputs that must be supplied by other industries.

management. The main activities of Component 2 include: (i) assistance to herders' communities for the formation of pasture herder groups (PHGs) and in the development of pasture management plans that will be consolidated at *soum* level; (ii) financial and non-financial support to PHGs and provision of productive investments such as tractors; (iii) assistance to create Revolving Funds (RFs) from repayments of the cost of these productive investments provided by the project and assistance to manage these RFs; (iv) public investments at *bagh* and *soum* levels to enhance climate change resilience and promote pastoral mobility – the ability of herders to undertake seasonal moves as well as rotational use of summer pasture. This is key to sustainable use of rangelands and reflects the most original form of adaptation to variable weather patterns exacerbated by climate change. The public investments included hay and fodder storage at *soum* or multi-*soum* level, water harvesting structures, new and rehabilitated wells, and other support to improved fodder production such as fencing for small hayfields and establishing guarded grazing reserves.

- (c) **Component 3: Project Management and Policy Support.** Ministry of Food and Agriculture (MOFA) is responsible for the project implementation. Ministry of Finance (MOF) chairs the Project Steering Committee (PSC) which reviews and approves the Annual Work Plan and Budget (AWPB) as well as value chain business and small enterprise investment plans. Project Management Unit (PMU), headed by the Project Manager, is responsible for the execution of the project.

7. The project target groups are (i) poor producers, herders, and women living in project-supported *soums*, *soum* centres and *baghs*; and (ii) emerging micro-enterprises and cooperatives that have backward linkages with PMPMD target groups to participate in value chains. Since groups are not a recognized legal entity and in that respect they might be unable to access loans from commercial banks, the project will, in line with GoM policy, assist them to form cooperatives.

8. The project target area covers five *Aimags*: Arkhangay, Bulgan, Gobi-Altai, Huvsgul, and Khentii. Within those 5 *aimags*, 15 *soums* were selected for the implementation of the Pasture Management and Climate Change Adaptation component while 50 *soums* were selected for the Market Development component. Some of these *soums* are common to both components. See Table 1 for the number of *soum* and groups per *aimag*.

Table 1 Project Aimags and Soums

Project aimags	No. of Soums		No. of groups formed	
	Pasture management	Women's group	Pasture management	Women's group
Arkhangay	3	10	24	96
Bulgan	3	10	24	80
Gobi-Altai	3	10	24	98
Huvsgul	3	10	24	92
Khentii	3	10	24	89
Total	15	50	120	455

9. The total project cost amounts to US\$ 18.4 million, including an IFAD loan of US\$ 11.5 million; a GEF/SCCF grant of US\$ 1.5 million; government's contribution of US\$ 0.9 million; beneficiaries' contribution US\$ 0.2 million, and private sector contribution of US\$ 4.3 million.

C. Progress of PMPMD To-Date

10. The overall project progress is satisfactory⁶ according to the PMPMD supervision mission of July 2015.

⁶ The market development component (Component 1) is moderately satisfactory; the pasture management and CCA component (Component 2) is satisfactory; and the project management (Component 3) is satisfactory.

(a) Outcome⁷

- **Household income:** Out of the total project beneficiaries, 84% report their income is higher than the previous year while 21% of respondents without project support (hereafter referred as 'non-project') state income is improved. 84% of beneficiaries said their income is higher than the previous year compared to 21% of non-project said income is improved. 51% of beneficiaries reported on the increase of sales of livestock production to 18% of non-project beneficiaries. More importantly 76% of beneficiaries have the secondary source of income (thanks to salaries and handicrafts) compared to 24% of non-project.
- **Market access:** 33% of beneficiaries said market access is easier after joining cooperatives. Beneficiaries also explained that forming a herder group brought a good impact for labor sharing within member households, and thus, sales of their livestock products and raw materials is managed better.
- **Access to financial institutions:** 88% of project beneficiaries accessed a loan compared to 66% of non-project. The amount of loan for beneficiaries is 3,974,044 MNT compared to 2,664,179 MNT for non-project beneficiaries. Source of credit is more diversified for project beneficiaries. Notably, 62% of project beneficiaries used the loan for income generation activities while 14% of non-project invested for income-generation activities (See table 2). Project beneficiaries said the access to loan was improved while non-project said declined. On saving, 81% of the project reported the household saving has increased while 1% of non-project said the saving has increased.

Table 2 Use of loans

No	Use of loan	2015			
		Project		Non-project	
		Number	Percentage	Number	Percentage
1	Consumption	29	17%	23	35%
2	Income generation	109	62%	16	24%
3	Other investments	18	10%	16	24%
4	Education	13	7%	9	14%
5	Health	6	3%	2	3%

- **Pasture management and climate change adaptation:** The beneficiaries state that the project support is useful for increase their livestock production and a herder of Ogiinuur soum, Arkhangai province claimed that due to the building of livestock shelter, livestock mortality of his family has been decreased by 70%. 88% of the beneficiaries who responded to the outcome survey said the project helped decrease livestock disease/mortality rate. 74% of project herders followed the pasture management plan while 43% of non-project herders did. Of the beneficiaries, 79% (95% in last year) said they moved to their winter and spring camps on time, while 55% (86% in last year) of non-beneficiaries moved on agreed time. Rotational grazing is one of the most important things in the pasture management plan, and timing to release the seasonal pasture and reserved area is agreed by herding households and the local government. It is good reason to say that responsibility of project beneficiaries to implement pasture management plan has been improved. However, the positive changes were also declined for both categories in 2015 compare to the last year, perhaps due to the bad summer condition in 2015 in project areas.

⁷ Outcome of PMPMD to-date is based on a 2015 outcome survey result and a comparison to the baseline data. The next RIMS survey is planned to be conducted in July 2016.

- **Production:** In 2015, 71 % of beneficiary households reported higher production than in 2014, while only 11% of non-beneficiary households reported a production increase in that time. Among non-beneficiaries, 66 % reported no growth in production between 2014- 5, and 22 % of them reported even a decrease of production. By contrast, only 28.5 of beneficiaries reported no growth, and none of them experienced a decrease in production between 2014-15. In 2014, beneficiary households attributed increased production to project support; in 2015, 100 % of respondents among beneficiaries believed that project support was the cause for increased pastoral production in their household.

(b) Output

Component 1. Market Development – 458 women’s groups consisting of 2,850 women and 979 men in 45 *soums* of the 5 project *aimags* (127% of the revised target) are formed. All groups are women-led. To support the value chain development, the project supported the following activities: milk hygiene training for farmers and herders in UB and Bulgan aimag; seabuckthorn plantation conducted and maintenance technology disseminated in Arhangay, Bulgan, Hentii aimags; vegetable plantation and maintenance in UB and Selenge aimag, and assistance to develop seabuckthorn juice standards. Trainings were conducted by the professional associations of each value chain. About 618 people were trained during the different meetings of whom 332 women. It can be considered that 50% of these trainees are from the 5 project aimags. 35 out of 75 entities (of cooperatives and SMEs) have been provided with capacity building/training on use of computer and business plan development. The other supports include experience sharing exposure visit for 8 SMEs and Cooperatives; on-line financial literacy and financial management training for 13 SMEs and Cooperatives, compliance with international standards training (HACCP) for 10 SMEs and Cooperatives. Activities developed by these entities cover: milk processing wool cleaning, tea processing, vegetable processing, winter greenhouses construction, berries plantation, and meat and milk farming activities. In terms of Loan Guarantee Fund portfolio, Loan guarantee agreements/contracts have been signed with 8 commercial banks. As at May 30, 2015 the outstanding guarantee portfolio amounts to MNT 1.12 billion representing 79% of the LGF current resources (MNT 1.4 billion), more than the 75% required for the transfer of additional resources.

Component 2. Pasture Management and Climate Change Adaptation - 120 PHGs with 2,800 household members have been established and developed their pasture management plans. PHGs revolving funds have been capitalized by the repayment of 80% of investments above MNT 8 million (96% achievement as of June 2015). The revolving funds have enabled low interest loans to herders and as at June 2015, 610 households have received loans for an amount MNT 0.34 billion with a 100% repayment rate. Investments in 15 project soums to support implementation of PHGs and soum wide pasture management plans amount to date to MNT 1,77 billion representing an average investment per soum of MNT 0.12 million. Reportedly, with double counting, 7,406 households, 24,683 individuals and 1,903,312 head of livestock have cumulatively benefited from project investments delivered for the period ending in 2014. Preparedness for winter and for extreme events has improved through increased hay preparation, fodder production and repair of hay and fodder storage facilities that provide benefits far beyond the project area. Five hay and fodder storage shelters have been constructed and two have been repaired including the large facility in Tsagaan Uul Soum that services many *soums* in the region (delivery rate by mid-2015 is 55 % and 100 % respectively). Early warning on extreme events and changing weather conditions to herders has been improved through the introduction of “mobigator” capability through which the *soum* meteorological officer can send sms/messages to registered herders’ mobile phone numbers. Other completed investments include 35 newly constructed wells and 2 rehabilitated wells (delivery rate mid 2015 is 76 % and 100 % respectively); 60 small tractors (second phase of a successful activity implemented in 2013 under the same terms and conditions); construction of five water harvesting points and 12 improved/model winter shelters; technical equipment for

all *soum* land officers; as well as 30 solar panels (100 %); 57 sprinkler systems (47.5 %) (redistributed to vegetable grower women's groups as agreed); furnishing of 3 information centres, and construction of 500 bird-of-prey stands to support rodent control. Also, selected springs, as recommended by the Aimag Environmental Department, have been fenced and improved water flow is reported by local users.

- (c) **Disbursement:** As of December 2015, the overall disbursement rate is 57.5% (56.3% and 66.9% for IFAD loan and GEF grant respectively). It is projected to be disbursed 100% by the end of one-year extension period. Early delay occurred due to delays in the selection of service providers (Technical Assistance) although the project's main implementation strategy was to outsource implementation to experienced and reputable service providers. Despite this slow start, the project has reached its momentum in 2015 and accelerating its implementation.
- (d) **Projected balance by the original completion date:** During the financial year 2016, the project budget is US\$ 3.39 million (US\$ 3.05 million for the IFAD loan and US\$ 0.34 million for the GEF grant). At the end of December 2016, the balance of PMPMD is projected to be US\$ 2 million (US\$ 1.84 million for IFAD loan and US\$ 0.16 million for GEF grant -disbursement at 83.6% and 89.3% respectively).

D. Lessons Learned and Way Forward

11. **Market Development.** The project aims at supporting micro-businesses (though women's groups - WGs), emerging small enterprises and cooperatives and selected value chains (as per MoFA recommendations: berries, vegetables and dairy). It also aims at implementing adequate financial instruments to ensure access to affordable financing for project beneficiaries. The progress in the implementation of these activities has been uneven.

12. Potential for scaling-up: Project-supported WGs have been able to access a commercial bank loans to further develop their micro-businesses thanks to: (a) dedicated credit resources provided by the project to participating commercial banks that in turn use them to finance WGs at affordable conditions (while maintaining their profitability margin and coverage of operating costs); (b) in-depth technical assistance and training provided to these WGs to improve their skills (technical training related to their activities, management, financial, accounting, business planning trainings and assistance to develop sound and bankable business plans), and (c) the implementation of a guarantee mechanism as a pilot for rural development and micro-businesses portfolio guarantee. Although the impact on project-supported WGs is unevenly distributed due to the different timing for them to access training and finance, preliminary results are promising and the model developed under PMPMD is pertinent and can be scaled-up. Repayment rate is close to 100% and a significant increase in income is reported by all groups' members.

13. Successful achievements with WGs have encouraged other stakeholders to modify or adapt their policy as following:

- Local authorities have jointly with the project financed the rehabilitation of workplaces rented to WGs as a way to improved their production
- WGs are now recognized entities, although not legally recognized, by the Employment Generation Fund (EGF) and by commercial banks partnering the EGF, thus facilitating their access to credit
- The State Credit Guarantee Fund (SCGF) has aligned its guarantee coverage on the guarantee coverage extended by the project Loan Guarantee Facility (up to 80 % from previously 50% for poor loan beneficiaries)

14. Further improvement and next steps: Transformation of WGs into cooperatives has not yet been achieved on a large scale (only 4 groups out of around 450 supported by the project), indicating that groups have not yet seen the added value of becoming a cooperative. Sustainability of the model will be achieved with the participation of commercial banks in the financing of WGs or women's cooperatives from their own resources. In that respect, the project will aim at developing a graduation process where WGs and PHGs are merged into cooperatives and then supported to a level whereby they can become normal clients for commercial banks. Resources from commercial banks will

gradually substitute loans from the project while repayments from project-supported WGs/PHGs and cooperatives will constitute a revolving fund to further financed new entrants.

15. Development of emerging SMEs and cooperatives as well as strengthening and developing agricultural value chains are still at a nascent stage. The project was lack of a systematic approach linking nonfinancial and financial support to WGs' micro-businesses, emerging small enterprises and cooperatives with value chain development/strengthening. Nevertheless, the business plans, submitted by project-supported entities to commercial banks, have had impact on poor households by including them in a supply chain at more equitable conditions. Despite the delay in the early implementation phase, strengthening SMEs and cooperatives are now fully operational.

16. A lack of adequate source of funds for emerging SMEs and cooperatives has hampered the implementation of project activities. For example, the SME development funds, provided by other projects, target mature SMEs with at least 3 years of operations and sound profitability, not emerging ones. To replicate a PMPMD model of supporting emerging SMEs and cooperatives to become a driver of sustainable livelihood development, it should be institutionalized to provide financial support to the emerging entities. In this regards, the project's financial mechanism of dedicated credit lines and loan guarantee facility (LGF) has demonstrated their pertinence as instruments to enable access to finance and graduation process. While the current State Credit Guarantee Fund (SCGF) targets matured SMEs with a proven record of successful operations, the model of portfolio and individual guarantees for micro and small businesses in rural areas developed by the project LGF shall be further institutionalized before the LGF is merged with the SCGF at project completion.

17. **Pasture Management and Climate Change Adaptation.** The project's approach to pasture management is through institutionalizing "Pasture Herder Groups (PHGs)". PHG is neither a customary nor a formal organization that is legally recognized under current law. Maturity of project-supported Pasture Herder Groups (PHGs), in terms of organizational development, market access, pasture impacts and climate change adaptation, is quite variable depending on the time of establishment and other factors.

18. Potential for scaling-up: Overall, PHG organization has proved to be an effective approach to facilitate collective action for improved pastureland management, whereby group members collaborate better among themselves and with the *soum* government on pasture management issues. First, PHGs tend to be better prepared to propose actions and request support for pasture and water management beneficial for their member households in *bag* meetings (as opposed to non-member households) the conclusions and proposals of which inform the *soum* level pastureland plan. Second, PHGs act as institutions through which the *soum* pasture land management plan can be implemented more effectively. *Bag* governor and *soum* level officers work more easily and efficiently with herder households that are organized in groups and have a leader. PHGs have become an institution to facilitate co-management between the government as the owner of the pastureland and herders as the users.

19. PHGs members improve pasture and risk management and climate change through group/peer oversight and pressure to adhere to rules as well as through collective action such as hay making, well digging/rehabilitation, building winter shelters, and dividing tasks in herding of large and small livestock including *otor*. These activities expand on customary practices of *Khot Ail* members. Organization in groups also promotes several mechanisms from which poor households benefit. Poorer households are able to undertake seasonal moves, access equipment (such as for hay making), engage in paid labor, engage in herding for benefits such as dairy or young animals, social inclusion, access to information, access to small credits, and others. In a traditional herder household, gender roles tend to be distinctive; men are more concerned with pasture management, and women play a key role in social organization of the group and exploration of economic opportunities, both in the livestock and non-livestock sector. Joint activities as group members suggest that women's workloads are reduced and financial incentives have increased, for example through increased opportunities for dairy processing.

20. With project support, the role of groups has been further expanded from a production group to a true community group. For example, project-supported groups not only worked together to improve fodder production but also made a group decision together through creating and managing a Revolving Fund (RF) which allows to finance small loans to members. Although financial management skills still need to be further improved and the RF ownership upon project completion needs to be clarified along with a procedure for fund management, RFs have already successfully demonstrated

that they constitute an important means to strengthen collaboration and trust among PHGs members. In addition, the new procedures by Administration for Land Affairs, Geodesy and Cartography (ALAGAC) on natural resources allocation also relies on groups to define access to resources and arrange agreements among resource users *soum*-wide.

21. Further improvement and next steps: A weakness identified during PMPMD supervision missions was the absence of an effective link between PHGs and market development. PHGs have had limited access to credit and to training to start economic activities which would have provided them with means to achieve financial sustainability. Other weaknesses/barriers in the policy and regulatory barriers include the absence of a pasture law which could incentivize sustainable use of pastureland through a user fee system, and the lack of legal status of PHGs which results in the inability to access loans and questions groups' sustainability both operational and financial.

22. While the project has undertaken extensive monitoring of outcomes, it remains a challenge to directly measure the impacts of project support through investments and through the PHG approach in pasture condition changes. Although a photo-monitoring system was established, the pasture management component did not establish an M&E system that allowed linking changes in rangeland health in the group managed areas to management practices, Though this will remain a challenge in an environment, where pasture condition is primarily governed by external factors, namely rainfall, future M&E efforts can be improved. A nationwide network of reference sites has been established now, and relevant government agencies have aligned their M&E methods (See Working Paper on Pasture Management and Climate Change and the SECAP Review for further details).

23. . PMPMD provided a training of the WB-project initiated index-based insurance scheme in PMPMD target areas. The World Bank has conducted a final evaluation of the indexed based livestock insurance scheme project. Lessons learnt include APR will follow up with the World Bank to receive the evaluation report and capture these under the lessons learned section.

E. One-year extension

24. With a one-year (no cost) extension, the new completion date of PMPMD will be September 2017 and the new closing date will be March 2018. The projected budget for FY 2017 is US\$ 2 million (outstanding balance of PMPMD at the end of December 2016).

25. The PMPMD exit strategy aims at creating the enabling environment for Pasture Herders Groups (PHGs) and Women's Groups (WGs) to access markets. It also aims at paving the way to some activities to be implemented during the AF period, especially with regards to value chains analysis and financial and impact assessment of activities implemented by WGs.

26. Description of activities

(a) Component 1 Market Development:

- Value chain: Undertake analysis for selected commodities, which are included in the PMPMD AF, focusing on: (a) potential to federate value chain stakeholders into production groups, cooperatives, associations to achieve economies of scales and access markets; (b) leveraging potential to address gaps and opportunities along existing value chains that can be cost-effectively addressed and where possible, to build on existing projects; (c) green growth economic orientation through market driven activities linking to resilient pasture management; (d) need for building local and national capacity for market led development; (e) menu-driven approach⁸ to assess economic viability for the existing women's groups activities to inform options for future beneficiaries, and (f) economic and financial analysis to inform selection of value chains, and targeting of value chain activities, pasture management investments and potential number of beneficiaries covered. Also undertake a comprehensive financial and impact assessment on all activities performed by herders and women's groups. Each activity assessed will be summarized in a case study, financial projections, and market analysis;
- SMEs and Cooperatives: Provide a package of financial and non-financial support to 10 emerging micro-enterprises and cooperatives to be financed by the project and guaranteed by LGF. Their business plans would have to include poor households as suppliers and demonstrate significant impact on their livelihoods. Through a Subsidiary

⁸ This will provide a list of options for beneficiaries to select activities and investments

Loan Agreement signed between participating commercial banks and MOF, project resources will be transferred to participating commercial banks for them to use these resources to on-lend to emerging micro-enterprises and cooperatives at an affordable interest rate (of around 10% per year). Through this mechanism, the project assists emerging micro-enterprises and cooperatives to graduate up to a level where they can access bank loans and resources from other projects at a market rate. The project will continue to work with the banks it has already identified.

To finance women's groups, the project has implemented credit lines used by two commercial banks (State Bank and Kapital Bank) through a Subsidiary Loan Agreement (SLA) with MoF. Repayments from women's groups constituted a RF kept at Banks' level for further on-lending to project beneficiaries. SLAs closing date is June 2018. Field visits and discussions with women's groups have evidenced their need for additional loans to further sustain their activities. Their level of profit still prevents them to access bank loans at market rate. SLAs closing date will be extended to completion date of PMPMD AF (September 2021) upon no objection from MOF. RF proceeds are used for the provision of syndicated loans by selected commercial banks (second loan partly financed from RF resources and partly by banks' own resources/other donors' resources while further loans will be financed from banks' own resources/other donors' resources).

- LGF: LGF capitalization will be reduced from US\$ 2.1 million to US\$ 1.7 million. This will enable to reallocate US\$ 0.40 million (MNT 774 million) for a loan to emerging micro-enterprises and cooperatives and financing investment for PHGs. Revolving Funds at the level of participating commercial banks will be used to further extend loans to WGs and to PHGs in order to minimize the reallocation from the LGF.
- PHGs and WGs to federate cooperatives: Cooperatives could be formed either by a mix of PHGs and WGs when activities undertaken are complementary (livestock and dairy or fibre processing) or by WGs/PHGs only (textile, berries or vegetable processing). Activities include: i) provide adequate training and technical assistance on business and cooperative management through a service provider⁹ which will facilitate and support transformation of groups into cooperatives on a voluntary basis; ii) finance production-related investments for cooperatives such as collection points, storage facilities, processing and packaging units. The investment decision will be based on the business plan developed by project-supported cooperatives and a review of business profitability, viability and nutritive benefits. Smaller investments such as processing units or packaging units will be financed through PMPMD credit lines; Storage facilities and collection points will be financed based on economic and financial analysis through the pre-financing/RF methodology developed by PMPMD for tractors. Repayments will constitute a Revolving Fund (RF) that will be used by the cooperative as resources to finance its working capital.

(b) Component 2 Pasture Management and Climate Change Adaptation:

- Support to draft guidelines for the use of Revolving Funds (RFs) of PHGs: The ownership of the RFs and their resources should be given to PHGs. Technical assistance, with applying a participatory planning approach with PHGs will prepare a procedure for the fund's management and use. This will enable PHGs to make a decision on the use of RFs to finance working capital for their activities or micro-loans to members. The use of these RFs will be left to PHGs but could include: micro-lending to members, loan for group's working capital, or guarantee against a bank loan to finance group's investments. RF management training for PHGs and relevant Soum officers will be provided as well. Once the draft guidelines are ready, the PMU Pasture Management Specialist in close consultation with MoFA and PHGs will fine tune the guidelines for the use of PHGs RFs and will submit the final draft to IFAD for no-objection. The

⁹ The NGO supporting WGs has already introduce a specific training module on cooperative formation and management

cornerstone of this draft is the recognition by the authorities of the RFs' ownership by PHGs.

- Provide technical assistance to develop soum strategies for pasture management and market development in collaboration with similar efforts of other projects in the same soums. Technical assistance will also include training related to the Administration for Land Affairs, Geodesy and Cartography process (ALAGAC), focusing on soum level definition and allocation of natural resource use rights to customary users and related agreements, and contracts among users, among groups and between groups and soum government. This activity will be supported by a team of 4 technical experts (breeding, planning, pasture management, and market development). These experts will assist local authorities to develop a comprehensive development plan with interactions between pasture management, climate change adaptation and market development.
- Finance public investments and seek collaboration with other projects: These public investments would include: (a) hay and fodder storage facilities; (b) water points - either water/snow melt water harvesting points or drilling/rehabilitation of wells; (c) a budget line will be established to support improvement of local breeds; (d) additional public investments based on local authorities' demand, and (e) Risk Fund which could be used to partially pay the first premium of insurance by project-supported PHGs.

(c) Component 3. Project Management and Policy Assistance:

- Improve the M&E system: A short-term M&E Advisor will be recruited to adopt better impact indicators with particular emphasis on monitoring improvements in pasture condition as result of groups/cooperatives activities and project support. The M&E Advisor will work with the PMU M&E Specialist and in close consultation with other donors' projects, MoFA, local authorities as well as herders groups.

(d) Changes to Implementation arrangement: MOFA in its capacity as the Lead Project Agency (LPA) will continue to have the overall oversight responsibility for the PMPMD AF implementation. The existing Project Steering Committee (PSC), chaired by MOF, will continue to provide overall policy and management directions for PMPMD AF implementation.

- Creation of PMU Director and LGF Manager Positions: In accordance with the Mongolian Foreign Development Assistance law, a position of the Project Director will be created and appointed at MOFA. In addition to the current PMU Manager position, the PMU LGF Manager position will be added. This is to ensure the implementation of LGF under the responsibility of MOF. The PMPMD AF PMU manager will continue to be responsible for planning and budgeting, contracting of service providers, supervision of contracts, financial management and Monitoring and Evaluation of PMPMD AF PMU operations, except LGF. The PMPMD AF LGF Manager will be responsible for planning and budgeting, service providers, supervision of contracts, financial management and Monitoring and Evaluation of LGF operations. LGF will elaborate its own AWP&B. IFAD Loan resources earmarked for the LGF will be transferred to MOF specific bank accounts opened for the LGF (operating expenses, credit lines and LGF capitalization). LGF operating expenses will be financed by: (i) interests earned on LGF resources deposited on interest bearing accounts and fees collected from commercial banks for guarantees, and (ii) IFAD loan resources if needed.
- PSC membership will be broadened to invite representatives from other International Financial Institutions, relevant UN agencies and non-government organizations, such as World Bank (WB), Asian Development Bank (ADB) and Food and Agriculture Organization (FAO), as observers.

III. PMPMD Additional Financing (PMPMD AF) Context

27. Mongolia's territory covers an area of 1,564,100 sq. km. it borders in the north to Russia and in the east, south and west to China. The country is divided into six basic natural zones, differing in climate, landscape, soil, flora and fauna. The climate is continental, with long, cold and dry winters and mild and relatively wet summers. Annual precipitation ranges from 600 mm in the Khentii, Altai,

and Huvsgul mountains to less than 100 mm in the Gobi. Snow melt provides an important part of water resources. The total population of Mongolia is estimated at 2.91 million persons (2014), leading to an average population density of 1.86 persons per sq.km. Average population growth is about 1.5% per year. Nearly 60% of the population lives in urban centres (Ulaanbaatar, Erdenet and Darkhan) and about 29% lives in rural areas. Migration to urban centres remains strong, mainly for employment or education. The rural population is engaged in extensive herding, crop farming and in micro- and small scale enterprises and services in *soum* and *aimag* centres.

28. In recent years, the country's growth has known ups and downs as a result of difficulties between the GoM and mining industries. The current GDP per inhabitant amounted in 2014 to US\$ 4,056 (falling from US\$ 4,325 in 2012 and 2013). The GDP growth has been of 7.8% in 2014 (while averaging 12% during the previous 3 years). In 2014, the agriculture sector which employs nearly 30% of the labor force, benefitted from a GDP growth of 14.4% (average 17% over the past three years), the industry sector benefitted from a GDP growth of 16.1% (average 15% over the past three years) and the services sector benefitted from a GDP growth of 4.8% (average 6.5% over the past three years). Unemployment affects around 5% of the population and 10% of youth. Mongolia ranks among the High Human Development group (0.727 - 90th rank over 188 countries) while in 2007 Mongolia was ranked among the Average Human Development group (ranked 115th). According to the fifth National Millennium Development Goal (MDG) Report of 2013, among 24 measurable Mongolia-specific MDG targets, Mongolia is expected to achieve 71% of them by 2015. The most challenging goals remain related to income poverty, tuberculosis, air pollution in Ulaanbaatar city, areas covered by forest, the enhancement of gender equality at the political decision-making level, the unemployment rate for youth, access to safe drinking water and sanitation, and the global partnership for development.

29. Agriculture sector is the backbone of the Mongolian economy and considered a key for diversifying the economy, which relies too heavily on the mining sector. In 2013, Mongolian agricultural primary products accounted for 20.1% and processed products for about 11.1% of Mongolia's gross domestic product. They are also the second largest export products after mineral products, accounting for 8.2% of total exports by value in 2013. However, the agriculture sector is mostly concentrated on primary production and forgoing significant value addition in agriculture because of limited processing capacity. The bottleneck is lack of long-term financing, which has significantly hindered Mongolian agro-enterprises from making long-term investments to improve their productivity. As a result, Mongolia exports a significant portion of its agricultural products (e.g., wool, cashmere, and animal skins) after primary processing while it imports a substantial volume of processed or final products (e.g., dairy products). It is crucial for Mongolia to capitalize on the rich yet untapped resources of the agriculture sector, which employed 30% of the labor force in 2013. Development of the agro-processing industry will have a substantial impact on employment, in itself and through its backward linkages, in rural areas, where the poor comprised 33.3% of the population in 2012, and consequently contribute to sustainable and equitable development of the nation.

30. The Millennium Development Goals-based Comprehensive National Development Strategy for Mongolia emphasizes development of export-oriented manufacturing and services led by the private sector as one of its six priorities. In line with this priority, the government is exerting effort to enhance the competitiveness of the agriculture sector by strengthening links between producers and agro-processors, and promoting export of value-added products. One example is assistance to the wool and cashmere subsector through a loan and subsidy program during 2011-2016 for wool and cashmere processors and herders who supply raw materials to those processors. As the assistance was provided in a piecemeal manner to each type of value chain player separately, even though its scale was sizable its impact remained limited.

IV. PMPMD AF Description

31. The PMPMD AF will be implemented for 4 years from October 2017 to September 2021. The total PMPMD AF investment is estimated at US\$ 11.38 million (around MNT 24.59 billion) including IFAD loan of US\$ 9,060,141.

A. Goal and Objectives

32. The goal of the PMPMD AF is to contribute to empower poor rural women and men to achieve higher incomes and sustainable improvements in their livelihoods. Its objective is to reduce poverty,

improve livelihoods of poor herders and *soum* and *aimag* centre households in the project area, which is in line with the Mongolian Government's overall poverty reduction strategy.

33. To address this objective, the PMPMD AF focuses on strengthening the linkage between market development and sustainable pasture management. This linkage will be mainly established by i) creating a market system that provides incentives to herder groups which follow sustainable pasture management practices as well as women's groups and emerging SMEs, and ii) enhancing market opportunities through removing barriers to strengthen or establish value chains.

B. Target areas and beneficiaries

34. **Project area:** PMPMD AF target areas are 6 (out of 21) *aimags*. These *aimags* are Arkhangay, Dornod, Dundgobi, Hentii, Sukhbaatar and Uvurkhangay including two *aimags* (Arkhangay and Hentii) from PMPMD. In each of these *aimags*, three *soums* (which were not supported under PMPMD) will be selected as target areas at a total of 18 *soums* (out of 330 nationwide). The selection of *aimags* and *soums* is based on the following criteria: (i) poverty level; (ii) proportion of rural population, poor households, herder households, and livestock; (iii) no geographical overlap with similar activities of other projects/programmes; (iv) other scaling-up potential and demand for value chain, (v) market access, and (vi) geographical proximity to form a supply cluster and manage the project.

35. **Target beneficiaries.** PMPMD AF target beneficiaries will include: (i) PHGs/cooperatives, WGs/cooperatives, mixed PHGs and WGs cooperatives developing economic activities, and (ii) emerging small enterprises and cooperatives with growth and market potential as well as backward linkages with PHGs/Cooperatives and WGs/Cooperatives as well as poor households. Groups and cooperatives formed under PMPMD in its project area will also benefit from activities implemented under PMPMD AF especially with regards to development and strengthening of selected commodities.

36. The total number of direct beneficiaries can be estimated to around 17,500 (members of pasture herders groups and women's groups). Considering herders in *soums* where the project will be implemented who will also benefit from (i) pasture management plans consolidated at *soum* level, and (b) investments at *soum* level for emergencies, an additional 10,000 beneficiaries can be estimated. Finally, stakeholders of project-supported value chains will also benefit from project investments and support (estimated number of beneficiaries: 5,000). In total the project could benefit to around 32,500 people in the selected 6 *aimags* and 18 *soums*.

37. Project support provided to target beneficiaries will aim at graduating groups, cooperatives and emerging small businesses up to a level whereby they can become regular clients from financial institutions and access working capital and investment loans at market rate. Additionality will be provided by the project LGF which will continue to enable newly formed groups, cooperatives and emerging small businesses to access loan resources at favourable and affordable terms and conditions enabling them to reach sustainability and profitability.

C. Components

38. The project will consist of two interrelated investment components: (i) Pasture Management and Climate Change Adaptation, and (ii) Market Development and one management component (Project Management and Enabling Environment for Business Development).

39. **Component 1 - Pasture Management and Climate Change Adaptation.** The objective of the Pasture Management and Climate Change Adaptation Component is to promote sustainable management and resilience of the natural resource base of herders. Key approaches are i) capacity building and extension, ii) investment and iii) creating enabling conditions to link herders to markets to improve their livelihood. PMPMD AF support will build on lessons learnt and will take a more strategic approach.

40. Climate change adaptation measures again feature prominently in the design of PMPMD-AF. They support the official adaptation strategies in Mongolia's livestock sector, as outlined in Mongolia's Second National Communication to the United Nations Framework Convention on Climate Change, and as reflected in the intended nationally determined contributions (INDC) for adaptation. Productivity and long-term resilience of Mongolia's pastoral system were identified as dependent upon the condition of the natural resource base, primarily grassland, livestock "biocapacity" (i.e., resilience) to cope with environmental stresses, and on human capacity to manage livestock and pasturelands.

Decreased weight and productivity were identified as the main impacts of climate change in the livestock sector.

41. The communication stated that adaptation should focus on (i) conserving the natural resources on which livestock husbandry depends; (ii) strengthening the capacity of livestock to cope with environmental and climate stress; (iii) developing the capacity of herders and expanding livelihood opportunities for rural communities; (iv) increasing food security; and (v) enhancing monitoring, interpreting, and forecasting capacity.

42. With the proposed capacity building and joint planning activities for local government and herders, the project investments, IFAD support under PMPMD AF is well targeted to enhance climate change adaptation. In particular the following project interventions are contributing to this: Trainings and on-the-job capacity development, and stakeholder cooperation for local strategic planning; investments for risk; enabling pastoral mobility through group formation; strengthening impact monitoring; protecting water resources; breed improvement towards adapted local breeds; fodder production based on resilient species/perennials; improving animal health. Further details on government priorities in climate change adaptation measures in animal husbandry and grasslands ecosystems are provided in the SECAP Review Note (attached).

43. Support the development of *soum* strategies for pasture management and market development (In collaboration with similar efforts of other projects in the same *soums* if applicable.) :

- Following a central inception workshop, and an introductory workshop with project *Soum* governors and land officers of all project *Soums*, project activities on *Soum* level will commence with local inception meetings to set up local implementation structure of *Soum* facilitator and working group.
- Then, development of the *Soum* strategy for pasture management and market development will commence; experts in pasture, livestock, water and planning/policy will work with the *Soum* officers team and provide on-the job training. This process will be coordinated with the ALAGAC procedure for defining resources, registering user rights and promoting agreements among users, among user groups and between groups and *Soum* governments. Technical assistance supporting strategy development is financed by project support.
- To further develop local capacity to implement the strategy, a comprehensive training package, will be delivered, of which technical training in pasture, livestock and risk management, livestock health and breed improvement is one component.
- The other components of the training package are modules in governance, provided by SLP 3, and the content of ALAGAC training/facilitation in resource mapping, and use right allocation. ALAGAC has developed sample agreements between user groups, and sample contracts between groups and *Soum* government which would be available as training materials. A comprehensive set of maps and information on different resources would be provided by ALAGAC and *Soum* officers trained in use of the materials for resource management.
- For the inception of the project, *Soum* strategy development and implementation, the PMU has to play a crucial role to ensure coordination and synergies between agencies, between local line officers of agencies and different projects.

➤ Formation and strengthening of PHGs: The *Soum* level process on resource assessment and allocation, through a thorough participatory process involving herder households, will establish the basis for group formation, upon which project support, through PMU and *Soum* facilitator, will build by forming and strengthening groups. For this process, PMPMD AF adopts the methodology and procedures developed during PMPMD:

- Development of a strategy for pasture management¹⁰ (in contribution to the *Soum* Annual Land Management Planning) and market development (similar as the one developed for PMPMD area under the one-year extension) with *soum* governments and other stakeholders

¹⁰ Also including dissemination of weather forecast information and pasture condition. The ALAGAC facilitated, *soum* level definition and allocation of natural resource use rights to customary users, and related agreements and contracts among users, among groups and between groups and *soum* government will be an integral part of developing that strategy.

- Provision of capacity building training to PHGs to implement the strategy including training in participatory M&E and technical trainings on pasture management and risk management. These are delivered to *soum* government officers and herders by service provider/NGO contracted by PMU
 - Scaling-up of successful practices in herders' organization and their collaborative management of pastures with *soum* government
- PHG-level investment. Investment will be provided to herders as incentive to organize in groups, and repayments will establish PHGs RF (with 20% grant from the project). Opportunities for top-up of PHGs RF resources based on measurable improvements in pasture and livestock condition will incentivize best practices of herders in pasture management. During PMPMD implementation, tractors proved to be the investment most valued by beneficiaries. They provided several benefits including: a) enabled herders to increase efficiency of hay harvest, b) enable/improve growing of fodder and/or vegetables, the latter being of particular significance to poorer herder households as income diversification. Moreover, the mechanism of providing tractors as initial investment to establish group revolving funds, made it possible for lower income households to access such equipment that they would otherwise have no access to. Given the positive response and benefits recorded during PMPMD, it is anticipated that tractors are again the most sought after investment in this cost range by herders; however, other options should remain open for consideration to establish revolving funds and provide technical support to promote sustainable pasture management and climate change adaptation.
- Soum-level investment for Climate Change Adaptation. The project supports the implementation of Soum Annual Land Management Planning and other soum development plans. In particular, establishing a clear linkage to the utilization of the Soum Development Fund, the projects supports the following scope of investment:
- Improved water sources (new wells, well rehabilitation, water harvesting, spring protection)
 - Fodder and hay storage facilities/schemes for emergency reserve (possibly also at *aimag* level) and multi-functional tractors with hay baling implements (public-owned investments should be made available to all PHGs and cooperatives against fee payment)
 - Establishment of information centres for herders
 - Creation of Risk Fund (first established during the PMPMD extension period) to provide support for risk management and disaster response to herders including paying the first premium of insurance in close collaboration with the Livestock Insurance Programme.
- Monitoring and Evaluation of resilience of pasture land: Although PMPMD followed the M&E practice designed by the project and advised by the supervision missions (including the photo monitoring method¹¹ introduced by the contracted NGO for pasture management and the results of the Annual Outcome Survey), M&E is to be further improved in close collaboration with relevant line ministries, agencies and projects is required for the PMPMD AF.
- Rangeland Health Assessment: Review the M&E indicators¹² agreed at a national level and establish a baseline and targets, at PHGs, *bagh* and *soum* levels
 - Contribution to nation-wide rangeland health monitoring data feed to PHGs: Currently the data workflow is established for the National Agency for Meteorology and Environmental Monitoring (NAMEM), an institute responsible for nationwide rangeland monitoring covering 1450 monitoring plots representing all *baghs* in Mongolia, to collect primary data and collect this at the National Rangeland Monitoring Database but most herder groups are not informed of such data. The project will establish a system at the *bagh*, *soum* and *aimag* level to feed the assessed data of rangeland status and its outlook back to PHGs in preparation soum development strategies. To this end, on PHG level, photo-monitoring will still be part of monitoring and play a key role; it is an integral part of monitoring methodology practiced by ALAGAC and the Green Gold program. In addition, an effort will be made to establish monitoring sites in areas under PHG management.

¹¹ Photo point monitoring is one of methods to monitor rangeland health against a set of indicators. Other methods include line-point intercept, gap intercept and air dry biomass calculation.

¹² A unified set of core indicators for rangeland monitoring is agreed by relevant institutions, led by NAMEM and the Green Gold Project of SDC. Core indicators include foliar canopy cover, core species composition, basic gaps of perennial plants, plant height, and biomass.

- Development/up-grade of participatory M&E through including social, economic and environmental indicators on group level
- Provision of training for herders, PHGs' leaders and relevant officers in agreed monitoring methods

44. *Implementation.* A Project Start-Up Workshop with participants from relevant ministries and agencies, selected other donor projects, *aimag* and *soum* governments and representatives from PHGs will develop a common understanding of the rationale, design and implementation arrangements of PMPMD AF. The workshop will share the key lessons and challenges of PMPMD. While a framework of activities and costs is provided to allow for project and budget planning, the proposed following key steps will seek to promote local stakeholder collaboration for (i) jointly assessing capacity development and investment needs; (ii) defining baseline of resource condition indicators and targets; (iii) developing strategies and detailed activities to implement them, and (iv) jointly reviewing implementation.

45. Projects of particular importance for synergies include a) the World Bank supported "Sustainable Livelihoods Project, Phase 3" (SLP 3) that plans to deliver capacity development for Soum governance, b) the Green Gold Program by SDC (Swiss Development Corporation) that as the longest running project on pasture management has generated valuable learnings on herders basic organizations (named in this project pasture user groups – PUGS), and on apex organizations (Soum level associations and Aimag level federations) that have the potential to become a key sustainability feature providing both institutional and market functions. The Green Gold Project also has established functional linkages to the ALAGAC facilitated processes of allocating customary resource use rights; and c) the project on "Ecosystem-based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia" (2012-2017) (UNDP/GEF) (briefly EBA project) has implemented successful activities in the protection and ecological restoration of springs and riparian areas.

46. To establish mechanisms to promote synergies, preparatory discussions, through the relevant government agencies, will be held with the other projects in the project inception phase. During the start-up workshop, collaboration and experience sharing mechanisms should be further agreed, and thereafter planned in detail. More specifically, the following synergies should be addressed:

- With SLP 3, coordinate delivery of Soum level training, whereby SLP 3 provides modules on governance, while PMPMD-AF may focus on pasture management.
- With the Green Gold Program, experience sharing mechanisms on group and Soum level will be discussed, including the development of apex institutions. Should the final selection of PMPMD project soums target areas where the Green Gold Program is active, activities should be planned to complement support of the two projects to beneficiaries, avoid duplication and support the same framework of community and soum level institutions and mechanisms.
- With the UNDP/GEF EBA project, experience sharing mechanisms, such as site visits and/or exchanges, should be discussed.

47. Soum level Inception and Implementation – Key Steps and Activities:

- Inception phase: (a) central workshop with representatives of *soum* government and land officers to introduce the approach of ALAGAC of resource mapping and allocation, organized by PMU in coordination with ALAGAC resource persons; (b) *soum* level inception workshops and establishing *soum* working group for project implementation, organized by PMU and soum government., and (c) development of strategy for pasture and market development. Integrated with this process is the ALAGAC-facilitated resource definition and allocation, discussion of group formation, discussion of agreements among groups, discussion of contracts between groups and *soum* government.

Implementation phase: (a) delivery of training packages at *soum* level. The trainings include pasture, livestock and risk management trainings, as well as governance (coordinated with SLP 3), and the ALAGAC provided training/facilitation for resource allocation, and re-enforcement of M&E for pasture and livestock management; (b) identification of investment needs, for pasture management/climate change adaptation and market development (*soum* level) through a participatory process facilitated by soum facilitator and PMU. When determining investment needs and defining project support, co-financing options and commitments from local government will be discussed and agreed.; (c) group formation and facilitation, trainings,

investments to establish revolving funds, elaboration of a participatory M&E including indicators and target; (d) support to development of annual pastureland management plan at *soum* level; developing PHG pasture land plans/norms and alignment with *soum* and *bag* level planning, ongoing support in implementation and monitoring of impacts by service provider/NGO on pasture management; (e) identification of market opportunities and needs for investments at *soum* level for pre-processing, collection etc., investments at *soum* level supported by PMU (responsible officer for linking pasture management and market development component), in close cooperation with *Soum* and *Aimag* officers; (f) mid-term evaluation of PHGs' achievements, based on participatory M&E, to determine top-up amount of PHGs RFs by technical assistance/review mission. Specific ToR are to be developed to this end; (g) capacity assessment of PHGs for economic activities, identification of PHGs with the highest potential to establish cooperatives, possibly jointly with WGs, provision of trainings and ongoing capacity building support, business planning, linking to markets Provided by technical assistance and/or market development component, and (h) experience sharing events - among PHGs/cooperatives in one *soum*, and among *soums* and *aimags*.

48. **Implementation arrangements.** Oversight for project implementation will be provided by *soum* level working groups. *Soum* facilitators working under the guidance of the PMU will serve as the secretary of the working group. In each selected *soum*, a *soum* facilitator will be nominated. Its costs will be borne essentially by the GoM with a top-up from the project as in the case of facilitators for Market Development component (women's groups). Technical assistance (training, research, strategy development with *soums*) will be delivered through service providers. Investments will be delivered directly by PMU or through contractors engaged through a bidding process according to Mongolian law.

49. **Component 2 - Market Development.** The objective of this component is to increase value-added in production and processing of selected agriculture commodities and develop markets focused on strengthening resilience in rural communities. The organization of poor beneficiaries into WGs and PHGs will be scaled up to form a market development cluster and enable access to seed loans to make initial investments into production and marketing activities. This scaling-up is based on a menu of economically viable commodity/value chain investments and consideration of the potential to improve dietary diversity¹³.

50. Under PMPMD AF, cooperatives, associations and contract farming will be promoted while market-driven production and processing will be facilitated through joint business plans development including cooperatives/processors/ commercial buyers. To facilitate access to markets, PMPMD AF will help identify commercial buyers/processors and link them with cooperatives. Through the provision of a package of financial and non-financial support, the project will aim at graduating newly established mixed cooperatives and existing emerging small enterprises and cooperatives up to a level where they can be considered as normal clients by financial institutions.

51. The project will also support producers and processors to comply with food safety measures, focusing on animal health and certification processes.

52. The project aim at developing a model of support for the following three different types of VCs: (i) an *aimag*-oriented VC (producers selling locally such as vegetable producers); (ii) country-oriented VC (producers/processors mainly commercializing their production across Mongolia such as cheese), and (iii) export-oriented VC (such as frozen meat). The final selection of the VCs supported under the PMPMD AF will result from the VC studies carried out during the one-year extension period (potential VCs include: fibre, meat, dairy, berry and vegetables) and consider the up-to-date progress in the VC development as well as the potential to improve nutritional status (particularly for children).

53. The component has been organized to follow a VC structure: production, value addition, and market access.

- **Production.** This sub-component will focus on supporting PHG members (144 PHGS supported under Component 1) and 108 women's groups to form cooperatives at *soum* level. The support package for any group will last two years.

¹³ 16% of children under the age of five are stunted in 2010 (compared to average 28% between 1999 and 2005). Still micronutrient status is currently off course against global WHO targets (particularly overweight/obesity and anemia among preschool aged children and pregnant women).

- In terms of enhancing productivity, the project will specifically finance: (i) rehabilitation of workplaces at soum- and aimag-level for project-supported groups. This will be co-financed by the project and local government; (ii) seed and breed improvement including building shelters for breeding herds; (iii) small-infrastructure for feeding, irrigation and greenhouses; (iv) pest and disease control such as fencing and ear-tagging to improve traceability; (v) production facilities such as market and storage structures.
 - In terms of training of groups members, the project will provide technical assistance on the following subjects in line with market opportunities¹⁴: (i) cooperative establishment¹⁵; (ii) business planning; (iii) packaging skills; (iv) business data management; (v) access to financial services (loan resources and guarantee); and (vi) fortification. This technical assistance is in the same form as the original PMPMD, thus it will be implemented by the same service provider by extending their current contract.
 - In terms of developing business plans, the project will provide technical assistance through NGOs who are experienced in supporting the elaboration of business development plans through other value chain projects in Mongolia such as Mercy Corps' ones.
 - Capacity of commodity associations will be enhanced to enable them to support value chain development, with handholding and advisor support through the Agribusiness Development Advisors (ABA) at the aimag level. These ABA will be aimag staff. Capacity of commodity associations will be enhanced to enable them to support value chain development, with handholding and advisor support through the Agribusiness Development Advisors (ABA) at the aimag level. These ABA will be aimag staff. Key association staff will be trained by a selected NGO or international organization in both business and production skills. ABA will be trained by the selected entity through expanded Rural Invest toolkit including business skills akin to IFCs Business Edge, and communications, training and facilitation skills. Backstopping support of Associations (one for each of the project priority commodities (dairy, meat, vegetable, berry) would be provided by the PMU (Market Development Manager).
- Value addition through processing and quality control. Support provided by the project will target: (a) mixed cooperatives involving herders and women's groups formed with the support of the project, and (b) emerging small enterprises and cooperatives. Apart from the mixed cooperatives being formed from PHGs and WGs, two rounds of requests for proposal to identify emerging small enterprises and cooperatives will be organized by the project. Emerging small enterprises and cooperatives will be defined by turnover, profit and number of employees and by the fact that they cannot yet access bank loans at market rate. Processing and quality assurance will be enhanced by technical guidelines and, quality and food safety assurance and testing. Activities implemented under this sub-component will include:
- Provision of training and technical assistance based on a need assessment
 - Development of business plans in collaboration with buyers and suppliers
 - Provision of credit for small equipment (such as processing unit, packaging machine) guaranteed by the LGF
 - Pre-financing of investments such as storage facilities or warehouses and assistance to constitute a cooperative RF that will be used to finance working capital needs
 - Development of contracts to use public-owned facilities such as storage facilities, warehouse or processing units
- It is expected that the project will support 18 new cooperatives and 18 emerging small enterprises and cooperatives. The increased focus on food safety and food testing will be undertaken by the Professional Agency for Food Testing and Quality, with additional laboratory capacity and skills development financed through the project.
- Market access. The following activities under this sub-component will be implemented in close collaboration with relevant projects or programmes (of EU, FAO, France).

¹⁵ Specific support will be given to PHGs and WGs having complementary activities to form a cooperative. Business and cooperative management training will be provided to cooperative members as well as legal assistance to register the cooperative, elect the necessary governing bodies and to elaborate the by-laws and manual of operations and procedures. Once training and technical assistance has been provided, the cooperative will be able to develop its business plan in collaboration with suppliers and buyers as in the case of emerging strategically selected micro-enterprises and cooperatives.

- Develop quality control, and certification process and units at aimag and national levels through the contracting of service providers (international specialized agencies)
 - Build up capacity of vets, develop traceability and food safety monitoring capacity including training, diagnostics, certification and quality/food safety laboratory development at aimag and national level in close collaboration with other donors' projects
 - Collaborate with other projects in the development of standards for national markets and to access international ones
 - The project will support MOFA to create a stakeholder forum which will provide an opportunity to present findings of similar value chain projects through annual meetings and report on the analytical research conducted by donor-funded projects or led by MOFA or MOI. The other key function of the stakeholder forum is to provide technical advisory service to MOFA. Technical advisors can include project-supported business advisors and other service providers engaged through the project.
 - The project will identify opportunities to link to on-going or planned investment in the market price information and larger-scale infrastructure for improving sanitary conditions and certification facilities.
- Financial instruments. The following considerations guide PMPMD AF activities with regards to financial instruments:
- Financial institutions (FIs) partnering with the project will be selected through a competitive and transparent call for proposals channelled through the banks' associations (for commercial banks) and the Financial Regulatory Commission (for Non-Bank Financial Institutions and Savings and Credit Cooperatives). Final selection will be done after a review undertaken by an ad-hoc committee (composed of representatives from MoF, MOFA, and a banking expert from the civil society or an audit firm that has no contractual agreements with answering financial institutions), a due diligence exercise carried out on short-listed Financial Institutions (local independent auditor or banking expert) and IFAD no-objection.
 - To increase outreach in the project area, the project will co-finance incremental operating costs for selected financial institutions to provide full services to project beneficiaries outside of their 50km radius from their branch.
 - Existing Revolving Funds (RF) formed from repayments of WGs' loans at the level of State Bank and Capital Bank will be maintained at bank's level until project's completion (i.e. 2021) and not reimbursed to MoF in June 2018 as per current agreement (an amendment to the current Subsidiary Loan Agreements - SLA should be prepared by MoF and signed immediately). This would allow further financing of WGs and PHGs.
 - Introduction of syndicated loans and graduation process. The first loan to any project beneficiary will be financed from project resources bearing an affordable interest rate of around 10%. The second loan would be financed by mixing project resources (RF resources) with bank's own resources (or resources from other projects) resulting in an interest rate of around 11/14% (or less with other donors' resources). Any subsequent loan would be financed from bank's resources (or other project's resources) only at market interest rate.
 - Additional credit lines will be made available for project beneficiaries (PHGs, WGs, cooperatives, emerging small enterprises) that otherwise can't access banks' loans. Financial institutions selected under the above-mentioned procedure will sign a SLA with MoF. Terms and conditions applicable to these SLAs will be similar to those in the current SLAs. Interest rate charged by financial institutions to project-supported beneficiaries should be around 10% (in order to cover their operating costs and profit and risk margin). These loans will be eligible to either the portfolio or individual guarantee from the project LGF.
 - As per the revised Financing Agreement signed between the Government of Mongolia and IFAD, MoF is implementing the LGF. It has delegated implementation of the LGF to IFAD. MoF is also vested with the responsibility of monitoring and supervising LGF's activities and budget. Upon MoF request, the LGF has implemented a specific model for portfolio and individual guarantees in rural areas and for agricultural activities. As already mentioned and agreed in the 2015 supervision mission report, the two entities (State Credit Guarantee Fund and LGF) will merge at project completion once the model has been successfully assessed and subject to a due diligence exercise on SCGF activities, financial statements and governance. Concomitantly, a due diligence exercise on LGF activities and financial performance will also be carried out and financed by SCGF. At the time of the merger, SCGF

will endorse all on-going guarantees and will continue to extend guarantees for rural and agriculture development using LGF resources specifically for that purpose.

- No further capitalization of LGF is considered. In addition, in order to maximize the use of LGF resources, LGF capitalization could be reduced and resources made available used for additional credit lines to project beneficiaries and pre-financing of large agricultural investments.
- LGF operating costs will be financed firstly from interests earned on its resources deposited in interest-bearing accounts at banks' level and secondly from project's resources (if needed). After coverage of LGF's operating costs, the balance of interests earned will be used to capitalize a risk fund.
- Since SCGF is now entitled to guarantee loans extended by banks using the Employment Generation Fund resources, the Portfolio Guarantee Contract signed between the LGF, the Ministry of Labor and the two participating banks will not be renewed.
- LGF and SCGF will continue their close collaboration with regards to training of beneficiaries and bank staff with a focus on risk management on microloans (WGs and PHGs) and small loans (emerging small enterprises and cooperatives), assistance in reviewing small enterprises and cooperatives business plans for individual guarantees, information exchange, study tours, concertation on approach, and capacity building of both institutions' staff.
- After PMPMD AF mid-term review, LGF and SCGF will jointly elaborate the roadmap for merger.

Box 1 – PMPMD AF Financial Instruments

The following financial instruments will be used under PMPMD AF:

(a) Credit Lines

- Background: EGF resources are not sufficient to meet the demand for loans emanating from entrepreneurs whether as individual or as a group. Partnering Financial institutions (PFIs) consider financing rural activities as extremely risky and limits credit lines are available.

- Objective: To establish a financing mechanism that allows loans to emerging businesses and to rural (agricultural) activities with higher risks.

- Approach: The project beneficiaries (WGs, PHGs, newly created cooperatives as well as emerging small enterprises and cooperatives) will be merged into the existing financing mechanism through the following three steps:

Step 1: Loans for rural activities are provided following the project terms

Step 2: Syndicated loans (mix of credit lines from the project and PFIs)

Step 3: Loans fully financed by PFIs from their own resources

- Mechanism: Interest charged by PFIs will be similar to the one charged when PFIs are using resources from the EGF i.e. around 10%. With an interest rate charged by MoF at around 1-1.5% per year, PFIs have sufficient spread to cover their operating costs, share of risk and margin (part of the risk up to 80% is covered by the PMPMD LGF). PFIs have already accepted the proposed interest rate. Repayments of loans extended by PFIs to target groups will constitute a Revolving Fund (RF). This (PHI-level) RF will be used to further finance similar target groups.

A Subsidiary Loan Agreement (SLA) will be signed between MoF and each PFI based on the projected number of target groups to be financed. PMU and LGF unit will also sign SLAs to ensure compliance with project's objectives (one SLA for WGs, one SLA for emerging small enterprises and cooperatives and one SLA for PHGs and PH cooperatives newly created).

(b) Guarantee Facility

- Background: The PMPMD Loan Guarantee Facility (LGF) has been implemented by MoF as a pilot for guaranteeing loans extended for rural activities. The borrowers are poor and small entrepreneurs as well as groups (WGs and PHGs). LGF included the provision of portfolio guarantees. The existing State Credit Guarantee Fund (SCGF) mainly focuses on

loans extended for urban activities or to medium/large companies with more than three years of business.

- Objective: Through a successful pilot, PMPMD LGF will be integrated in SCGF's activities. LGF will guarantee loans extended by PFIs to target groups.

- Approach: No additional resources are deemed necessary during the PMPMD AF life time to guarantee loans extended by PFIs.

- Mechanism: PMPMD LGF will continue to manage its Unit under supervision of MOF.

(c) **Revolving Funds** (owned by PHGs/WG/Cooperatives)

- Background: Each WG, PHG and later each cooperative, created under the project, has its own RF made from repayments of equipment pre-financed by the project or made from its savings.

- Objective: To support the establishment of PHG, WG or cooperatives

- Approach: Project-supported group facilitators support the management of group- or cooperative- owned RF repayment by group leaders. One the project is completed, the group leaders will continue manage the RF.

- Mechanism: These RFs will be kept at the level of each group/cooperative and used by these latter to finance either the working capital for their investment or small loans to each member. Experience from PMPMD is promising to strengthen the group formation and function, and to manage the RF for productive activities.

54. **Component 3 - Project Management and Enabling Environment for Business Development.**

55. PMPMD Component 3 Project Management and Policy Assistance is renamed under PMPMD AF as Component 3 Project Management and Enabling Environment for Business Development. This is based on the recognition that the current national capacities and setting require further nation-wide assistance (beyond geographical target areas) to boost or meet the demand for Mongolian products.

56. Issues related to Project Management will be described in the Implementation Arrangements section.

57. The Enabling Environment for Business Development sub-component aims at enhancing the efficacy, reach and pace of agribusiness development both nationally and in targeted aimags. The main approach is to develop business development capacity at *aimag* and national levels

- Preparation of knowledge products: The following knowledge products will be prepared to inform policy development and support implementation of project activities:
 - Feasibility studies for value-added production and processing activities
 - Studies/analytics for current and ongoing activities to inform value chain selection and intervention
 - Case studies to enhance training and advocacy for both policy change and scale out of successes nationally and internationally
- Establishment of Agri-Business Development Advisory Services: Building upon the models¹⁶ of agribusiness advisory support successfully tested and practiced in Mongolia, the project identifies advisory service providers and provides training to a group of Agri-Business Development Advisors (ABDA). The expected outcome of training of ABDAs is the following: (i) groups or cooperatives are able to identify, negotiate with and conclude equitable contracts with buyers and enterprises associated with collecting, preparing and transporting produce to markets; and (ii) mechanism for market information and technology knowledge is established. For this, the project will invest in the following:

¹⁶ One of the model is the business development service (BDS) provided by NGOs and experts contracted with Mercy Corps in the implementation of the Market Opportunities for Rural Entrepreneurs Projects (2009-2012) funded by the Swiss Agency for Development and Cooperation (SDC) and implemented by Mercy Corps Mongolia.

- Identify a cadre of business development service providers from the private sector (including existing associations, unions, coops and Banks) to support value added production and processing, access to markets and access to finance and programs
 - Select and training of ABDA at both public and private including knowledge on value chain financing and developing agri-business development plans at a local level
 - ABDA training to University of Agriculture and Agribusiness Faculties
- Preparation of local Agri-Business Development Plans: The project provides agri-business development advisory services to *aimag* and national governments through ABDAs. The project facilitates connection of value chain actors to established Associations. The project would work with existing business platforms to explore establishment of regional brands where beneficial to product marketing.
- Conduct skills development training for facilitators recruited at local level (soum and aimag) - The scope of training will include group dynamics, planning and communications as well as fundamentals in business development. This will enable stakeholders to act cohesively and join associations/unions.
 - Support associations and local governments to co-develop and agree on agri-business plans through identifying opportunities and demands
 - Provide marketing services to associations, local governments and local facilitators
 - Finance study tours and participation to fairs, trial shipments, market research and studies (labelling, certification of origin together with the French Embassy programme) as well as development of adequate network.

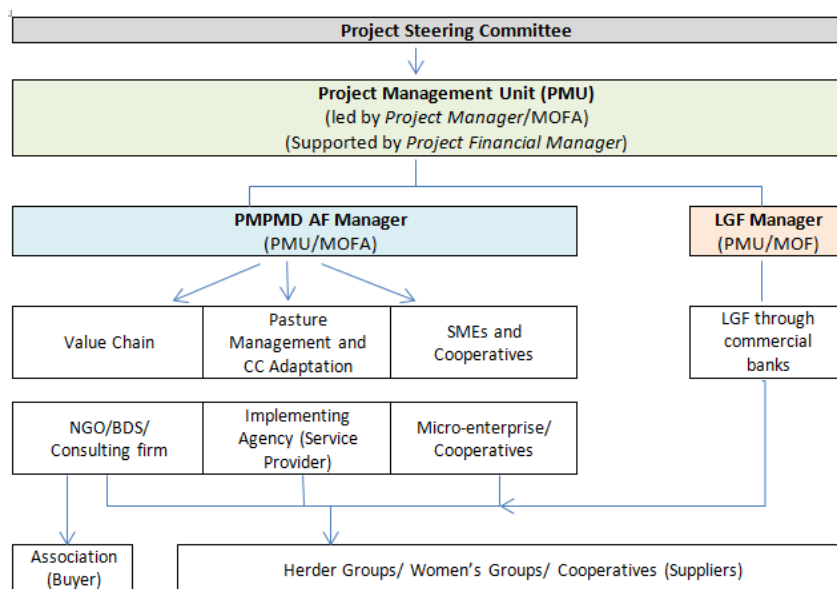
D. Project Implementation Arrangement

Organizational Framework

58. The project implementation arrangement is based on the PMPMD extension period (2016-2017) (See para 26. (d)). MOFA will continue to be the Lead Project Agency (LPA) and be responsible for the PMPMD AF implementation. The existing Project Steering Committee (PSC), chaired by MOF, will continue to oversee project implementation and provide overall policy and management directions for PMPMD AF implementation.

59. Activities related to PHGs and to WGs will mainly be implemented through specialized NGOs recruited under an open and competitive bidding procedure. For the Pasture Management component, soum-level working groups oversee project implementation. Soum facilitators, working under the guidance of the PMU, will serve as secretary of these working groups. Technical assistance (training, research, strategy development with soums) will be delivered through service providers. Investments will be delivered directly by PMU or through contractors engaged through a bidding process according to Mongolian law. Activities under the market development component will mainly be implemented by service providers/contractors contracted through a bidding process. The project will also seek to, wherever possible, to develop linkages and synergies with existing and upcoming projects such as FAO, WB, ADB, Agronomes et Vétérinaires sans Frontières (AVSF), French Embassy, Mercy Corps, JICA, and SDC. The project will support MOFA to create a stakeholder forum which will provide an opportunity to present findings of similar value chain projects through annual meetings and report on the analytical research conducted by donor-funded projects or led by MOFA or MOI. The other key function of the stakeholder forum is to provide technical advisory service to MOFA. Technical advisors can include project-supported business advisors and other service providers engaged through the project.

Chart 1: Organization Chart



60. Project-developed financial instruments will be implemented through existing financial institutions. Credit lines will be awarded to financial institutions (commercial banks and non-bank financial institutions) after a transparent and competitive call for proposals and the signature of a SLA between MoF, each selected financial institution, the project's PMU and LGF Unit. Repayments made by final borrowers (project's target groups) will form a RF kept at financial institution's level to be further used for extending loans to similar target groups. The PMPMD LGF will continue to extend guarantees for its target groups until project completion when it will be integrated to the SCGF, upon successful evaluation of both entities. In the meantime, both institutions will continue to collaborate actively (training, capacity building, exposure visits, assistance from SCGF to LGF for loan applications' assessment for individual guarantees).

Financial Management, Procurement and Governance

61. The Corruption Perception Index for Mongolia published by Transparency International in 2015 was 39. In 2015, the first Public Expenditure and Financial Accountability (PEFA) assessments was undertaken in Mongolia showing good performance in the area of Credibility of Budget, budget comprehensiveness and transparency as well as policy based budgeting. However, indicators related to Effectiveness of internal audit, legislative scrutiny and follow-up on external audit were still considered weak. As a result the Inherent risk is rated as medium risk .

62. Strengths and Weaknesses of proposed FM arrangements. From a Financial Management (FM) point of view the strengths of the additional financing for PMPD-project is that the FM-arrangements will follow the standards already applied in the original IFAD PMPMD project which have been rated medium risk and have adequately complied with IFAD requirements including submission of audit reports. In addition, to address previous FM-related weaknesses it is important to ensure that: (i) there is sufficient FM staff and that they have a the right skills; (ii) solid accounting and reporting systems are to be maintained throughout the project implementation in order to record and track the expenditures and produce complete, accurate and timely financial reports; and (iii) the Financial procedures are promptly adjusted to reflect the project the requirements of the new project (iv) adoption of a good governance framework to ensure accountability and transparency.

63. *Counterpart financing.* The Borrower shall ensure all duties and taxes associated with the Project are exempt.

64. *Flow of Funds.* One separated Designate Account denominated in USD for additional Financing (DA-AF) and two separated project accounts in the local currency, one for pasture and marketing components while another one for guarantee component. Loan Guarantee Fund (LGF) Unit Project Account for AF will be opened and maintained in local currency to receive and hold funds from the DA-AF for the operations of the Guarantee Facility which will be operated by the LGF Unit.

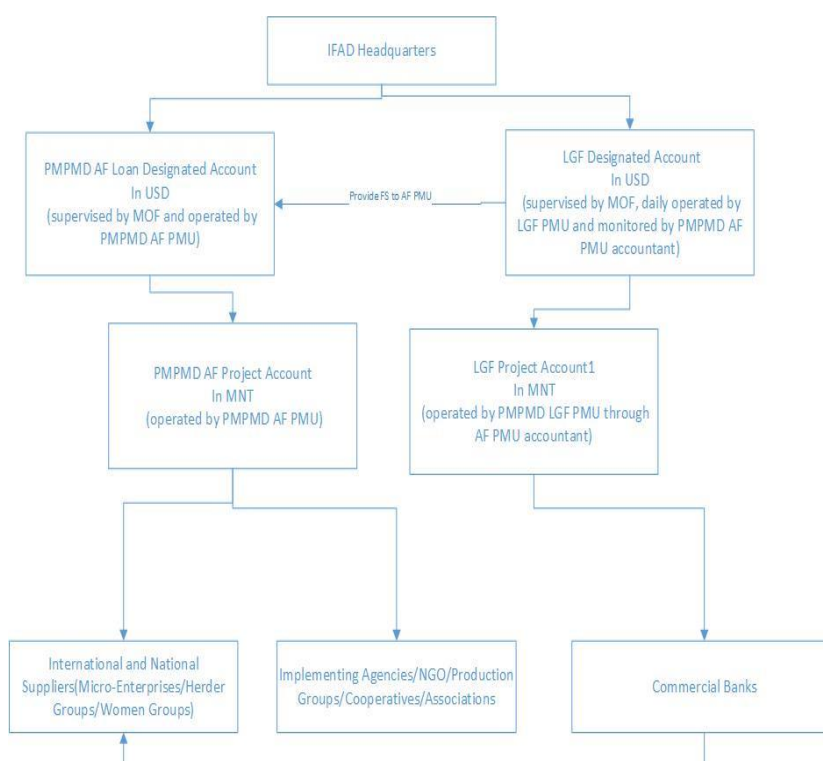
65. The project will use the Imprest Account method for operating the Designated Accounts (DA), The authorized amount of USD1.5million to PMPMD phase I is found sufficient. It is recommended same amount to be applied to the additional financing.

66. The Designated Account (DA-AF) will be administered following Imprest Account arrangements. Advances from this Financing must be segregated from other funds for the Programme.

67. Under Imprest arrangements, the maximum authorized allocation to the DA-AF will be USD 1.5 million. Upon fulfilment of conditions precedent to withdrawal and the Borrower's request, one or more advances may be withdrawn within this authorized allocation.

68. The following are the SOE thresholds that apply for withdrawal application under procedure "Advance Withdrawal" and "Reimbursement" for all eligible expenditures pertaining to all categories up to USD 50 000.

Chart 2: Flow of Funds



Accounting, Internal Controls, Financial Reporting and Auditing

69. The accounting staff shall be adequately staffed and trained to handle the accounting requirements of the Project.

70. The accounting software and chart of accounts shall be set up to ensure separate project accounts to monitor implementation progress for the additional financing, identify works, goods and services, and disclose their use in the project.

71. The project's internal controls will be designed to ensure effectiveness and efficiency of operations. Roles and responsibilities will be aligned to project objectives. The project implementation manual (PIM) including also the financial management manual needs to be updated.

72. Consolidated financial statements for the PMPMD project shall be prepared in accordance with International Financial Reporting Standards (IFRS) or International Public Sector Accounting Standards (IPSAS).

73. The following are designated as additional general conditions precedent to withdrawal:

- (a) The PMU shall have been duly established and the respective key Project staff shall have been selected in line with the revised project implementation arrangement;
- (b) The authorized signatories shall have been submitted to the Fund; and
- (c) A updated PIM shall have been prepared and is acceptable to the Fund

3. The following are designated as additional specific conditions precedent to withdrawal:

- (a) No withdrawal shall be made in respect of expenditures under the guarantee until a draft Guarantee Agreement between the Project and the participating financial institutions has been approved by the Fund; and
- (b) The draft manual of procedures of the Project guarantee/credit mechanism has been approved by the Fund.

Table 1 – Summary of Financial Management Assessment and Mitigation Measures

Risks	Initial Risk Assessment	Proposed Mitigation	Residual Risk Rating
Inherent Risks	Medium. TI Rating in 2015 was 2.39. The government of Mongolia has adopted a series of reforms and put in place a foundation for a robust public financial management framework. However, its legislative elections in 2016 is approaching, there may be a change of the parliament and government afterwards.		Medium
Control Risks			
1. Organization , Staffing	Medium. A Project Management Unit (PMU) established for current PMPMD project, has been vested with executive responsibility on project management. The overall organization and management structure remains. will be PMU and Financial staff are experienced with IFAD projects.	FM guideline with the procedure and processes will be updated. MOFA shall strengthen its involvement through appointing a part-time Project Director. The TOR and reporting lines for the PD shall be clarified.	Low
2. Budgeting	High. Budget is made by concerned implementation agencies for various project activities and then centralized into the AWP&B for endorsement by the Parliament. Late submission of AWPB was observed in PMPMD phase. The AWPB has low credibility as there are deviations of over 20% between planned activities and actual expenditures.	Close oversight by the PMU on the budgetary progress will be one important task of its management function. Capacity building on project implementation and coordination shall be continuously provided to PMU staff.	Medium
3. Fund Flow, Disbursements	Low. Overall, there was no issue identified by previous SIS on its flow of fund. PMU has institutional knowledge on IFAD disbursement procedure and related requirements. WAs for replenishment were submitted timely. Disbursement delay could arise due to weak cash flow planning, slow submission of disbursement requests from implementing agencies.	PMU updated its FM Manual with clear instructions for disbursements requirements, especially adding disbursement procedure and reporting lines for parallel PMU on guarantee fund.	Low
4. Internal Controls	Medium. Internal controls at PMU mostly satisfy the proper management of IFAD funds. However, the vacant of Project Director at MOFA indicated the limitation on coordination with the MOF implementing unit on loan guarantee.	<ul style="list-style-type: none"> • PMU shall update FM with procedure and control points; • Regular FM trainings shall be provided to related stakeholders. 	Medium
5. Accounting Systems	Low. The accounting, recording and reporting practices in Mongolia are generally strong. There is a budgeting law and financial management rules in place. PMU applies accordingly. Project has already applied a computerized accounting software for its daily operation.	Appropriate financial policies and procedures shall be codified and followed	Low

6. Reporting, Monitoring	Medium. PMU follows IFAD recommended practice in generating financial statements for projects. The spending of the budget were timely recorded. Timely bank reconciliation was organized by the project accountant. Audit report was not submitted timely based on previous SIS findings.	Capacity of project accountant needs to be continuously develop on the quality and timeliness of financial statements and annual audit report	Low
7. Internal Audit	Medium. Internal audit limited to PMU as the leading agency was not fully involved an as institution. The internal audit to the whole project has not been a routine practice.	<ul style="list-style-type: none"> • IFAD requirements to be shared with PMU; • Regular communication and information sharing in this regards shall be made by PMU to related implementing agencies and stakeholders 	Medium
8. External Audit	Medium The National Audit Office has the mandate to audit all foreign funded loan projects, following standard and specific donor requirements. Proposed audit arrangements meet IFAD requirements, however, the auditing team has limited knowledge on IFAD requirements.	Specific requirement from IFAD are included in IFAD Audit Guidelines and TOR. External auditors need to carry out the audit work in line with the IFAD guidelines and TOR.	Low

E. Risk Identification and Mitigation

74. Mongolia and the project area are more and more exposed to climate change as there are prone to increased frequency and intensity of extreme events. The 2010-2011 *dzud* has killed millions of animals and forced thousands of herding families to migrate to *soum* or *aimag* centres as a result of the complete loss of their herd. The PMPMD AF includes activities that mitigate climate change risk such as *soum* and *aimag* reserve storage facilities for hay and fodder; water sources rehabilitation and construction; improved pasture management planning inclusive of income generating activities as a mean to diversify income for herders; support to risk fund that will be used for livestock insurance, and training/capacity building of PHGs.

75. Distance in Mongolia is very important problem as it drastically increases transportation access, limits access to markets outside of the *soum* and the *aimag*, and also limits access to financial services. Mitigation measures embedded in PMPMD AF design are threefold: (i) strengthening of value chains at three different levels (*aimag*, national and international) with a provision of non-financial support aiming at facilitating market access to selected products; (ii) organization of producers in groups/cooperatives to facilitate market access, reduce transportation costs and improve quality of production, and (iii) assistance to financial institutions to increase their outreach through the co-financing of incremental operating costs.

76. Scattered interventions and limited impact on beneficiaries are also a risk considering the project area, the potential number of beneficiaries, and the total amount of the project. Project interventions will target groups and cooperatives and training will be provided to assist target population to form these entities. Synergies will be developed with on-going or new projects with a view to maximize the impact and benefits for the project target groups (Green Gold project, ADB value chains and SMEs development, Livestock Insurance, etc.). Collaboration with financial institutions will also be deepened especially with the implementation of syndicated loans that will open access to larger resources to finance project beneficiaries. Finally, to also reduce implementation costs and benefit from past experience, the project will use PHGs and WGs leaders, local authorities and facilitators from PMPMD area to train and build the capacity of project beneficiaries in PMPMD AF area.

77. Value chain development has been the weak activity under PMPMD especially because of the time needed to internalize the innovative concept at that time of value chain development. The Millennium Development Goals-based Comprehensive National Development Strategy for Mongolia emphasizes development of export-oriented manufacturing and services led by the private sector as one of its six priorities. In line with this priority, the government is exerting effort to enhance the competitiveness of the agriculture sector by strengthening links between producers and agro-processors, and promoting export of value-added products. During the past years, donor projects have been focusing on value chains taking the Mongolian cashmere value chain as a model to be replicated. Local stakeholders in different commodities, line ministries and producers/herders/farmers

are now more aware of benefits inherent to value chain development. As a sign of this awareness, unions, federations of stakeholders within different value chains have been established and participate in the strengthening of value chains. The project will develop synergies with projects with similar objectives to avoid overlapping in support provided and to maximize impact for project beneficiaries.

78. Climate change poses a risk, as extreme events are predicted to increase in frequency and severity; particularly Dornod and Sukhbaatar Aimags are effected by strong storms. PMPMD design includes emphasis on risk preparedness and response capacity; hay and fodder storage facilities and improved production of fodder are key activities in this regard.

79. The environmental and social category of PMPMD AF is defined as **B**. The project is mainly about enhancing sustainability of pasture management and improve livelihoods. Activities of small-scale infrastructure development (such as small scale water reservoirs, well development or the establishment of small scale processing facilities) will follow national environmental impact review procedures taking into account all information on ecological assessments and be initiated by joint stakeholder planning. Further details are elaborated in the SECAP Review Note (attached).

80. The climate risk category of PMPMD AF is likely to be “moderate”. Climate-risks will be managed by involving technical experts in planning, construction and management of investment activities and following all national procedures for inspection and compliance. Further details are elaborated in the SECAP Review Note (attached).

V. PMPMD AF Costs, Financing and Benefits

A. PMPMD AF Costs

81. The total PMPMD AF investment and incremental recurrent costs for the period September 2017 - September 2021, including physical and price contingencies, are estimated at US\$ 11.38 million (around MNT 24.59 billion). Table 4 below presents a breakdown of the costs by component.

82. The investment in Component 1: Pasture Management and Climate Change Adaptation, in base costs, totals US\$ 4.50 million (42% of total base costs) while Component 2: Market Development, accounts for US\$ 4.09 million (38% of total base costs) and Component 3: Project Management and Enabling Business Environment, accounts for US\$ 2.13 million (20% of total base costs). Physical and price contingencies amount to US\$ 0.66 million and represents 6% of the total base costs.

Table 4 - Programme Cost by Component

Mongolia PMPMD_Phase II Components Project Cost Summary	(MNT Million)						(US\$ '000)				
	Local	Foreign	Total	% Total		Local	Foreign	Total	% Total		
				Foreign Exchange	Base Costs				Foreign Exchange	Base Costs	
1. Pasture Management and climate change adaptation	6 123	2 492	8 615	29	40	3 044	1 240	4 284	29	40	
2. Market Development	7 784	957	8 741	11	40	3 820	476	4 296	11	40	
3. Project Management & Enabling environment for business development	4 211	169	4 380	4	20	2 074	84	2 158	4	20	
Total BASELINE COSTS	18 118	3 619	21 737	17	100	8 937	1 801	10 738	17	100	
Physical Contingencies	300	111	411	27	2	149	55	204	27	2	
Price Contingencies	1 843	649	2 492	26	11	342	121	463	26	4	
Total PROJECT COSTS	20 261	4 379	24 640	18	113	9 428	1 977	11 404	17	106	

B. Financing

83. The PMPMD AF will be financed by: (i) a new IFAD Loan to be considered for approval by its September 2016 Executive Board (US\$ 9.06 million accounting for 79.4% of total cost); (ii) contributions from the Government of Mongolia (US\$ 1.87 million or 16.4% of total cost), and (iii) contributions from financial institutions (US\$ 0.45 million or 4.2% of total cost) through syndicated loans. Contributions from the GoM will include: (i) US\$ 0.95 million to finance duties and taxes; US\$ 0.68 million to cover the operating costs of the project LGF through the financial income generated by

the investment of the project LGF resources, and (iii) US\$ 0.24 million to co-finance loans extended to WGs from resources of the Employment Generation Fund.

Table 5 - Financing Plan by Components (USD'000)

Mongolia
 PMPMD Phase II
 Components by Financiers
 (US\$ '000)

1. Pasture Management and climate change adaptation
 2. Market Development
 3. Project Management & Enabling environment
 for business development
- Total PROJECT COSTS**

	GOM		IFAD		MOF		MOL_EGF		Banks		Beneficiaries		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. Pasture Management and climate change adaptation	538	11.4	4 188	88.6	-	-	-	-	-	-	-	-	4 726	41.4
2. Market Development	249	5.6	2 812	63.1	679	15.2	243	5.5	473	10.6	-	-	4 455	39.1
3. Project Management & Enabling environment for business development	163	7.3	2 060	92.7	-	-	-	-	-	-	-	-	2 224	19.5
Total PROJECT COSTS	950	8.3	9 060	79.4	679	6.0	243	2.1	473	4.1	-	-	11 404	100.0

Appendix I. Approach to Value Chain Development

This analysis on the value chain development focuses on the following 5 products: dairy, vegetable and berry (as identified in the original PMPMD) as well as meat and cashmere (selected primarily on the need to provide economic incentives to herders and national and export market potential).

I. Assessment of the status, roles and performance of target beneficiary groups

The project focus is on alleviating poverty of poor herders and rural poor. The project supports the rural poor concentrated in soum and aimag centers, developing micro, small and medium enterprises to achieve economies of scale and access value chains.

- **Micro-Enterprises Development.** 455 women's groups (WG) consisting of 3664 women and nearly 1000 men in 45 soums of the 5 project aimags. 86% of the groups received a loan, for which 45% reported it was for business purposes and the repayment rate is over 97%. 93% of the WG have savings in their revolving fund. Training was provided in several areas including: group formation and management (100%), and significantly lower participation in business (46%), cooperative development (10%) and production training (23%). WG were supplying local markets at the soum level with value added products 20% (15% vegetables and 5% milk and meat) directly related to the identified value chains, a further 56% production oriented using raw materials from related value chains (e.g. bakeries) or establishing retail outlets including agriculture products, the remaining 24% were trade and service related (clothes, shoes and hairdressing). Field visits and meeting with WG representatives in UB confirmed the following opportunities which are proposed for additional focus under the AF:
 - **Women's group as the basis of the economic activity support:** Consistent message from soum and aimag governments was the importance and support for WG as a key option for poverty alleviation. The local government staff could facilitate the group economic activities enhancing ownership and enabling a scaling up. Collaboration with herders groups will also allow access to raw materials required.
 - **Training and knowledge management:** Knowledge exchange workshops, case studies of innovative products warranted, training on market access and business skills (for groups as well as local government officials). Market access can be also enhanced through social media and/or a market area established at soum, aimag or UB.
 - **Economic analysis on future business opportunities:** To inform new groups of existing group activities, other remunerative activities and future business options to new groups related to priority value chains.
- **Small and Medium Enterprises and Cooperatives Development.** 35 of the 45 SMEs and cooperatives have been selected and cover a range of agribusinesses: cheese and airag, vegetable, wheat, millet, tea, fish, fibre (sheep), berry (wine production), honey, and meat (sheep, cow, pig). The top 5 largest enterprises in terms of loan amounts are for: vegetables, cow meat, dairy, and tea. 13 SMEs have received loans based on established criteria with the remaining under assessment pending availability of business plan, proof of income, verification of collateral. The 35 includes 4 women's groups and 2 herders groups (HG) (30 families per group) that converted to cooperatives. The 4 WG/Cooperatives were in the business of : vegetables (2 coops), meat (sheep) and tea. Only one of the vegetable cooperatives had received a loan. Of the 2 HG that became cooperatives both were in the meat business- 1 producing cow meat and the other pork under contract to supply a mining camp. Both the HG /Cooperatives and one of WG/ cooperatives (vegetable) has received a loan.
- Project activities have supported: capacity building/training on use of computer and business plan development for each of the 35 SMEs and cooperatives; milk hygiene training for 5 SMEs; unit cost determination 4 Cooperatives and small enterprises; experience sharing exposure visit for 8 SMEs and Cooperatives; on-line financial literacy and financial management training for 13 SMEs

and Cooperatives, as well as compliance with international standards training (HACCP) for 10 SMEs and Cooperatives.

- Noteworthy is that although 120 HGs were formed (comprising 2,800 household members) only 2 HG pursued economic activities by forming new cooperatives under the project. Reportedly, many herders join existing cooperatives in order to take advantage of the wool subsidy provided by government, they see little other benefits from cooperative membership. Many cooperatives they join engage in various income generation activities but are not agricultural production or marketing cooperatives, and are not in a position to pay dividends in the initial years of operation. Many herders find the establishment and management of their own cooperatives a challenge too hard to take on. Past missions have recommended a need for business training, role of cooperatives and their establishment. From the proceeding opportunities for consideration under AF include:
 - Grading of SMEs and cooperatives based on both economic and social objectives will enable not only targeting for capacity building support, but support access to loans and partnering arrangements.
 - On-going 'hand-holding' support will benefit from development of cadre of agribusiness development advisors (BDA) at the soum/aimag level. A roster of existing BDA trained by other projects will also prove useful.
 - Economic options are needed for HGs for both poverty alleviation and sustainable production to limit overstocking and ongoing pasture degradation.
 - More opportunities exist to connect value chain actors eg SMEs, coops and WG/microenterprises and this will benefit from greater facilitation
 - Exposure visits should be better orchestrated to benefit from lessons learned and even opportunities for market connections
 - Associations can have a strong role in market development, business advisory to members, standards and certification, support networking, R&D, capacity building, financing along the value chain. Both engaging with existing Associations and strengthening their business capacity and skills, as needed, is an opportunity, which also underpins longer-term sustainability.
 - Staff capacity at PMU should be augmented to support value chain development. Further, contracting a service provider with commodity expertise that will work also to build the capacity of value chain actors, including Associations, and local BDA should be a priority.

II. Value Chain Analysis – constraints, market demand, competitiveness, channels and prospects

1) Sectoral context and criteria for value chain selection - Agriculture accounts for nearly 20% of GDP and is dominated by livestock which account for over 85% of the sector. 30% of the Mongolian population is directly dependent on livestock as the main source of rural income, employment and food security. The sub-sector with nearly 52 million livestock (table 1), owned by some 145,000 herders, is almost entirely nomadic pastoralism. The increase of the livestock numbers is likely to be linked to the lack of restrictions or costs for pasture use as well as quantity-based pricing, not quality. This overstocking, without economically viable market options, has caused widespread pasture degradation.

Expansion of numbers is also a climate coping mechanism against extreme weather events, called dzuds. The dzud occurs roughly once each decade, and the last dzud was in 2009-10 claiming 10 million heads of livestock. And although herds are large and expanding, about 70% of the herders have subsistence level of 200 or less, with many living in poverty. The 20,000 herders, who lost their

livestock during the last 2 dzuds, account for the majority of the rural poor in and around soum and aimag centers, and UB. Despite the prominence the subsector and nearly unparalleled 'natural brand' for animal welfare and organic production, potential simplicity for traceability, it only contributes around 10% of export revenues - mostly from fibre (cashmere). However, there is considerable potential for meat and leather. Despite The remaining several challenges for export, the rapidly urbanizing represents another growing market.

Table 1. Livestock numbers

Animal	2014 (million)	2013 (million)	Increase (million)
Horse	2.90	2.53	0.37 (14.6%)
Cattle (incl. Yaks)	3.40	2.90	0.50 (17.2%)
Camel	0.35	0.30	0.03 (9.0%)
Sheep	23.20	20.10	3.10 (15.4%)
Goat	22.00	19.90	2.10 (10.5%)
Total	51.85	45.05	6.80 (15.1%)

Source: National Statistical Office of Mongolia, preliminary announcement (January,2015)

2) Horticulture - After meat and milk, potatoes is the second staple crop in the country. Diet diversification with other non-staple vegetables is a trend all over the country but while Mongolia is self-sufficient in potatoes, imports from China supply much of domestic demand. Under PMPMD vegetables is emerging as a prominent SME and had early success with a women's group that had graduated to a cooperative supplying vegetables to the soum and public system (school, hospital). Challenges here are both production and post harvest. Rural poor have also turned to harvesting wild berries, in particular seabuckthorn, a superfood which has the highest vitamin A of any plant and 15 times more vitamin C than oranges as well as other powerful antioxidants, and a main ingredient in nutraceuticals and cosmetics. Mongolia is one of the few places in the world where seabuckthorn is grown and there is a growing export market but due to practical considerations (e.g. harvest and supply) plantations of seabuckthorn are expanding and with some success with SMEs under PMPMD.

Despite the many value chain related studies that have been undertaken, very few have resulted in success on the ground. A brief overview of the value chains follow with a focus on identifying opportunities for further focus under the AF and against the criteria for investing in value chain activities outlined in Table 2. The fundamental approach for each value chain will be to identify market first then link the buyer to producer groups and cooperatives, with contracts facilitated for quality produce on the basis of medium to longterm agreements; fundamental key activities are provided in table 3. Table 6 at the end of this section, provides a summary of priority value chains for consideration and commodity focus, rationale, and proposed strategic project interventions along the value chain, with innovative activities highlighted in bold.

Table 2 – PMPMD – AF suggested criteria for value chain selection and investment

- | |
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| <ul style="list-style-type: none"> ○ Profitability and Poverty focus - Reduce poverty within the project timeframe, inclusive agribusiness particularly targeting women ○ Suitability for the biophysical resources of the priority aimag, and feasibility given potential infrastructure constraints that may be limiting given the time and financing available for AF ○ Build on success – build on proven successes from phase 1 eg organization and capacity building of value chain actors, developing government capacity to scaleout (example is facilitation of WG) ; financing mechanism supporting 'fledgling businesses/WG' to become 'bankable' and 'graduate' to next level of financing (eg ADB) and commercial ○ Market- led resilient value chains – including local and national; and with potential for export, and building on emerging value chains in current project (dairy, meat, fibre, vegetables and berries) |
|--|

- Potential to join value chain stakeholders – into production groups, cooperatives, associations to achieve economies of scale and access markets
- Leveraging potential – to address gaps and opportunities along existing value chains that can be cost-effectively addressed and where possible, to build on existing projects
- Green growth economic orientation – market driven activities promoting resilient pasture management
- Build local and national capacity for market led development and ideally capitalizes on a distinct identity or brand that potentially differentiates Mongolia's agricultural product and can command an international premium
- Economic and financial analysis – to inform selection of value chains, and targeting of value chain activities, pasture management investments and number of beneficiaries covered

Table 3 – Fundamental strategy for value chain development

- Selection of value chains and/or commodities which can be produced profitably and in a sustainable manner based on the above criteria. This will be informed by analysis undertaken during the extension period (2016-17) to inform market opportunities, profitability, investment feasibility and priority opportunities.
- Identification of private and/or public enterprise partners for the development of the priority value chains. Eligible companies would be based in Soum, Aimag or UB and other larger urban centres, using direct supplies from producers in selected areas in the country with good potential.
- Development of a draft business plan by the selected companies and including an investment plan.
- On the basis of the draft business and investment plan, review of the proposed production, quality and marketing modalities as well as the premium pricing mechanism.
- Identification, facilitation, training and financing of womens groups, herders groups, and federation as cooperatives to enable the supply chain
- Identification and financing of strategic SMEs that will be instrumental in enabling the value chain for benefit of the poor
- Contribute to the development of the agribusiness 'ecosystem' through training and capacity building of existing producer associations for the priority value chains, and build capacity for agribusiness development at the soum and aimag level through introduction of a accreditation program for Business Development Advisors and recruitment and training of additional in PMPMD and AF aimags. This will also require collaboration with leading university to build relevant skills and knowledge into agribusiness curriculum. BDA would become lead experts in value chain analysis, producer group formation, technical and skill training, business plan and investment plan development, and the promotion of business linkages. BDA could also be developed within the commercial banks to better advice clients, generate business and reduce risk.
- Implementation of financing through strategic partnerships with commercial banks to establish loan guarantee facility and agriculture credit mechanism. Establish alliance with other investors eg ADB for graduation to larger industrial loans

Value chain development builds on lessons learned from several projects, programs and initiatives (notably those financed and with implementation support from AVF, FAO, Mercy Corps, SDC, WB) and key lessons are summarized in Table 4.

Vegetable - Consumption of vegetables is growing with urbanization and changes in traditional lifestyle. After meat and milk, potatoes is the second staple crop in the country. Diet diversification with other non-staple vegetables is a trend all over the country but while Mongolia is self-sufficient in potatoes, imports from China supply much of domestic demand. As reviewed by FAO, 2016, in 2014 the sub-sector produced 164,000 Mt potato and 102,200 Mt vegetables on 23,300 ha. land. These production levels were able to satisfy 100 percent domestic demand for potato and 54 percent for vegetables. The 46 percent deficit was covered by vegetable imports mainly from China (e.g. onion, cabbage and carrot). Based on the current vegetable production situation, great opportunities exist for intensification and diversification of domestic vegetable production for import substitution aimed at attaining self-sufficiency. Potato and vegetable production involves 250 SMEs and 35,000 household farmers. Under PMPMD vegetables is emerging as a prominent SME and had early success with a women's group that had graduated to a cooperative supplying vegetables to the soum and public system (school, hospital). Owing to the short growing season, fundamental challenges of the subsector are production practices and technology, storage and basic processing and market channels which are poorly developed. Fresh vegetables produced in rural areas mainly reach urban consumers through several hands (middlemen), reducing quality and producer profitability. A lack of horizontal collaboration among small vegetable farmers, and organization within other parts of the supply chain, results in low bargaining power and limited returns and benefits. The potato value chain is a success story in the country and a useful model for development of subsector development. But even with the potato, there is limited processing and product development nor branding.

Berries - in particular seabuckthorn, which grows wild in Mongolia has market potential and has enjoyed some limited success on the export market (limited supplies to Japan, Taiwan and Korea). Seabuckthorn is a superfood which has the highest vitamin A of any plant and 15 times more vitamin C than oranges as well as other powerful antioxidants, and a main ingredient in nutraceuticals and cosmetics. Mongolia is one of the few places in the world where seabuckthorn is grown. While there is a potential expanding export market due to practical considerations (eg harvest and supply) plantations of seabuckthorn are needed to have a viable supply. Seabuckthorn plantations have had some limited success with SMEs under PMPMD. Typical plantations are .5 to 3 ha. Due to the time to establish production (it takes 5 years for production per bush to reach optimum) it should be considered as a diversification strategy. However once established, each bush produces for some 20 years.

Opportunities for product intervention in horticulture include:

- Interventions focused on production such as quality seed, irrigation, greenhouses for vegetable seedlings and production practices including soil preparation
- Storage to reduce post harvest losses and supply market during the off season when prices are highest
- Seabuckthorn production will also benefit from a focus on production technology and practices and assisting new entrants with land lease agreements
- Support for marketing including market information, contracts with wholesalers in urban areas
- Seabuckthorn, while there are established buyers for export, supply does not meet demand so the focus would be on enabling contracts for increased supply and identifying SMEs who could orchestrate outgrower model involving cooperatives/ womens groups to fill contracts.

Table 4 – Key lessons learned guiding value chain development under AF from previous or on-going projects in Mongolia

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|---|
| <ul style="list-style-type: none">• Greater ownership and potential for scaleup is achieved when facilitators for groups (Women's or herders) are seconded from government. Only in the case of WG was this the case.• SMEs unless carefully selected will have not optimally contribute to connecting the poor to the value chain• While the cooperative model is strongly promoted by the government, not all cooperatives will be successful. An analysis to understand what it takes for cooperatives to succeed, |
|---|

and conversely reason for failure, together with case studies of both is needed.

- SHG/Women's groups are recognized as legal entities in other countries eg India, and are fundamental to development. Consistently, loan repayment is well over 90% and so there is limited risk
- Business development advisors are needed at the aimag level. Mercy Corps, and other projects, trained consultants. BDA need to be carefully selected who had significant knowledge of needs of rural businesses in terms of training and technical advisory, quality standards of services and how to engage with potential business clients. While these were developed as private fee for service advisors, in nascent stages of SME development, this capacity also needs to be developed within public sector, as herders and WG not willing to pay for advisory support (at least at this stage).
- While lack of processing is often mentioned as the key investment need, nearly all of public sector installed capacity (most often at aimag center) is operating at significant under-capacity; and while many studies have called for further investment in small scale processing at soum level; a feasibility study is needed to guide further investments.
- Pasture management activities without economic incentive for herders is not sustainable. Herders need training in business basics. Forage, and indeed all productivity enhancing investments, are only sustainable when there is a remunerative market for increased meat, fibre, milk.
- Training needs to be evaluated for effectiveness in terms of its impact on people, profit, inclusive development and environment. Alternatives in training may be needed such as Farmer Field School approaches which have proven to have a high success in terms of adoption of new technologies and approaches.
- Soums are being connected to the national ICT grid, but little use is made of social media for capacity building, knowledge sharing, market information and market links.
- Knowledge sharing events are critical and named, in particular by women's groups, as vital to their empowerment and business success
- Exposure visits unless carefully planned and facilitated will have limited impact.

3) Meat value chain

The market is driven by local demand following traditional processing and with no differentiation of cuts 'meat is meat'. According to FAO stats, about 300,000 tons of meat is produced, mostly slaughtered outside the abattoir system principally during 2 times a year – mid August and November-December, the former to pay for school fees and the latter in preparation for "TsagaanSar"- Traditional Lunar New Year Holiday. 90.6 per cent of live animals and slaughtered animal meat is sold through interim traders (changes, agents) while only 6.6 percent is sold by herders, almost none through cooperatives nor herder groups. The focus of many value chain related studies has been on the international meat trade. Despite the organically produced livestock, the country has not been able to capitalize on the export market on a large scale and contributes less than 1 % of global meat trade; only about 5% % of meat is exported with value addition through packing the carcass into individual cuts to suit markets as well as heat-treated products. Currently nearly 90 % of Mongolia's meat export is to Russia, which includes canned beef meat, and the rest is made up of horse-meat to Japan, mutton (and some live animals) to the Middle-East and other countries (e.g. Brunei, China), and canned pet-food to Korea. The average export price for Mongolian meat has been in the region of \$1.00/kg which is about half the value of domestic price, half the price in China and one third of the price in Russia. and three to four times lower than what is received for premium quality meat suppliers (eg Australia, and New Zealand). A key challenge is that Mongolia is endemic for transboundary animal diseases like FMD and brucellosis and while progress has been made to establish areas free of FMD (eg western aimags Gobi-Aitai, Zavhan, Hovd, Uvs, Bayan Olgii) issues of certification, traceability and food safety remain obstacles to access higher value markets.

There is a growing demand for meat nationally due to the rapidly urbanizing population and for high quality products, in urban centers like UB and to supply the tourist trade. Urban centers have recently seen expansion of more formal retailing outlets, including supermarkets, which pay greater attention to marketing (in terms of quality of product, packaging and promotion). While the local market for high quality differentiated products is expanding, the response of suppliers has been

limited. A capitalize on both the national and export market has been lack of a joined up value chain, even fundamental contracts between suppliers and processors is lacking. And of the 26 processing plants that dot the country (primarily around UB and western aimags – see figure 1 map), all are operating considerably under capacity; about 25% are licensed for export. The Meat Processors' Association indicates there is an urgent need to remodel the meat industry. Due mainly to lack of working capital, meat companies utilise only 10-20 percent of installed capacity, which limits employment opportunities. Companies are very keen to export processed meat and meat products, but require support to attain the standards and certification required to access international markets. While animal disease has been a limitation in the past, western aimags have been free of FMD for the last 10 years, and while these aimags can export, lack of trace-back system for each animal, poor carcass quality due to breed, has left this opportunity unfilled. Several opportunities for the AF to consider which go beyond the fundamentals in table 3 include:

- Farm-gate sale on the basis of weight by providing scales and making available market prices
- Productivity improvement (breeding, feeding, disease control and improved management) that supports quality of carcass and value of hide
- Certification and skills development for local butchers to focus on food safety and separating premium cuts
- Mixed cooperatives combining women's groups with herders groups to add value to by-products (simple packaging)
- Building capacity for food safety, traceability and organic certification at the soum and aimag level
- Animal identification to enable trace-back system for carcasses
- Facilitate contracts for cooperatives to operate underutilized existing processing facilities
- Facilitate contracts for trucking to urban areas, especially empty trucks that return from soums and aimags to UB empty
- Establishment of small scale meat processing plants at the soum level with slaughtering capacity of 5 large animals and 20 small stock per day and production capacity of 100 kg of sausage and processed meat products

4) Fibre and leather chain

Fibres, with a focus on cashmere – Natural fibres are produced by different animals (cashmere from goats, yak hair, sheep wool, camel hair, horse hair). Mongolian has ranks 2nd in the global market for cashmere accounting for 15%, after China. Of the total annual production of about 3000 tons, China purchases 75% which is sold undifferentiated and potentially resold as produced in China. As with many other raw materials, cashmere prices are volatile, which directly affects herder incomes and jobs. Although, there are over 26 companies buying cashmere, 18 buy directly from herders and the subsector is dominated by 4 major companies (Gobi, Eermel, Goyo and Altai Cashmere). Regardless of direct purchases, supply of raw fibre does not have any quality standards, nor premiums in place, cashmere is paid by weight with considerable variation in freedom from dirt. A market for cashmere and ongoing seasonal cashflow has prompted a dramatic expansion in numbers of cashmere goats which is also a key contributing factor to pasture degradation. While some projects have aimed to diversify to other fibres by promoting camel and yak hair, providing goat herders with premiums for environmentally friendly produced cashmere through certification for sustainable pasture management could be a transformative option. Such a program has been recently initiated on a pilot basis by AVSF.

Hides and skins At the industrial processing level, Mongolia is mainly a provider of semi-processed hides and skins (wet blue) and is lacking the production of high value added products. The few companies that produce consumer goods are often using imported leather from Korea and Turkey. About 50 SMEs are in the business of primary processing but there is a very small share of the enormous number of hides available processed into finished leather goods locally. Most Mongolian hides and skins are exported to China, either raw (less than 10%) or as semi-processed wet blue hides and skins (90%).

Herders have insufficient access to veterinary services and lack skills and knowledge as a result, hides and skins are damaged by ticks and skin diseases and lack proper preparation (handling, salting, drying, transport). The collection of hides and skins from herders is in the hands of informal middlemen. Farmers receive approximately 50% of the factory gate price and are therefore not interested in paying veterinary services and inputs. Some dynamic leather enterprises including European buyers are interested in structuring their own supply chains, siting animal welfare, organic production and potential to establish an effective traceability system as key marketing advantages. New tanning technologies that are environmentally friendly are available in Europe and could be introduced into Mongolia as part of the environmentally friendly supply chain.

Although PMPMD had little involvement in either of these chains, one cooperative emerged in the production of very high quality felt and leather products (from imported leather). With further design assistance and assistance to establish an online presence, this could be a very lucrative business.

Opportunities for the AF to consider include:

- On a pilot basis, collaborate with AVSF to supply European buyers in Italy and France with high quality cashmere sourced from herders that meet basic pasture management criteria.
- Adopt criteria and M&E protocols developed by AVSF to certify herders for pasture management.
- Train herders and improve combing and fibre sorting to the standard requirements, which should be openly discussed and agreed with the processors.
- Introduce grading system that would pay herds a differential for clean cashmere and provide them with basic technology (eg sheets to cover ground when combing, clean bags) and training
- Breed improvement advisory support to identify and source quality bucks.
- Organizing veterinary services for farmers to improve hide quality and paying premium prices for hides and skins of animals that have received an adequate veterinary treatment;
- Training to improve handling, slaughtering and primary processing (drying, salting).

5) Dairy value chain

The country has perhaps the most diverse sources of milk and produces nearly 600 m litres annually with over 65% from cattle and yak and the remaining from horses and camels. The per capita milk consumption of approximately 135 kg per annum, which is quite high by Asian and even global standards. Domestic milk production is highly seasonal and marketable milk surpluses are generated for a short period of the year, from May to August when milk prices are low. Traditional dairy products are critical to food security and together with meat they remain the essential food for nomadic families during the long, cold autumn-winter-spring 'empty' period (October–May). The dairy industry is somewhat focused in peri-urban area of UB and Selenge and Darhai-Uui aimags (see figure 1 for map) and there are some 20 milk processing plants with a capacity of 1 to 2 tons per day. The largest dairy plant (Suu) is processing 40 tons per day and currently modernizing for further expansion. In Aimag and Soum centres, a small number of milk processing units have emerged with a capacity to process 100-300 litres per day. These units are producing a range of dairy products including pasteurized milk, yoghurt, cheese and other traditional dairy products. They are generally working with a small number of milk suppliers – about 10.

The dairy sector has also benefited from financing to promote public and private investment and as reviewed recently by FAO (table 5) it seems everything is in place for a viable industry on the processing side at least and within the emerging dairy 'corridor' (see figure 1 for locations). Mongolian brands are still outpriced by imported brands from Russia and speciality cheeses from Europe, and until recently much of the fluid milk supply was reconstituted from powder imports. While that is considerable medium to large scale installed capacity, some of these facilities at aimag level are not operating due to lack of working capital and lack of sufficient supply. Given the perishability of milk, the sector has limited potential beyond these established areas although niche products are a possibility. An opportunity is to produce cheese which has a relatively long shelf life and as demonstrated by the Mongolian Artisanal Cheese Producers Union, the country is producing globally competitive cheeses.

Depending on what aimags are targeted by AF, development of small dairy processing facilities at the soum level, linked to highend cheese production for niche markets both natioanlly and internationally could be an opportunity. Small processing units owned and operated by mixed cooperatives could also supply soum and aimag public sector (schools and hospitals). Given the diversity of milk sources, Mongolia also could explore niche markets for milk in cosmetic products.

Several opportunities for AF to consider include:

- Productivity improvements (breed improvement, feeding, disease control and management including feed storage)
- Clean milk training and payment based on quality
- Building capacity for food safety, traceability and organic certification at the soum and aimag level
- Small dairy processing units at soum level with production capacity up to 500 litres
- Mixed cooperatives combining women’s groups with herders groups for milk supply
- Small dairy processing units at soum level with production capacity up to 500 litres
- Facilitate contracts for cooperatives to operate underutilized existing processing facilities

Table 5 – Recent developments in the dairy industry (source FAO, 2016)

In 2013 from accrued funds sold under the GoM Chinggjs bond, MNT 51.9 billion (EUR 22.7 million)¹⁷ was allocated for loans to the dairy sub-sector with 8 percent interest (compared with the then best bank lending rate of 24 percent). The beneficiaries were: (i) dairy farms and processors serving Ulaanbaatar, Erdenet and Darkhan cities from the surrounding intensive dairy industry zones and (ii) SME milk processors from rural *aimags* procuring milk from pastoral husbandry zones. Two large companies obtained loans totalling MNT 5.5 billion (EUR 2.4 million) to establish plants to process 60 mt and 90 mt milk daily in Darkhan and Ulaanbaatar respectively; six dairy farms received MNT 6.1 billion (EUR 2.6 million) to boost milk production; and MNT 590 million (EUR 0.26 million) was lent to five small-scale dairies operating in remoter *aimags*.

Meanwhile, major private sector players in the beverage industry started to make substantial investments in the dairy sub-sector. The APU Shareholding (SH) company invested MNT 46.0 billion (EUR 15.7 million) to establish a plant to process 150 tons of milk daily in Ulaanbaatar and a large dairy farm with 200 cows. The Monfresh Co. Ltd received a loan from the Asian Development Bank (ADB) and invested in: (i) a 200 cow dairy farm in Batsumber near Ulaanbaatar and (ii) five milk cooling centres within a 200 km radius of Ulaanbaatar to collect milk from herders and small farmers. Previously the business model of the companies was based on reconstituting imported milk powder. The SUU SH Company, the former privatised state dairy with the oldest and largest dairy plant in the country invested in a 300 cow dairy farm in Zuunhaara (Mandal *soum*), some 160 km north of Ulaanbaatar. These recent investments have resulted in great competition to buy fresh quality milk from farmers surrounding large urban areas, i.e. the intensive dairy zone.

The farm gate price for one litre of raw milk is currently MNT 450-500 (24-33 US cents) in summer and a relatively high MNT 900-1,000 (60-67 US cents) in winter when milk production drops. The Khentii, Tov, Selenge, Orkhon, Darkhan-Uul *aimags* have thus only recently become city milk supplying zones, almost 25 years after the collapse of the dairy sub-sector following the transition from state to market economy.

The GoM recently upgraded the food sector regulatory framework. New laws on food safety came into force in March 2013. Milk was added to the list of strategic staple commodities that already includes wheat, seeds, flour, meat and water. Since February 2013 the sale of

unprocessed milk by hand in public areas in Ulaanbaatar is prohibited by the Capital Citizen Representative Meeting resolution and dairy imports are managed through a quota system. In 2014 eight companies received permission to import just 3,395 mt milk powder and 250 mt packed processed liquid milk, well down from previous years and equal to just 5 percent of national milk production. Food safety standards and regulations are now applied along the entire dairy food chain from farm to consumer. It seems that everything is in place for dairy industry take-off. However there is still much to be done to fully operationalise these gains.

Technical Vocational Education Training (TVET) Colleges in some provinces have received support from the Millennium Challenge Account Project, Swiss Development Programmes (SDC) and CU in recent years. Some have classrooms and pilot milk processing units to train dairy operators, farmers and herders, including youth and women, on subjects related to pasture-based milk production and primary milk processing and collection. The National Dairy Training Centre in Ulaanbaatar established in 2006 with FAO assistance conducts TVET training and specialist higher education at the central level. It is necessary to train a team of motivated, active young professionals at the University of Agriculture, the Mongolian University of Science and Technology (MUST) and the Institute of Technology in modern dairy technology, GMPs and Hazard Analysis and Critical Control Points (HACCP) quality assurance systems, and GDWPs to serve the dairy and food industries.

III. Macro-economic policies for rural agribusiness development

The country's development strategy recognizes that despite the boon in the mining sector and now bust due economic crisis there is acute need to develop a vibrant agriculture sector on which over 30% of the Mongolian population is directly dependent and traditionally the main source of rural income, employment and food security. There are several government policies and initiatives supporting inclusive agribusiness development, which is also environmentally sustainable.

The State Policy on Food and Agriculture (2016-2025) aims to develop the food and agriculture sector by improving productivity, processing, market development to improve the competitiveness of the sector and commits increase state and local government funding to food and agriculture. Ultimately diversifying the economy, reducing poverty, creating jobs, and provide the entire nation with secure supplies of accessible nutritious and safe food to enable healthy livelihoods. The Professional Inspection Agency that operates from the aimag centers, provides the important foundation for food safety inspection and is a foundation on which to further build capacity including for organic certification. With an eye on meat exports a key priority will be to establish animal disease free zone according to international standards (OIE). The government policy support for organizing producers into cooperatives, does provide a fundamental step towards traceability, but a unique animal identification system will be needed to enable a trace-back system at the animal level, which is required to access higher value export markets. The Project will establish partnership with planned or on-going projects (including Czech republic or WTO-funded projects) which are introducing or strengthening animal identification system (different status by region) so that the project target groups can benefit from improved traceability.

With the recent GoM recognition of every herder family as a business entity registration and certification is provided. This is another conducive policy that enables traceability and access to finance.

The establishment of GoM funded Veterinary and Breeding Units at each soum in 2010 is a fundamental entry to building production capacity and market access and comprise a livestock specialist, veterinarian, and SME specialist for livestock and crop production. This provides a good foundation for supporting priority value chains and will also be targeted for further training and skills development.

The Ministry of Industry has developed a Cluster Development Policy which will inform value chains to be prioritized by aimag; this as such will be a fundamental driver to inform AF prioritization.

The National Green Development Strategy among other supports a productivity focus and addresses some of the fundamental challenges the country faces to climate change.

The recent policy decision which enable women’s groups to participate in public bidding for contracts to supply , for example, schools and hospitals, is significant given the considerable market potential this represents at the local soum and aimag level. It is hoped that through evidence-based analysis of results of PMPMD and other country experiences that the Min of Finance will recognize womens groups as legal entities.

Recent government investment to connect all soum for internet access has fundamental benefits to develop viable value chains supporting networking, knowledge sharing, training, capacity building and marketing.

IV. Summary of emerging value chains, rationale and proposed interventions

VC	Commodity focus	Target market	Rationale	Indicative interventions
Fibre	cashmere	Export (niche, high end eg Europe)	<p>Fundamental to incentivize and build economic drivers to management of pastures in the commodity that is causing the most damage.</p> <p>Opportunity to establish MIM in highend ‘Responsible Production’ brand</p> <p>Innovative & would be trialed on pilot basis in 1 aimag</p>	<p>Marketing – link international buyer to cooperatives and establish contract</p> <p>Production – cooperatives of responsible herders, grading and criteria for sustainable pasture management;</p> <p>Processing - Collection& grading</p>
Dairy	Cheese Camel milk	National and export	<p>Cheese (yak, goat, sheep, camel, cow) provides an economic option for herders and potential for women’s groups to engage in viable business option. The Mongolian Artisian Cheese Association is particularly strong and well established and buyer has been identified seeking access to supply chain. Cheese</p> <p>Dehydrated camel milk is a key ingredient to luxury cosmetics. Camel milk provides economic option for herders, diversification from goat production which is devastating pastures. Potential buyer has been identified and is seeking access to supply chain.</p> <p>Neither cheese nor dehydrated camels milk is constrained by transport issues as both can be stored for several days, without quality being compromised.</p>	<p>Marketing – Link national and international buyer to cooperative and establish contract. For example, L’Oreal has already expressed interest in access to camel milk.</p> <p>Production – SME linked with cooperative comprised of herder groups to provide supply of milk. Training to support clean milk.</p> <p>Processing – Collection and testing for milk hygiene. Small dairy processing equipment including dehydration for camel milk. Training on milk processing. Support for grading, quality control, organic certification and traceability.</p>

Meat	Sheep/cattle	National and export	<p>Options to capture significant margins for herders and small scale processors (mixed cooperatives who would undertake processing) through grading, payment on weight, butchering to separate high quality premium cuts and processing of byproducts.</p> <p>The above together with certification/traceability and potentially further processing would enable access to export markets</p> <p>Responsible pasture management incentivized as current payment based on animal promotes number expansion</p>	<p>Marketing – contract with urban wholeseller, hotels, restaurants for quality products. Pay herders on basis of quality and weight of animal</p> <p>Production – organize cooperatives, quality certification based on food safety/health testing. Pasture management investments</p> <p>Processing – facilities investment, carcass grading, butcher training to separate high grade cuts, byproducts processing. Support for grading, quality control, organic certification and traceability.</p>
Vegetables	non potatoes	Local and national	<p>Increasing demand & option to supply public systems (schools, hospitals) & super & local markets</p> <p>Nutrition, diet diversity</p> <p>Income generation for women</p>	<p>Marketing – contracts with wholesalers/ urban supermarket chain (eg Orgil), contract with public distribution system; upgrade of local market, Transport contracts to urban markets.</p> <p>Production – organize producers, training, provide inputs seed, irrigation, greenhouses</p> <p>SMEs for input supply at aimag</p> <p>Processing – grading, storage, processing (packaging). Quality testing, certification and branding</p>
Berry	Sebuckton	Export	<p>Growing export demand. Niche market for ‘superfood’ that is leading source of Vit A and C and one of only 2 known sources of Omega 7.</p>	<p>Marketing – Link with international buyers namely from Japan, Taiwan, Korea</p> <p>Production – establish women groups , coops and invest in SMEs that will engage in contracts with WG and coops. Provide package of technology, training and financing.</p> <p>Processing –Invest in SME to expand, upgrade processing. Support for grading, quality control, organic certification and traceability.</p>

Appendix II. Project Costs and Financing

A. Main Assumptions: Additional Financing

Main Assumptions: Additional Financing

- Contingencies:** Physical contingencies have been applied on specific items such as civil works at 5% and salaries at 2.5%. Price contingencies at 7.5% have been applied on all items except on Grants and subsidies, credit and funds etc. As the current domestic inflation rate is 7.5%, price contingencies assumed at constant rate of 7.5% for all domestic prices. Foreign inflation rate has been assumed at 2%. All unit costs are input in USD. Detailed cost estimates by component are provided at the end of text in two parts: (i) Part-A for one year extension of Phase-I programme using disbursement categories as in current Financing Agreement and (ii) Part-B for Additional Financing.
- Exchange rates:** The initial exchange rate for the analysis has been set at MNT 2050 to one USD, the rate prevailing at the time of data collection (April 2016). Exchange rates during implementation phase and the foreign exchange rates forecasts for the Project costs estimates, and conversions from current MNT values into USD are calculated using current exchange rate. Both foreign and local inflation rates are compounded at mid-year.
- Taxes and duties:** Taxes and duties have been estimated using the prevailing prices in April 2016. All items, which contained implicit duties and taxes, have accordingly been accounted for. A tax rate of 10% has been assumed for goods and equipment, office operations costs, service providers' contracts, civil work, training etc. For vehicles a tax rate of 8% has been assumed. Prevailing VAT rate is 10%.
- Project life and fiscal year:** The Project life is 4 year starting in January 2017 and expected to be completed in December 2020. Cost estimates for the project period have accordingly been calculated. Fiscal year for Mongolia is from January to December.
- Unit costs:** Unit costs together with physical units have been identified for most items and these are input in USD. In certain instances a lump sum allocations have been computed so as to give flexibility in procurement or for the implementation of such activity/task. It is noted that *"all unit costs are indicative and are used for the purposes of estimating the overall project costs. These are, therefore, subject to changes and revision during project implementation and also at the time of preparing Annual Work Plans and Budgets"*.
- Financiers:** The Project will be financed by the following financiers: (i) IFAD, (ii) Government of Mongolia, (iii) Ministry of Finance, (iv) Ministry of Labour and (v) Banks.

B. Project Costs and financing for Additional Financing

- Total project costs:** Total Project Costs is estimated at USD 11.38 million. This is inclusive of all contingencies, IFAD loan of USD 9.06 million, USD 0.47 million equivalents by Banks, 0.67 million by Ministry of Finance, 0.24 million by Ministry of Labour and counterpart funding from the government in the form of waiver of taxes and duties. See Table 1 below.

Table-1: Total Project Costs by Financiers

	GOM		IFAD		MOF		MOL_EGF		Banks		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. Pasture Management and climate change adaptation	538	11.4	4,188	88.6	-	-	-	-	-	-	4,726	41.4
2. Market Development	249	5.6	2,812	63.1	679	15.2	243	5.5	473	10.6	4,455	39.1
3. Project Management & Enabling environment for business development	163	7.3	2,060	92.7	-	-	-	-	-	-	2,224	19.5
Total PROJECT COSTS	950	8.3	9,060	79.4	679	6.0	243	2.1	473	4.1	11,404	100.0

- Project costs by component:** Project costs are organized into THREE components as per Original PDR: (i) Pasture management and climate change adaptation (42% of total base costs); (ii) Market development (38% of total baseline costs); (iii) Project Management and enabling environment for business development (20% of estimated baseline costs). Project baseline costs together with contingencies are summarised in Table 2 below

Table-2: Total Project Costs by Project Components

Mongolia PMPMD_Phase II Components Project Cost Summary		(MNT Million)					(US\$ '000)				
					% Foreign Exchange	% Total Base Costs				% Foreign Exchange	% Total Base Costs
		Local	Foreign	Total			Local	Foreign	Total		
1. Pasture Management and climate change adaptation	6,123	2,492	8,615	29	40	3,044	1,240	4,284	29	40	
2. Market Development	7,784	957	8,741	11	40	3,820	476	4,296	11	40	
3. Project Management & Enabling environment for business development	4,211	169	4,380	4	20	2,074	84	2,158	4	20	
Total BASELINE COSTS	18,118	3,619	21,737	17	100	8,937	1,801	10,738	17	100	
Physical Contingencies	300	111	411	27	2	149	55	204	27	2	
Price Contingencies	1,843	649	2,492	26	11	342	121	463	26	4	
Total PROJECT COSTS	20,261	4,379	24,640	18	113	9,428	1,977	11,404	17	106	

9. **Investment and Recurrent costs:** Total investment costs are estimated at USD 9.46 million and these accounts for about 83.2% of the total project costs and the balance, USD 1.91 million are recurrent costs. Civil works account for about 36.2%, followed by goods, services and inputs for 19.8%, credits 15.8% and training and workshop 8.9% of the total project costs. The recurrent costs are incremental salary and allowances (13.5%) and office operating costs (3.3%) account for 16.8% of the total estimated cost.

10. **Project costs by Disbursement Accounts:** Disbursement accounts, derived from the expenditure accounts described above, provide the basis for determining the financing plan for the Project. In estimating the semester disbursement, a ratio of 5:5 has been assumed between first and second semester for each fiscal year. In accordance with IFAD IC 2013, the disbursement accounts for Additional Financing have been organised into following categories as presented in Table 3 below.

Table-3: Disbursement Accounts by Financiers

Mongolia PMPMD_Phase II Disbursement Accounts by Financiers (US\$ '000)		GOM		IFAD		MOF		MOL_EGF		Banks		Total		Duties & Taxes
		Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
		1. Civilworks	412	10.0	3,710	90.0	-	-	-	-	-	-	-	4,122
2. Vehicles, equipment and materials	14	15.0	77	85.0	-	-	-	-	-	-	-	90	0.8	14
3. Goods, services and inputs	338	15.0	1,762	78.1	156	6.9	-	-	-	-	-	2,256	19.8	338
4. Training and workshop	104	10.0	935	90.0	-	-	-	-	-	-	-	1,039	9.1	104
5. Credit	-	-	1,085	60.3	-	-	243	13.5	473	26.3	-	1,800	15.8	-
6. Project grants	18	10.0	162	90.0	-	-	-	-	-	-	-	180	1.6	18
7. Staff salaries and allowances	26	1.7	1,100	71.7	409	26.7	-	-	-	-	-	1,535	13.5	26
8. Operations and maintenance	38	10.0	230	60.1	114	29.9	-	-	-	-	-	383	3.4	38
Total PROJECT COSTS	950	8.3	9,060	79.4	679	6.0	243	2.1	473	4.1	-	11,404	100.0	950

11. **Project costs by Procurement Accounts:** Procurement accounts are identical to those of expenditure accounts except that all accounts are treated under one group whereas the expenditure accounts are grouped into two: namely investment and recurrent costs accounts by default. All three costab accounts are maintained in identical format in order to get error-free results. Proposed procurement arrangements by procurement method are summarised in Table 4 below.

Table-4: Procurement Arrangements by Procurement Methods

Mongolia PMPMD_Phase II Procurement Arrangements (US\$ '000)	Procurement Method								Total
	Local		Direct		Direct		Other	N.B.F.	
	Competitive Bidding	Shopping	Local Shopping	Direct Contracting	Purchase/Negotiations/Single Tender	Financial Intermediaries			
A. Civilworks	4,122 (3,710)	-	-	-	-	-	-	-	4,122 (3,710)
B. Vehicles, equipment and materials	-	90 (77)	-	-	-	-	-	-	90 (77)
C. Goods, services and inputs	-	-	2,256 (1,762)	-	-	-	-	-	2,256 (1,762)
D. Training and workshops	-	-	-	1,039 (935)	-	-	-	-	1,039 (935)
E. Credit	-	-	-	-	-	1,800 (1,085)	-	-	1,800 (1,085)
F. Project grants	-	-	-	-	180 (162)	-	-	-	180 (162)
G. Staff salaries and allowances	-	-	-	-	-	-	1,535 (1,100)	-	1,535 (1,100)
H. Operations and maintenance	-	-	383 (230)	-	-	-	-	-	383 (230)
Total	4,122 (3,710)	90 (77)	2,639 (1,992)	1,039 (935)	180 (162)	1,800 (1,085)	1,535 (1,100)	-	11,404 (9,060)

Note: Figures in parenthesis are the respective amounts financed by IFAD

Procurement of goods and services financed by the IFAD loan will be made in accordance with IFAD procurement regulations.

C. Project Financing for Additional Financing

12 **Financing Plan:** The proposed financiers for the Project are IFAD, the Government of Mongolia, Banks, Ministry of Finance and Ministry of Labour. IFAD will finance about USD 9.06 million about 79% of total project costs, the government counterpart funding will be about USD 0.95 million equivalents including taxes, Banks will finance about 0.47 million. IFAD Loan is granted on blend terms and shall be subject to interest on the principal amount outstanding at a fixed rate of 1.25 per cent and shall have a maturity period of twenty five (25) years, including a grace period of five (5) years, and in addition a service charge of 0.75 per cent, starting from the date of approval by the IFAD Executive Board.

13 The PMU or the Lead Programme Agencies may procure the vehicles, motorcycles, and computers and also the Service Providers' Services. The procurement of all other goods, civil works and services financed by the IFAD financing will be the responsibility of the respective implementing agencies. Materials, labour and inputs will be procured through respective community organisation using the procurement by community participation. Inputs used by project groups for production purposes will be purchased by the group using grant funds from the project.

Detailed Cost Tables:

PART-A: ONE YEAR EXTENSION OF PHASE-I PMPMP

Mongolia
 PMPMD_Phase 1
 Table 1.1. Pasture Management

Detailed Costs	Unit	Quantities			Unit Cost (MNT '000)	Unit Cost (US\$)	Base Cost (US\$ '000)			Totals Including Contingencies (US\$ '000)			Expenditure Account
		2016	2017	Total			2016	2017	Total	2016	2017	Total	
I. Investment Costs													
A. Pasture herder coop support													
PHG coop investments(private) /a	coop	-	15	15	35,000	17,073	-	256.1	256.1	-	256.1	256.1	GRANT_EA
Service provider contract /b	lumpsum	0.25	0.75	1	120,000	58,537	14.6	43.9	58.5	15.2	49.0	64.1	SPC_EA
Subtotal							14.6	300.0	314.6	15.2	305.1	320.2	
B. Fund support to PHGs /c													
Credit support to PHGs	lumpsum						-	116.0	116.0	-	116.0	116.0	GRANT_EA
Total							14.6	416.0	430.6	15.2	421.0	436.2	

/a for investments in collection points, storage, pre-processing

/b For PHG coop formation, capacity building etc

/c Only some 25 PHGs are supported, 50% by IFAD and balance from RF resources with banks

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Mongolia

PMPMD_Phase 1

Table 1.2. Climate change adaptation

Detailed Costs

	Unit	Quantities			Unit Cost (MNT '000)	Unit Cost (US\$)	Base Cost (US\$ '000)			Totals Including Contingencies (US\$ '000)			Expenditure Account
		2016	2017	Total			2016	2017	Total	2016	2017	Total	
I. Investment Costs													
A. Pasture management improvement													
Hay & fodder improvement (public investment)	soum	-	1	1	350,000	170,732	-	170.7	170.7	-	187.8	187.8	TMI_EA
Risk fund	lumpsum	1	-	1	75,000	36,585	36.6	-	36.6	36.6	-	36.6	GRANT_EA
Improvement of water sources (public investment) /a	soum	-	1	1	350,000	170,732	-	170.7	170.7	-	197.3	197.3	CW_EA
Investments to improving local breeds (public investments)	lumpsum	-	1	1	100,000	48,780	-	48.8	48.8	-	48.8	48.8	GRANT_EA
Additional public investments(tbd)	lumpsum	-	1	1	150,000	73,171	-	73.2	73.2	-	84.6	84.6	CW_EA
Subtotal							36.6	463.4	500.0	36.6	518.5	555.1	
B. Service provider contracts													
Soum PM & CC strategy development	lumpsum	-	1	1	292,625	142,744	-	142.7	142.7	-	159.2	159.2	SPC_EA
Hay & fodder impact assessment guidelines	lumpsum	-	1	1	51,250	25,000	-	25.0	25.0	-	27.9	27.9	SPC_EA
Soum training /b	lumpsum	-	1	1	65,344	31,875	-	31.9	31.9	-	35.6	35.6	SPC_EA
Bagh training	lumpsum	-	1	1	30,550	14,902	-	14.9	14.9	-	16.6	16.6	SPC_EA
Revolving fund management	lumpsum	-	1	1	6,688	3,262	-	3.3	3.3	-	3.6	3.6	SPC_EA
Subtotal							-	217.8	217.8	-	242.9	242.9	
Total							36.6	681.2	717.8	36.6	761.4	798.0	

\a training, management, marketing, production & TA support

\b On pasture management, CC strategy, capacity building & impact assessment

MONGOLIA
 Project for Market and Pasture Management Development (PMPMD)
 Additional Financing Report

Mongolia													
PMPMD_Phase 1													
Table 2.0. Market Development													
Detailed Costs													
	Unit	Quantities			Unit Cost	Unit Cost (US\$)	Base Cost (US\$ '000)			Totals Including Contingencies (US\$ '000)			Expenditure Account
		2016	2017	Total	(MNT '000)		2016	2017	Total	2016	2017	Total	
I. Investment Costs													
A. Commodity analysis													
Studies	Lumpsum	5	-	5	24,600	12,000	60.0	-	60.0	62.3	-	62.3	CBS_EA
WGs activities impact & financial assessment	Lumpsum	-	1	1	61,500	30,000	-	30.0	30.0	-	33.5	33.5	CBS_EA
Subtotal							60.0	30.0	90.0	62.3	33.5	95.7	
B. Package of financial & non-financial support to 10 SMEs													
Training	lumpsum	0.5	0.5	1	41,000	20,000	10.0	10.0	20.0	10.4	11.0	21.4	TMI_EA
Credit support	lumpsum	-	-	-	-	-	-	100.0	100.0	-	100.0	100.0	LOANS_EA
Subtotal							10.0	110.0	120.0	10.4	111.0	121.4	
C. Productive investments for cooperatives													
credit support to cooperatives	lumpsum	-	15	15	51,250	25,000	-	375.0	375.0	-	375.0	375.0	LOANS_EA
D. LFG sub-component													
Knowledge management	lumpsum	-	1	1	41,000	20,000	-	20.0	20.0	-	22.0	22.0	TMI_EA
Information	lumpsum	0.2	0.55	0.75	20,500	10,000	2.0	5.5	7.5	2.1	6.0	8.1	TMI_EA
Subtotal							2.0	25.5	27.5	2.1	28.0	30.1	
Total Investment Costs							72.0	540.5	612.5	74.8	547.5	622.3	
II. Recurrent Costs													
A. LGF sub-component /a													
1. Staff salary													
Manager	Pers_year	0.25	0.75	1	60,270	29,400	7.4	22.1	29.4	7.4	22.1	29.4	SSA_EA
Loans officer	Pers_year	0.25	0.75	1	55,350	27,000	6.8	20.3	27.0	6.8	20.3	27.0	SSA_EA
Value chain coordinator	Pers_year	0.25	0.75	1	51,250	25,000	6.3	18.8	25.0	6.3	18.8	25.0	SSA_EA
VC Assistant	Pers_year	-	0.5	0.5	30,750	15,000	-	7.5	7.5	-	7.5	7.5	SSA_EA
Driver	Pers_year	0.25	0.75	1	16,400	8,000	2.0	6.0	8.0	2.0	6.0	8.0	SSA_EA
Social insurance	Pers_year	0.25	0.75	1	20,234	9,870	2.5	7.4	9.9	2.5	7.4	9.9	SSA_EA
Subtotal							24.8	82.0	106.8	24.8	82.0	106.8	
2. Other operating costs													
communication & administration	year	-	1	1	34,850	17,000	-	17.0	17.0	-	17.0	17.0	SSA_EA
Travel allowance	year	-	1	1	14,350	7,000	-	7.0	7.0	-	7.0	7.0	SSA_EA
Vehicle O&M	year	-	1	1	13,325	6,500	-	6.5	6.5	-	6.5	6.5	SSA_EA
Subtotal							-	30.5	30.5	-	30.5	30.5	
Total Recurrent Costs							24.8	112.5	137.3	24.8	112.5	137.3	
Total							96.8	653.0	749.8	99.6	660.0	759.5	

1a All LGF expenditures to be met by MOF out of interest earned from Deposits

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Mongolia													
PMPMD_Phase 1													
Table 3.0. Project management													
Detailed Costs													
Unit	Quantities			Unit Cost	Unit Cost (US\$)	Base Cost (US\$ '000)			Totals Including Contingencies (US\$ '000)			Expenditure Account	
	2016	2017	Total	(MNT '000)		2016	2017	Total	2016	2017	Total		
I. Investment Costs													
A. PMO office Ulaan Baatar													
1. Office equipment													
Furniture	set	0.75	-	0.75	3,075	1,500	1.1	-	1.1	1.2	-	1.2	VAE_EA
2. Audit	lumpsum	-	1	1	10,250	5,000	-	5.0	5.0	-	5.5	5.5	TMI_EA
3. Monitoring and evaluation													
Translations	lumpsum	-	1	1	15,375	7,500	-	7.5	7.5	-	8.2	8.2	TMI_EA
M&E of Ministries	lumpsum	-	1	1	6,150	3,000	-	3.0	3.0	-	3.3	3.3	TMI_EA
Project Steering committees	lumpsum	-	1	1	5,125	2,500	-	2.5	2.5	-	2.7	2.7	TMI_EA
Annual Progress Report	lumpsum	-	1	1	42,025	20,500	-	20.5	20.5	-	22.5	22.5	TMI_EA
Subtotal													
							-	33.5	33.5	-	36.8	36.8	
4. Knowledge management													
Documentary film	lumpsum	-	1	1	34,850	17,000	-	17.0	17.0	-	18.7	18.7	TMI_EA
Total Investment Costs							1.1	55.5	56.6	1.2	61.0	62.2	
II. Recurrent Costs													
A. Staff salaries													
Director	Pers_year	0.25	0.75	1	62,013	30,250	7.6	22.7	30.3	8.0	25.9	34.0	SSA_EA
Accountant	Pers_year	0.25	0.75	1	56,375	27,500	6.9	20.6	27.5	7.3	23.6	30.9	SSA_EA
Coordinator (Pasture management)	Pers_year	0.25	0.75	1	51,250	25,000	6.3	18.8	25.0	6.6	21.4	28.1	SSA_EA
Coordinator (Market development)	Pers_year	0.25	0.75	1	51,250	25,000	6.3	18.8	25.0	6.6	21.4	28.1	SSA_EA
Prrocurment officer	Pers_year	0.25	0.75	1	41,000	20,000	5.0	15.0	20.0	5.3	17.1	22.5	SSA_EA
M&E officer	Pers_year	0.25	0.75	1	45,100	22,000	5.5	16.5	22.0	5.8	18.9	24.7	SSA_EA
Driver	Pers_year	0.25	0.75	1	18,922	9,230	2.3	6.9	9.2	2.5	7.9	10.4	SSA_EA
Social insurance	Pers_year	0.25	0.75	1	39,258	19,150	4.8	14.4	19.2	5.1	16.4	21.5	SSA_EA
Subtotal							44.5	133.6	178.1	47.4	152.7	200.1	
B. Operating costs													
Communication & administration	year	0.25	0.75	1	48,175	23,500	5.9	17.6	23.5	6.2	20.1	26.4	OPM_EA
Travel allowance	year	0.25	0.75	1	20,808	10,150	2.5	7.6	10.2	2.7	8.7	11.4	OPM_EA
Vehicle O&M	year	0.25	0.75	1	22,755	11,100	2.8	8.3	11.1	3.0	9.5	12.5	OPM_EA
Subtotal							11.2	33.6	44.8	11.9	38.4	50.3	
Total Recurrent Costs							55.7	167.2	222.9	59.3	191.1	250.4	
Total							56.8	222.7	279.5	60.4	252.1	312.6	

SUMMARY TABLES FOR PHASE-I

Mongolia PMPMD_Phase 1 Disbursement Accounts by Financiers (US\$ '000)														
	GOM		MoF		IFAD		GEF		Beneficiaries		Total		Duties & Taxes	
	Amount	%	Amount	%	Amount	%	Amount	%	%	Amount	%	Amount	%	
1. Civilworks	28.2	10.0	-	-	253.7	90.0	-	-	-	-	-	281.9	12.2	28.2
2. Vehicles and equipment	0.2	15.0	-	-	1.0	85.0	-	-	-	-	-	1.2	0.1	0.2
3. Tools, materials and inputs	45.1	15.0	-	-	237.1	78.9	18.2	6.1	-	-	-	300.4	13.0	45.1
4. Group formation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Capacity building, studies	9.6	10.0	-	-	-	-	86.1	90.0	-	-	-	95.7	4.1	9.6
6. Service Providers contracts	30.7	10.0	-	-	229.4	74.7	47.0	15.3	-	-	-	307.0	13.3	30.7
7. Value chain management	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8. Loans	-	-	-	-	400.0	84.2	-	-	-	75.0	15.8	475.0	20.6	-
9. Project grants	45.7	10.0	-	-	411.7	90.0	-	-	-	-	-	457.4	19.8	45.7
10. Loan guarantees	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11. Field & management staff	5.7	1.7	67.3	19.9	264.3	78.4	-	-	-	-	-	337.4	14.6	5.7
12. Operations and maintenance	5.0	10.0	-	-	45.2	90.0	-	-	-	-	-	50.3	2.2	5.0
Total PROJECT COSTS	170.2	7.4	67.3	2.9	1,842.5	79.9	151.3	6.6	-	75.0	3.3	2,306.3	100.0	170.2

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Components by Financiers

(US\$ '000)

	GOM		MoF		IFAD		GEF		Beneficiaries		Total		Duties & Taxes	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%		
A. Pasture Management and Climate Change Adaptation														
Pasture Management	43.6	10.0	-	-	392.6	90.0	-	-	-	-	-	436.2	18.9	43.6
Climate Change Adaptation	89.2	11.2	-	-	661.8	82.9	47.0	5.9	-	-	-	798.0	34.6	89.2
Subtotal	132.8	10.8	-	-	1,054.4	85.4	47.0	3.8	-	-	-	1,234.2	53.5	132.8
B. Market Development & Value chains	20.0	2.6	67.3	8.9	492.9	64.9	104.3	13.7	-	75.0	9.9	759.5	32.9	20.0
C. Project Management	17.4	5.6	-	-	295.2	94.4	-	-	-	-	-	312.6	13.6	17.4
Total PROJECT COSTS	170.2	7.4	67.3	2.9	1,842.5	79.9	151.3	6.6	-	75.0	3.3	2,306.3	100.0	170.2

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Mongolia														
PMPMD_Phase 1														
Expenditure Accounts by Financiers														
(US\$ '000)														
	GOM		MoF		IFAD		GEF		Beneficiaries		Total		Duties & Taxes	
	Amount	%	Amount	%	Amount	%	Amount	%	%	Amount	%	Amount	%	
I. Investment Costs														
A. civilworks	28.2	10.0	-	-	253.7	90.0	-	-	-	-	-	281.9	12.2	28.2
B. Vehicles and equipment	0.2	15.0	-	-	1.0	85.0	-	-	-	-	-	1.2	0.1	0.2
C. Tools, materials and inputs	45.1	15.0	-	-	237.1	78.9	18.2	6.1	-	-	-	300.4	13.0	45.1
D. Group formation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. Capacity building, studies	9.6	10.0	-	-	-	-	86.1	90.0	-	-	-	95.7	4.1	9.6
F. Service providers contract	30.7	10.0	-	-	229.4	74.7	47.0	15.3	-	-	-	307.0	13.3	30.7
G. Value chain management	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H. Loans	-	-	-	-	400.0	84.2	-	-	-	75.0	15.8	475.0	20.6	-
I. Project grants	45.7	10.0	-	-	411.7	90.0	-	-	-	-	-	457.4	19.8	45.7
J. Loan guarantees	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Investment Costs	159.4	8.3	-	-	1,532.9	79.9	151.3	7.9	-	75.0	3.9	1,918.7	83.2	159.4
II. Recurrent Costs														
A. Field and management staff	5.7	1.7	67.3	19.9	264.3	78.4	-	-	-	-	-	337.4	14.6	5.7
B. Operations and maintenance	5.0	10.0	-	-	45.2	90.0	-	-	-	-	-	50.3	2.2	5.0
Total Recurrent Costs	10.8	2.8	67.3	17.4	309.6	79.9	-	-	-	-	-	387.6	16.8	10.8
Total PROJECT COSTS	170.2	7.4	67.3	2.9	1,842.5	79.9	151.3	6.6	-	75.0	3.3	2,306.3	100.0	170.2

Mongolia PMPMD_Phase 1 Components Project Cost Summary		(MNT Million)			(US\$ '000)			%	% Total
		Local	Foreign	Total	Local	Foreign	Total	Foreign	Base
								Exchange	Costs
A. Pasture Management and Climate Change Adaptation									
	Pasture Management	883	-	883	430.6	-	430.6	-	20
	Climate Change Adaptation	1,217	260	1,477	593.7	126.9	720.6	18	33
	Subtotal	2,100	260	2,360	1,024.3	126.9	1,151.2	11	53
	B. Market Development & Value chains	1,508	30	1,538	735.6	14.5	750.1	2	34
	C. Project Management	537	36	574	262.1	17.8	279.9	6	13
	Total BASELINE COSTS	4,145	326	4,472	2,022.0	159.2	2,181.2	7	100
	Physical Contingencies	29	8	37	14.1	3.7	17.8	21	1
	Price Contingencies	203	17	220	99.0	8.2	107.2	8	5
	Total PROJECT COSTS	4,377	351	4,728	2,135.2	171.1	2,306.3	7	106

Mongolia PMPMD_Phase 1 Project Components by Year -- Totals Including Contingencies (US\$ '000)		Totals Including Contingencies		
		2016	2017	Total
		A. Pasture Management and Climate Change Adaptation		
	Pasture Management	15.2	421.0	436.2
	Climate Change Adaptation	36.6	761.4	798.0
	Subtotal	51.8	1,182.4	1,234.2
	B. Market Development & Value chains	99.6	660.0	759.5
	C. Project Management	60.4	252.1	312.6
	Total PROJECT COSTS	211.8	2,094.5	2,306.3

PART-B: ADDITIONAL FINANCING DETAILED TABLES

Mongolia																			
PMPMD_Phase II																			
Table 1.0. Pasture Management and climate change adaptation																			
Detailed Costs																			
	Unit	Quantities					Unit Cost (US\$)	Base Cost (US\$ '000)					Totals Including Contingencies (US\$ '000)					Other Accounts	
		2017	2018	2019	2020	Total		2017	2018	2019	2020	Total	2017	2018	2019	2020	Total	Disb. Acct.	Fin. Rule
I. Investment Costs																			
A. Support to Pasture Herder Groups																			
1. Support to PHG																			
NGO contract	year							36.6	58.5	58.5	-	153.7	38.4	62.7	64.0	-	165.2	GSI_DA	IFAD (100%)
Additional specific service provider	lumpsum							-	20.0	20.0	20.0	60.0	-	21.4	21.9	22.3	65.6	GSI_DA	IFAD (100%)
Soum facilitators	person_year	18	18	18	18	72	3,000	54.0	54.0	54.0	54.0	216.0	56.7	57.9	59.0	60.2	233.9	GSI_DA	IFAD (100%)
Subtotal								90.6	132.5	132.5	74.0	429.7	95.2	142.1	144.9	82.5	464.7		
2. Pasture-herder groups investments																			
Tractors	each	-	48	48	48	144	3,000	-	144.0	144.0	144.0	432.0	-	154.3	157.4	160.6	472.3	GSI_DA	IFAD (100%)
Performance-based RF top up	lumpsum							-	-	75.0	75.0	150.0	-	-	75.0	75.0	150.0	GRANT_DA	IFAD (100%)
Subtotal								-	144.0	219.0	219.0	582.0	-	154.3	232.4	235.6	622.3		
Subtotal								90.6	276.5	351.5	293.0	1,011.7	95.2	296.4	377.3	318.1	1,087.0		
B. Soum-level public investments																			
1. Water sources																			
Wells	each	-	18	27	27	72	10,000	-	180.0	270.0	270.0	720.0	-	202.6	309.9	316.1	828.6	CW_DA	IFAD (100%)
Well-rehabilitation	each	-	18	27	27	72	3,000	-	54.0	81.0	81.0	216.0	-	60.8	93.0	94.8	248.6	CW_DA	IFAD (100%)
Water harvesting infrastructure	each	-	2	4	3	9	20,000	-	40.0	80.0	60.0	180.0	-	45.0	91.8	70.3	207.1	CW_DA	IFAD (100%)
Spring protection	each	-	10	22	22	54	1,000	-	10.0	22.0	22.0	54.0	-	11.3	25.3	25.8	62.3	CW_DA	IFAD (100%)
Subtotal								-	284.0	453.0	433.0	1,170.0	-	319.6	520.0	507.0	1,346.6		
2. Hay & fodder development																			
Soum hay & fodder storage	shed	-	5	9	4	18	50,000	-	250.0	450.0	200.0	900.0	-	281.4	516.6	234.2	1,032.1	CW_DA	IFAD (100%)
Aimag equipment for hay-making	set	-	2	3	1	6	50,000	-	100.0	150.0	50.0	300.0	-	112.5	172.2	58.5	343.3	CW_DA	IFAD (100%)
Aimag storage (fodder storage, hay-shed)	each	-	2	3	1	6	80,000	-	160.0	240.0	80.0	480.0	-	180.1	275.5	93.7	549.2	CW_DA	IFAD (100%)
Pasture improvement (seeds, fence, guards etc)	ha	-	4,000	6,000	5,000	15,000	10	-	40.0	60.0	50.0	150.0	-	42.9	65.6	55.8	164.2	GSI_DA	IFAD (100%)
Subtotal								-	550.0	900.0	380.0	1,830.0	-	616.8	1,029.8	442.1	2,088.8		
3. Local government capacity building																			
Soum level strategy development	lumpsum							45.0	45.0	-	-	90.0	47.3	48.2	-	-	95.5	GSI_DA	IFAD (100%)
Soum-level training	lumpsum							45.0	20.0	15.0	-	80.0	47.3	21.4	16.4	-	85.1	GSI_DA	IFAD (100%)
Bagh level training	lumpsum							7.0	7.0	7.0	-	21.0	7.4	7.5	7.7	-	22.5	GSI_DA	IFAD (100%)
Subtotal								97.0	72.0	22.0	-	191.0	101.9	77.2	24.1	-	203.2		
Subtotal								97.0	906.0	1,375.0	813.0	3,191.0	101.9	1,013.6	1,573.9	949.1	3,638.6		
Total								187.6	1,182.5	1,726.5	1,106.0	4,202.7	197.1	1,310.0	1,951.2	1,267.2	4,725.6		

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PMPMD_Phase II

Table 2.0. Market Development

Detailed Costs

	Unit	Quantities					Unit Cost (US\$)	Base Cost (US\$ '000)					Totals Including Contingencies (US\$ '000)					Other Accounts	
		2017	2018	2019	2020	Total		2017	2018	2019	2020	Total	2017	2018	2019	2020	Total	Disb. Acct.	Fin. Rule
I. Investment Costs																			
A. Production-WGs & PHGs																			
1. Women' Groups																			
Support to WGs & PHGs	contract						36.6	58.5	36.6	-	131.7	38.4	62.7	40.0	-	141.2	GSL_DA	IFAD (100%)	
Credit line	WG	54	54	-	-	108	7,500	405.0	405.0	-	810.0	405.0	405.0	-	-	810.0	CREDIT_DA	IFAD (70%), MOL (30%)	
Knowledge sharing event	event	1	-	-	-	1	10,000	10.0	-	-	-	10.0	10.5	-	-	-	10.5	GSL_DA	IFAD (100%)
Rehabilitation of work places, Soum	soum	6	6	6	-	18	5,000	30.0	30.0	30.0	-	90.0	33.1	33.8	34.4	-	101.3	CW_DA	IFAD (100%)
Sales point at Aimag level	aimag	-	2	2	2	6	10,000	-	20.0	20.0	20.0	60.0	-	22.5	23.0	23.4	68.9	CW_DA	IFAD (100%)
Subtotal							481.6	513.5	86.6	20.0	1,101.7	487.1	524.0	97.4	23.4	1,131.9			
2. Pasture Herder Groups																			
Credit line	PHG	12	12	12	-	36	7,500	90.0	90.0	90.0	-	270.0	90.0	90.0	90.0	-	270.0	CREDIT_DA	IFAD (100%)
3. Breed improvement																			
Investments to improve local breeds	lumpsum						-	30.0	30.0	30.0	90.0	-	32.2	32.8	33.5	98.4	GSL_DA	IFAD (100%)	
Herders information centre	each	-	6	6	6	18	5,000	-	30.0	30.0	30.0	90.0	-	33.8	34.4	35.1	103.3	CW_DA	IFAD (100%)
Risk fund, contribution to Livestock insurance programme	lumpsum						-	10.0	10.0	10.0	30.0	-	10.0	10.0	10.0	30.0	GRANT_DA	IFAD (100%)	
Subtotal							-	70.0	70.0	70.0	210.0	-	75.9	77.2	78.6	231.7			
Subtotal							571.6	673.5	246.6	90.0	1,581.7	577.1	689.9	264.6	102.0	1,633.6			
B. Processing-small enterprises & cooperatives																			
1. Newly established cooperatives																			
WG & PHGs																			
Skills development	lumpsum						10.0	10.0	10.0	-	30.0	10.5	10.7	10.9	-	32.2	TAW_DA	IFAD (100%)	
Line of credit for equipment	coop	4	6	8	-	18	15,000	60.0	90.0	120.0	-	270.0	60.0	90.0	120.0	-	270.0	CREDIT_DA	BANK (50%), IFAD (50%)
Infrastructure investment	coop	4	6	8	-	18	20,000	80.0	120.0	160.0	-	360.0	88.3	135.0	183.7	-	407.0	CW_DA	IFAD (100%)
Subtotal							150.0	220.0	290.0	-	660.0	158.8	235.8	314.6	-	709.1			
2. Emerging small enterprises & cooperatives																			
Training	lumpsum						10.0	10.0	10.0	-	30.0	10.5	10.7	10.9	-	32.2	TAW_DA	IFAD (100%)	
Line of credit for equipment	SEC	5	7	6	-	18	25,000	125.0	175.0	150.0	-	450.0	125.0	175.0	150.0	-	450.0	CREDIT_DA	BANK (75%), IFAD (25%)
Subtotal							135.0	185.0	160.0	-	480.0	135.5	185.7	160.9	-	482.2			
Subtotal							285.0	405.0	450.0	-	1,140.0	294.3	421.5	475.5	-	1,191.3			
C. Market, access to market																			
Rehabilitation of market infrastructure at Aimag level	unit	-	2	2	2	6	10,000	-	20.0	20.0	20.0	60.0	-	22.5	23.0	23.4	68.9	CW_DA	IFAD (100%)
Rehabilitation of market infrastructure at soum level	unit	6	6	6	-	18	5,000	30.0	30.0	30.0	-	90.0	33.1	33.8	34.4	-	101.3	CW_DA	IFAD (100%)
Capacity building of vet services	soum	6	6	6	-	18	5,000	30.0	30.0	30.0	-	90.0	31.5	32.2	32.8	-	96.5	GSL_DA	IFAD (100%)
Food quality standards	lumpsum	-	2	2	2	6	15,000	-	30.0	30.0	30.0	90.0	-	32.2	32.8	33.5	98.4	GSL_DA	IFAD (100%)
Food safety monitoring	year	-	1	1	1	3	5,000	-	5.0	5.0	5.0	15.0	-	5.4	5.5	5.6	16.4	GSL_DA	IFAD (100%)
National, international quality standards Certification	lumpsum						-	10.0	-	-	10.0	-	10.7	-	-	10.7	GSL_DA	IFAD (100%)	
Agribusiness forum	event	1	1	1	1	4	10,000	10.0	10.0	10.0	10.0	40.0	10.5	10.7	10.9	11.2	43.3	GSL_DA	IFAD (100%)
Exhibition, marketing network, trial shipment	lumpsum						-	-	25.0	25.0	50.0	-	-	27.3	27.9	55.2	GSL_DA	IFAD (100%)	
Support to VC strengthening	lumpsum						30.0	30.0	30.0	-	90.0	31.5	32.2	32.8	-	96.5	GSL_DA	IFAD (100%)	
Subtotal							100.0	165.0	190.0	100.0	555.0	106.7	179.5	210.5	112.6	609.3			

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Table 2 Market development continued

Mongolia																					
PMPMD_Phase II																					
Table 2.0. Market Development																					
Detailed Costs																					
Unit	Quantities					Unit Cost (US\$)	Base Cost (US\$ '000)					Totals Including Contingencies (US\$ '000)					Other Accounts				
	2017	2018	2019	2020	Total		2017	2018	2019	2020	Total	2017	2018	2019	2020	Total	Disb. Acct.	Fin. Rule			
D. Other services & facilities																					
Legal services	lumpsum						15.0	15.0	10.0	-	40.0	15.8	16.1	10.9	-	42.8	GSI_DA	MOF (100%)			
Audit fees	lumpsum						5.0	5.0	5.0	5.0	20.0	5.3	5.4	5.5	5.6	21.7	GSI_DA	MOF (100%)			
Knowledge sharing information	lumpsum						-	15.0	-	15.0	30.0	-	16.1	-	16.7	32.8	GSI_DA	MOF (100%)			
Training	lumpsum						20.0	-	20.0	-	40.0	21.0	-	21.9	-	42.9	GSI_DA	MOF (100%)			
Payment to SCGF	lumpsum						10.0	10.0	10.0	10.0	40.0	10.5	10.7	10.9	11.2	43.3	GSI_DA	MOF (100%)			
Subtotal							50.0	45.0	45.0	30.0	170.0	52.5	48.2	49.2	33.5	183.4					
Total Investment Costs							1,006.6	1,288.5	931.6	220.0	3,446.7	1,030.5	1,339.2	999.8	248.1	3,617.6					
II. Recurrent Costs																					
A. Staff salaries of Aimag, Soum																					
Aimags Coordinators	pers_year	6	6	6	6	24	3,000	18.0	18.0	18.0	18.0	72.0	18.5	18.5	18.5	18.5	73.8	SSA_DA	IFAD (100%)		
Soum coordinators	pers_year	18	18	18	18	72	3,000	54.0	54.0	54.0	54.0	216.0	55.4	55.4	55.4	55.4	221.4	SSA_DA	IFAD (100%)		
Subtotal								72.0	72.0	72.0	72.0	288.0	73.8	73.8	73.8	73.8	295.2				
B. LGF Staff salaries																					
Manager	pers_year	1	1	1	1	4	30,000	30.0	30.0	30.0	30.0	120.0	30.8	30.8	30.8	30.8	123.0	SSA_DA	MOF (100%)		
Loans officer	pers_year	1	1	1	1	4	27,000	27.0	27.0	27.0	27.0	108.0	27.7	27.7	27.7	27.7	110.7	SSA_DA	MOF (100%)		
VC Coordinator	pers_year	1	1	1	1	4	25,000	25.0	25.0	25.0	25.0	100.0	25.6	25.6	25.6	25.6	102.5	SSA_DA	MOF (100%)		
Driver	pers_year	1	1	1	1	4	9,500	9.5	9.5	9.5	9.5	38.0	9.7	9.7	9.7	9.7	39.0	SSA_DA	MOF (100%)		
Social insurance	pers_year	1	1	1	1	4	9,800	9.8	9.8	9.8	9.8	39.2	10.0	10.0	10.0	10.0	40.2	SSA_DA	MOF (100%)		
Subtotal								101.3	101.3	101.3	101.3	405.2	103.8	103.8	103.8	103.8	415.3				
C. LGF other operating costs																					
Communications & administration	year	1	1	1	1	4	17,000	17.0	17.0	17.0	17.0	68.0	17.4	17.4	17.4	17.4	69.7	OPM_DA	MOF (100%)		
Travel allowances	year	1	1	1	1	4	7,000	7.0	7.0	7.0	7.0	28.0	7.2	7.2	7.2	7.2	28.7	OPM_DA	MOF (100%)		
Vehicle O&M	year	1	1	1	1	4	7,000	7.0	7.0	7.0	7.0	28.0	7.2	7.2	7.2	7.2	28.7	OPM_DA	MOF (100%)		
Subtotal								31.0	31.0	31.0	31.0	124.0	31.8	31.8	31.8	31.8	127.1				
Total Recurrent Costs								204.3	204.3	204.3	204.3	817.2	209.4	209.4	209.4	209.4	837.6				
Total								1,210.9	1,492.8	1,135.9	424.3	4,263.9	1,239.9	1,548.6	1,209.2	457.5	4,455.2				

Table 3: Project management and enabling environment for business development

Mongolia																			
PMPMD_Phase II																			
Table 3.0. Project Management & Enabling environment for business development																			
Detailed Costs																			
Unit	Quantities					Unit Cost (US\$)	Base Cost (US\$ '000)					Totals Including Contingencies (US\$ '000)					Other Accounts		
	2017	2018	2019	2020	Total		2017	2018	2019	2020	Total	2017	2018	2019	2020	Total	Disb. Acct.	Fin. Rule	
I. Investment Costs																			
A. Enabling environment																			
Training & skill development of Associations	lumpsum						4.5	2.3	2.3	-	9.0	4.7	2.4	2.5	-	9.6	GSI_DA	IFAD (100%)	
Training business development advisors	lumpsum						7.5	3.8	3.8	-	15.0	7.9	4.0	4.1	-	16.0	GSI_DA	IFAD (100%)	
Training facilitators for women' groups	lumpsum						25.0	12.5	12.5	-	50.0	26.3	13.4	13.7	-	53.3	GSI_DA	IFAD (100%)	
Subtotal							37.0	18.5	18.5	-	74.0	38.9	19.8	20.2	-	78.9			
B. Vehicle & equipment																			
1. 4 WD double cabin	each	1	-	-	-	1	71,707	71.7	-	-	-	71.7	75.4	-	-	-	75.4	VAE_DA	IFAD (100%)
2. Office equipment /a																			
Laptops	each	5	-	-	-	5	976	4.9	-	-	-	4.9	5.1	-	-	-	5.1	VAE_DA	IFAD (100%)
Desktops	each	5	-	-	-	5	878	4.4	-	-	-	4.4	4.6	-	-	-	4.6	VAE_DA	IFAD (100%)
Printers	each	5	-	-	-	5	195	1.0	-	-	-	1.0	1.0	-	-	-	1.0	VAE_DA	IFAD (100%)
Copiers	each	2	-	-	-	2	2,049	4.1	-	-	-	4.1	4.3	-	-	-	4.3	VAE_DA	IFAD (100%)
Subtotal							14.3	-	-	-	14.3	15.1	-	-	-	15.1			
Subtotal							86.0	-	-	-	86.0	90.4	-	-	-	90.4			
C. Implementation support																			
1. Project review																			
Inception workshop	lumpsum	1	-	-	-	1	30,000	30.0	-	-	-	30.0	31.5	-	-	-	31.5	TAW_DA	IFAD (100%)
Project implementation review	year	1	1	1	1	4	2,500	2.5	2.5	2.5	2.5	10.0	2.6	2.7	2.7	2.8	10.8	TAW_DA	IFAD (100%)
Annual audit	each	1	1	1	1	4	5,500	5.5	5.5	5.5	5.5	22.0	5.8	5.9	6.0	6.1	23.8	TAW_DA	IFAD (100%)
Annual Progress reports	each	1	1	1	1	4	20,000	20.0	20.0	20.0	20.0	80.0	21.0	21.4	21.9	22.3	86.6	TAW_DA	IFAD (100%)
Translation services	lumpsum	1	1	1	1	4	7,500	7.5	7.5	7.5	7.5	30.0	7.9	8.0	8.2	8.4	32.5	TAW_DA	IFAD (100%)
Subtotal							65.5	35.5	35.5	35.5	172.0	68.8	38.0	38.8	39.6	185.3			
2. Monitoring & evaluation																			
Current monitoring and reporting	lumpsum	2	2	2	2	8	10,000	20.0	20.0	20.0	20.0	80.0	21.0	21.4	21.9	22.3	86.6	TAW_DA	IFAD (100%)
M&E by the Ministries	lumpsum	2	2	2	2	8	5,000	10.0	10.0	10.0	10.0	40.0	10.5	10.7	10.9	11.2	43.3	TAW_DA	IFAD (100%)
Baseline surveys	each	1	-	-	-	1	60,000	60.0	-	-	-	60.0	63.0	-	-	-	63.0	TAW_DA	IFAD (100%)
Endline survey	each	-	-	-	1	1	60,000	-	-	-	60.0	60.0	-	-	-	66.9	66.9	TAW_DA	IFAD (100%)
Annual Outcome Survey	year	1	1	1	1	4	20,000	20.0	20.0	20.0	20.0	80.0	21.0	21.4	21.9	22.3	86.6	TAW_DA	IFAD (100%)
RIMS survey	each	-	1	1	1	3	20,000	-	20.0	20.0	20.0	60.0	-	21.4	21.9	22.3	65.6	TAW_DA	IFAD (100%)
Subtotal							110.0	70.0	70.0	130.0	380.0	115.6	75.0	76.5	145.0	412.1			

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PMPMD_Phase II

Table 3.0. Project Management & Enabling environment for business development

Detailed Costs	Unit	Quantities					Unit Cost (US\$)	Base Cost (US\$ '000)					Totals Including Contingencies (US\$ '000)					Other Accounts	
		2017	2018	2019	2020	Total		2017	2018	2019	2020	Total	2017	2018	2019	2020	Total	Disb. Acct.	Fin. Rule
3. Knowledge management capacity building																			
Experience-sharing workshops	lumpsum	-	1	1	1	3	20,000	-	20.0	20.0	20.0	60.0	-	21.4	21.9	22.3	65.6	TAW_DA	IFAD (100%)
Policy, impact studies dissemination	lumpsum	-	1	1	1	3	20,000	-	20.0	20.0	20.0	60.0	-	21.4	21.9	22.3	65.6	TAW_DA	IFAD (100%)
IFAD training, workshops	lumpsum	-	1	1	1	3	15,000	-	15.0	15.0	15.0	45.0	-	16.1	16.4	16.7	49.2	TAW_DA	IFAD (100%)
Documentary films	lumpsum	-	1	1	1	3	20,000	-	20.0	20.0	20.0	60.0	-	21.4	21.9	22.3	65.6	TAW_DA	IFAD (100%)
Publications	lumpsum	-	1	1	1	3	40,000	-	40.0	40.0	40.0	120.0	-	42.9	43.7	44.6	131.2	TAW_DA	IFAD (100%)
Subtotal								-	115.0	115.0	115.0	345.0	-	123.3	125.7	128.2	377.2		
Subtotal								175.5	220.5	220.5	280.5	897.0	184.4	236.3	241.1	312.8	974.6		
Total Investment Costs								298.5	239.0	239.0	280.5	1,057.0	313.7	256.2	261.3	312.8	1,144.0		
II. Recurrent Costs																			
A. Staff salary																			
Director	pers_year	1	1	1	1	4	30,500	30.5	30.5	30.5	30.5	122.0	30.5	30.5	30.5	30.5	122.0	SSA_DA	IFAD (100%)
Accountant	pers_year	1	1	1	1	4	27,500	27.5	27.5	27.5	27.5	110.0	27.5	27.5	27.5	27.5	110.0	SSA_DA	IFAD (100%)
Coordinator (Pasture management)	pers_year	1	1	1	1	4	25,000	25.0	25.0	25.0	25.0	100.0	25.0	25.0	25.0	25.0	100.0	SSA_DA	IFAD (100%)
Coordinator (Market development)	pers_year	1	1	1	1	4	25,000	25.0	25.0	25.0	25.0	100.0	25.0	25.0	25.0	25.0	100.0	SSA_DA	IFAD (100%)
Procurement officer	pers_year	1	1	1	1	4	22,000	22.0	22.0	22.0	22.0	88.0	22.0	22.0	22.0	22.0	88.0	SSA_DA	IFAD (100%)
M&E officer	pers_year	1	1	1	1	4	22,000	22.0	22.0	22.0	22.0	88.0	22.0	22.0	22.0	22.0	88.0	SSA_DA	IFAD (100%)
Translator	pers_year	1	1	1	1	4	15,000	15.0	15.0	15.0	15.0	60.0	15.0	15.0	15.0	15.0	60.0	SSA_DA	IFAD (100%)
Drivers	pers_year	2	2	2	2	8	9,500	19.0	19.0	19.0	19.0	76.0	19.0	19.0	19.0	19.0	76.0	SSA_DA	IFAD (100%)
Social Insurance	year	1	1	1	1	4	20,000	20.0	20.0	20.0	20.0	80.0	20.0	20.0	20.0	20.0	80.0	SSA_DA	IFAD (100%)
Subtotal								206.0	206.0	206.0	206.0	824.0	206.0	206.0	206.0	206.0	824.0		
B. Operating costs																			
Communications administration	year	1	1	1	1	4	25,000	25.0	25.0	25.0	25.0	100.0	25.0	25.0	25.0	25.0	100.0	OPM_DA	IFAD (100%)
Staff travel allowance	year	1	1	1	1	4	15,000	15.0	15.0	15.0	15.0	60.0	15.0	15.0	15.0	15.0	60.0	OPM_DA	IFAD (100%)
Vehicle maintenance	veh_year	0.6	2	2	2	6.6	11,000	6.6	22.0	22.0	22.0	72.6	6.6	22.0	22.0	22.0	72.6	OPM_DA	IFAD (100%)
Miscellaneous	lumpsum	1	1	1	1	4	5,750	5.8	5.8	5.8	5.8	23.0	5.8	5.8	5.8	5.8	23.0	OPM_DA	IFAD (100%)
Subtotal								52.4	67.8	67.8	67.8	255.6	52.4	67.8	67.8	67.8	255.6		
Total Recurrent Costs								258.4	273.8	273.8	273.8	1,079.6	258.4	273.8	273.8	273.8	1,079.6		
Total								556.9	512.8	512.8	554.3	2,136.6	572.1	529.9	535.0	586.5	2,223.6		

la Replacement units

PART-B: PHASE-II SUMMARY TABLES

Mongolia

PMPMD_Phase II

Disbursement Accounts by Financiers

(US\$ '000)

	GOM		IFAD		MOF		MOL_EGF		Banks		Total		Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
1. Civilworks	412	10.0	3,710	90.0	-	-	-	-	-	-	4,122	36.1	412
2. Vehicles, equipment and materials	14	15.0	77	85.0	-	-	-	-	-	-	90	0.8	14
3. Goods, services and inputs	338	15.0	1,762	78.1	156	6.9	-	-	-	-	2,256	19.8	338
4. Training and workshop	104	10.0	935	90.0	-	-	-	-	-	-	1,039	9.1	104
5. Credit	-	-	1,085	60.3	-	-	243	13.5	473	26.3	1,800	15.8	-
6. Project grants	18	10.0	162	90.0	-	-	-	-	-	-	180	1.6	18
7. Staff salaries and allowances	26	1.7	1,100	71.7	409	26.7	-	-	-	-	1,535	13.5	26
8. Operations and maintenance	38	10.0	230	60.1	114	29.9	-	-	-	-	383	3.4	38
Total PROJECT COSTS	950	8.3	9,060	79.4	679	6.0	243	2.1	473	4.1	11,404	100.0	950

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PMPMD_Phase II

Components by Financiers

(US\$ '000)

	GOM		IFAD		MOF		MOL_EGF		Banks		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. Pasture Management and climate change adaptation	538	11.4	4,188	88.6	-	-	-	-	-	-	4,726	41.4
2. Market Development	249	5.6	2,812	63.1	679	15.2	243	5.5	473	10.6	4,455	39.1
3. Project Management & Enabling environment for business development	163	7.3	2,060	92.7	-	-	-	-	-	-	2,224	19.5
Total PROJECT COSTS	950	8.3	9,060	79.4	679	6.0	243	2.1	473	4.1	11,404	100.0

Mongolia

PMPMD_Phase II

Expenditure Accounts by Financiers

(US\$ '000)

	GOM		IFAD		MOF		MOL_EGF		Banks		Total		Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
I. Investment Costs													
A. civilworks	412	10.0	3,710	90.0	-	-	-	-	-	-	4,122	36.1	412
B. Vehicles, equipment and materials	14	15.0	77	85.0	-	-	-	-	-	-	90	0.8	14
C. Goods, services and inputs	338	15.0	1,762	78.1	156	6.9	-	-	-	-	2,256	19.8	338
D. Training and workshop	104	10.0	935	90.0	-	-	-	-	-	-	1,039	9.1	104
E. Credit	-	-	1,085	60.3	-	-	243	13.5	473	26.3	1,800	15.8	-
F. Project grants	18	10.0	162	90.0	-	-	-	-	-	-	180	1.6	18
Total Investment Costs	886	9.3	7,730	81.5	156	1.6	243	2.6	473	5.0	9,487	83.2	886
II. Recurrent Costs													
A. Staff salaries and allowances	26	1.7	1,100	71.7	409	26.7	-	-	-	-	1,535	13.5	26
B. Operations and manaitenance	38	10.0	230	60.1	114	29.9	-	-	-	-	383	3.4	38
Total Recurrent Costs	64	3.3	1,330	69.4	523	27.3	-	-	-	-	1,917	16.8	64
Total PROJECT COSTS	950	8.3	9,060	79.4	679	6.0	243	2.1	473	4.1	11,404	100.0	950

Mongolia
 PMPMD_Phase II

Procurement Accounts by Financiers

(US\$ '000)

	GOM		IFAD		MOF		MOL_EGF		Banks		Total		Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
1. Civilworks	412	10.0	3,710	90.0	-	-	-	-	-	-	4,122	36.1	412
2. Vehicles, equipment and materials	14	15.0	77	85.0	-	-	-	-	-	-	90	0.8	14
3. Goods, services and inputs	338	15.0	1,762	78.1	156	6.9	-	-	-	-	2,256	19.8	338
4. Training and workshops	104	10.0	935	90.0	-	-	-	-	-	-	1,039	9.1	104
5. Credit	-	-	1,085	60.3	-	-	243	13.5	473	26.3	1,800	15.8	-
6. Project grants	18	10.0	162	90.0	-	-	-	-	-	-	180	1.6	18
7. Staff salaries and allowances	26	1.7	1,100	71.7	409	26.7	-	-	-	-	1,535	13.5	26
8. Operations and maintenance	38	10.0	230	60.1	114	29.9	-	-	-	-	383	3.4	38
Total PROJECT COSTS	950	8.3	9,060	79.4	679	6.0	243	2.1	473	4.1	11,404	100.0	950

Mongolia PMPMD_Phase II Components Project Cost Summary	(MNT Million)					(US\$ '000)				
	Local	Foreign	Total	%	% Total	Local	Foreign	Total	%	% Total
				Foreign Exchange	Base Costs				Foreign Exchange	Base Costs
1. Pasture Management and climate change adaptation	6,123	2,492	8,615	29	40	3,044	1,240	4,284	29	40
2. Market Development	7,784	957	8,741	11	40	3,820	476	4,296	11	40
3. Project Management & Enabling environment for business development	4,211	169	4,380	4	20	2,074	84	2,158	4	20
Total BASELINE COSTS	18,118	3,619	21,737	17	100	8,937	1,801	10,738	17	100
Physical Contingencies	300	111	411	27	2	149	55	204	27	2
Price Contingencies	1,843	649	2,492	26	11	342	121	463	26	4
Total PROJECT COSTS	20,261	4,379	24,640	18	113	9,428	1,977	11,404	17	106

Mongolia PMPMD_Phase II Project Components by Year -- Totals Including Contingencies (US\$ '000)	Totals Including Contingencies				
	2017	2018	2019	2020	Total
	1. Pasture Management and climate change adaptation	197	1,310	1,951	1,267
2. Market Development	1,240	1,549	1,209	457	4,455
3. Project Management & Enabling environment for business development	572	530	535	587	2,224
Total PROJECT COSTS	2,009	3,389	3,695	2,311	11,404

Mongolia PMPMD_Phase II Expenditure Accounts Project Cost Summary		(MNT Million)					(US\$ '000)				
					%	% Total				%	% Total
		Local	Foreign	Total	Foreign Exchange	Base Costs	Local	Foreign	Total	Foreign Exchange	Base Costs
I. Investment Costs											
A. civilworks	5,166	2,214	7,380	30	34	2,570	1,102	3,672	30	34	
B. Vehicles, equipment and materials	53	123	176	70	1	26	61	88	70	1	
C. Goods, services and inputs	2,990	1,281	4,271	30	20	1,488	638	2,125	30	20	
D. Training and workshop	1,962	-	1,962	-	9	976	-	976	-	9	
E. Credit	3,690	-	3,690	-	17	1,800	-	1,800	-	17	
F. Project grants	369	-	369	-	2	180	-	180	-	2	
Total Investment Costs	14,229	3,619	17,848	20	82	7,040	1,801	8,841	20	82	
II. Recurrent Costs											
A. Staff salaries and allowances	3,110	-	3,110	-	14	1,517	-	1,517	-	14	
B. Operations and manaitenance	778	-	778	-	4	380	-	380	-	4	
Total Recurrent Costs	3,888	-	3,888	-	18	1,897	-	1,897	-	18	
Total BASELINE COSTS	18,118	3,619	21,737	17	100	8,937	1,801	10,738	17	100	
Physical Contingencies	300	111	411	27	2	149	55	204	27	2	
Price Contingencies	1,843	649	2,492	26	11	342	121	463	26	4	
Total PROJECT COSTS	20,261	4,379	24,640	18	113	9,428	1,977	11,404	17	106	

Mongolia

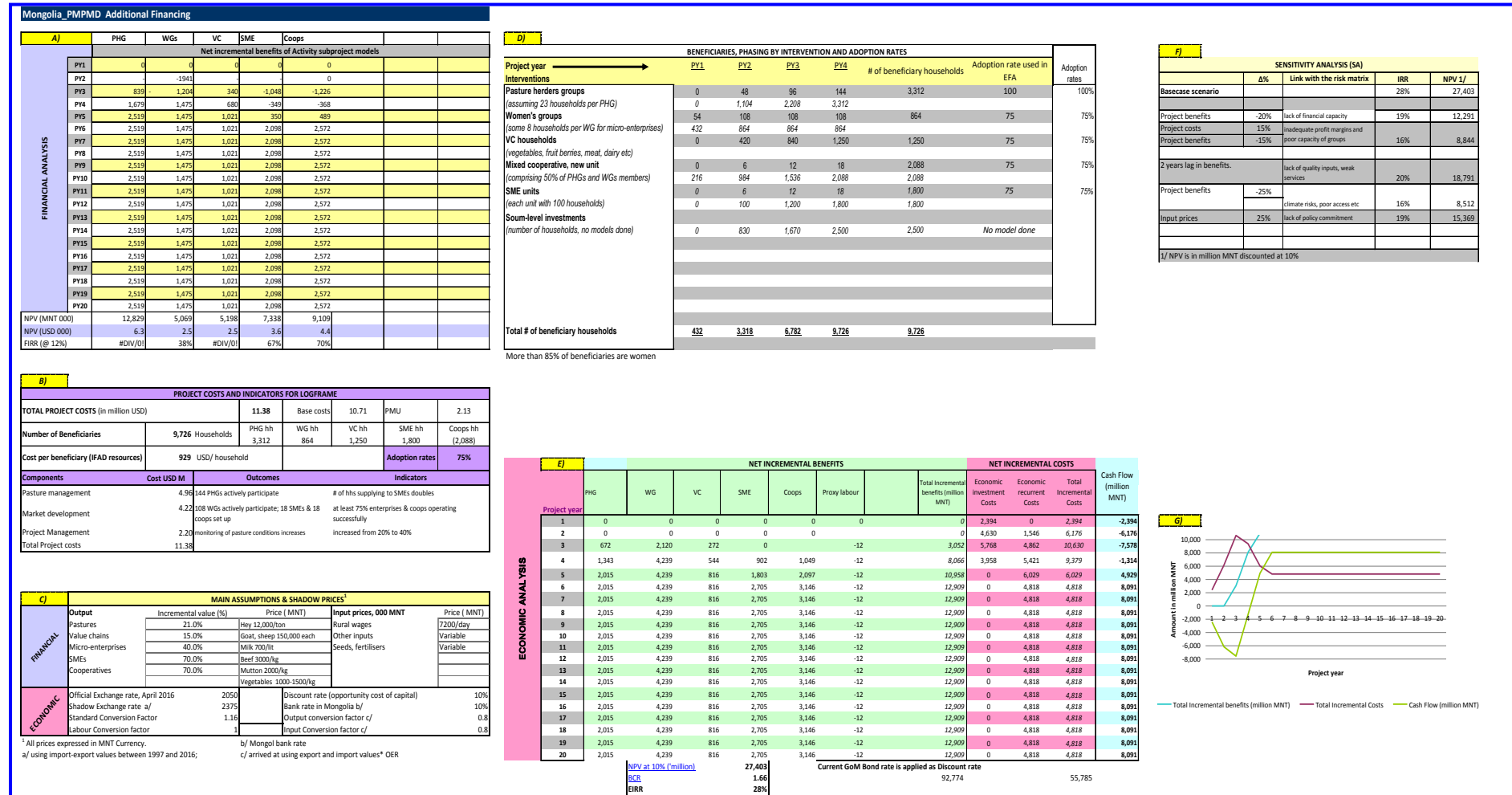
PMPMD_Phase II

Expenditure Accounts by Years -- Totals Including Contingencies

(US\$ '000)

	Totals Including Contingencies				
	2017	2018	2019	2020	Total
I. Investment Costs					
A. civilworks	154	1,175	1,817	975	4,122
B. Vehicles, equipment and materials	90	-	-	-	90
C. Goods, services and inputs	411	703	687	455	2,256
D. Training and workshop	205	258	263	313	1,039
E. Credit	680	760	360	-	1,800
F. Project grants	-	10	85	85	180
Total Investment Costs	1,541	2,905	3,212	1,828	9,487
II. Recurrent Costs					
A. Staff salaries and allowances	384	384	384	384	1,535
B. Operations and manaitenance	84	100	100	100	383
Total Recurrent Costs	468	483	483	483	1,917
Total PROJECT COSTS	2,009	3,389	3,695	2,311	11,404

Appendix III. Economic and Financial Analysis



A. Financial Analysis

1.1: Key Assumptions

1. The project work with some 144 Pasture herder groups (PHGs), 108 women's groups (WGs), 18 SME groups and 18 cooperatives groups and 1,250 households engaged in value-chains involving about 7,226 households in the project area. Additionally, there are 2,500 households benefited by the *soum* level investments. There is scope for improving the performance of existing and new groups and thereby enhancing their incomes, and also there is scope for enhancing the profit margins to value-chains, in particular of meat, vegetables, fruits and berries, dairy etc through a number of management practices and improving the access to input supplies, markets and financial services. Other key assumptions used in the EFA are that

- The participating households respond to the introduction of new packages of practices and management techniques;
- The households are willing to organise themselves in to viable community institutions such as Pasture herders groups, women's groups for undertaking micro-enterprises and SMEs, and cooperatives through training and capacity building and eventually organising in to higher level associations and federations;
- Pasture and livestock productivity is improved through appropriate management practices such as use of better seeds, fencing, provision of water facilities, fodder storage etc through organised groups and linkages between them;
- Members of both PHGs and WGs are organised in to cooperatives, both dedicated and mixed, their performance is enhanced through training and capacity building; the project organise these new cooperatives based on the experience gained under the ongoing PMPMD in phase-I area;
- Both PHGs and WGs leverage significant value-addition and employment along value-chain, and increase incomes and employment of a number of the poor people;
- On an average, each PHG has some 23 households, 8 member households in each WG, 100 member households in each SME, 116 in each cooperative and about 1,250 households in all value-chains;
- By improving the market information systems, organising the target groups in to cooperatives and providing marketing support and other attendant facilities, the participating households are able to realise increased margins for their produce;
- There are opportunities of diversification in to a number of micro-enterprises and other income generating activities for the WGs, and in this context target groups respond favourably to the new initiatives as evidenced from the on the ongoing programme in the Phase-I area;
- On an average, each PHG household tends some 300 sheep and goats and 5 cattle and horses although there are huge variations in livestock assets between the PHG households; current mortality rate is about 12% and due to project interventions, the mortality rate is reduced by 2%;
- A PHG household sells at least 20% of its livestock in a year but at least 10% during the month of October, 5% during November and 5% during the remaining months;
- Small ruminants are mostly slaughtered, say about 70% and sold; where as large animals such as cattle and horses are sold alive;

- There is scope for improving the infrastructure facilities for effective pasture management such as wells, fencing, water harvesting structures, etc and creating access to markets and thus ensuring better prices to the PHG households;
- Scope exists and thus there are several opportunities of improving the efficiency of value-chains, in particular for fibre and leather, dairy, meat, vegetables and berries (sea buckthorn) etc;
- Soum-level investments benefit some 2,500 households but no specific financial or economic models are generated for want of specific details and other information;
- Average rural wage rate has been assumed at MNT 7,200 per person-day although there are variations between wages to male and female and also between the seasons;
- On an average, there are four members in a household, two adults and two children and a rural household works for about 10 hrs a day;
- About 16% households are female-headed households;
- Under “without project situation” proxy value of labour has been assumed as follows: WG households 100 person-days (micro-enterprises) and SMEs and cooperatives 200 persons-days each;

2. Using FARMOD software several proxy models are developed in stages in order to have financial and economic models for the project as a whole. These are: (i) activity or production models, (ii) household and unit models, (iii) then subproject models and finally and (iv) the project model.

F. 1.2 Activity or production models

3. Following activity models have been developed and used for the analysis. Table below provides a list of these models and these are for the purposes of illustrations.

Table 1: List of Activity Models used in EFA			
PHG model	Micro-enterprises models for WGs	SME models	Cooperative models:
<ul style="list-style-type: none"> • Pasture productivity 	<ul style="list-style-type: none"> • Sewing unit • Tailoring unit • Vegetables cultivation • Boots-making unit • Cement blocks unit • Felt, leather unit • Tyre-retreading unit • Dairy processing unit • Vegetable processing unit 	<ul style="list-style-type: none"> • Felt production • Dairy production • Organic farm produce • Winter greenhouse production • Meat processing 	<ul style="list-style-type: none"> • Organic vegetable cultivation and sales • Greenhouse cultivation • Meat processing • Dairy production and processing <p><u>Value addition model</u></p> <ul style="list-style-type: none"> • Enhanced profit margins

4. **PHG model:** Pasture productivity is improved as a result of a number of facilities provided under the project. Each PHG household has some “4.5 ha area of nucleus pasture” for intensive development and the productivity increases from 0.5 t/ha to 1.0 t/ha and notionally valued at MNT 12,000/t. Also as a result of project facilities livestock mortality rate is reduced by 2% and this is valued at 6 sheep and goat equivalents at MNT 720,000 per PHG household¹⁸.

¹⁸ According to Annual Outcome Survey 2015, decline in mortality rate is 79% in the project area and 60% in non-project area. The differential reduction of 19% due to project interventions is equivalent to 2% as the global mortality rate is 10%

5. Micro-enterprises for WGs: Several models are used as proxy and these are (i) sewing unit, (ii) tailoring unit (iii) vegetable cultivation, (iv) leather boots-making unit, (v) cement concrete block making unit, (vi) Felt leather unit, (vii) tyre re-treading unit, (viii) dairy processing unit, and (ix) vegetable processing unit. All these models were adopted from live-models promoted by the Service Provider, "Union of Mongolian Production and Service Cooperatives, Ulaanbataar" in the Phase-I area. Changes were reported due to group-members renting work place together, training and start up support and fund from the project, sharing knowledge with the residents of the Soum and also due to exposure visits. Each unit has 8 member households. Proxy value of labour under "without project situation" for each unit has been assumed at 100 person days a year.

6. SMEs: In all 5 proxy models are used in the analysis. These were adopted from live-models already under implementation in the project area. These models are (i) felt production SME, (ii) dairy production SME, (iii) 5 ha production of organic vegetables SME, (iv) 2,400 m² winter greenhouse SME and (v) meat processing SME. All these models are for the purposes of evaluation and whereas things may be entirely different at the time of implementation. Each SME has 100 members and proxy value of labour under "without project situation" has been assumed at 100 person days a year.

7. Cooperatives: Each cooperative has 116 members of whom 50% from PHG households and remaining from WG households. These cooperatives undertake activities similar to SMEs. Thus four proxy models have been assumed: (i) meat processing, (ii) dairy processing, (iii) production of organic vegetables and (iv) winter greenhouse cultivation. Proxy value of labour under without project situation has been assumed at 200 person days a year.

8. Value-chains: There are diverse opportunities for value-chain development, in particular in the sub-sectors of cashmere, leather, dairy, meat processing, vegetables, berries etc. Some 1,250 households are engaged in value-addition activities. In the absence of any specific proxy model, sale of livestock products under "with project situation" enhances profit margin by about 15% to these households has been assumed.

G. 1.3: Household and Unit Models

9. Using indicative activity models, several Household Models were prepared. These models were designed to pattern the livelihood options and resource availability for the target groups in the project area. The models broadly illustrate the project's expected impact on the incomes, and labour use of households adopting and/or adapting both on-farm and non-farm technology options. *These models are indicative and assumed for assessing the Performance Indicators of the Project.* These are shown described briefly below.

(i) PHG household model: the model is based on a PHG household owning some 300 sheep and goats. Each participating household is provided with seed, technical support and linkages with market and above all training. Support provided by the project resulting in the reduction in livestock mortality rate by 2%. This is equivalent to 6 adult sheep and goat.

(ii) WG micro-enterprises unit model: This model was based on mix of all 9 micro-enterprises: sewing and tailoring units' 15% each, and rest of the enterprises 10% each to the unit model.

(iii) SME unit model: this model has a combination 5 SMEs: (i) felt production, (ii) dairy production, (iii) organic farm production, (iv) winter greenhouse production and (v) meat processing. Each unit contributes about 20% of costs and benefits to a single unit model.

(iv) Cooperative unit model: this model is again based on SME model but four major SMEs were taken into consideration to develop a proxy model: (i) organic farm produce, (ii) winter greenhouse production, (iii) dairy production and (iv) meat processing. Each contributes about 25% of costs and benefits to a single unit.

(v) Value-chain household: For the purposes of evaluation, only the sale of livestock has been taken in to consideration.

10. Details of the financial analysis of the unit models described above are summarized in Table-3 below:

Table 3: Summary Results of unit activity model (Financial)					
Household, Activity Model	Gross Income	Input Cost	BCR	FIRR	NPV
	(000, MNT)	(000,MNT)	(ratio)	(%)	at 12% (000,MNT)
PHG household	760	0	0	0	5,680
WG micro-enterprises unit	55,274	47,067	1.17	37	428,637
SME unit	250,444	92,194	2.72	67	1,645,780
Cooperative unit	291,305	97,245	2.99	70	1,914,506
Value-chain household	1,080	0	0	0	8,067

H. 1.4: Subproject Models

11. Emerging from proxy household and unit models, five subproject models were developed: (i) PHG-based subproject; (ii) WG-based subproject; (iii) SME-based subproject (iv) Cooperative-based subproject; and (v) value-chain based subproject. These are briefly described below.

- i. **PHG households subproject**: This subproject includes 3,312 PHG households each owing some 300 sheep and goats and intensive nucleus pasture development covering some 4.5 ha and benefiting a reduction in livestock mortality of about 2%. Household participation is in a phased manner: 0 in year 1, 1104 each in the remaining 3 year period. As the participation is demand-driven by individual households, the adoption rate is assumed at 100%. Aggregate financial benefits of this subproject are shown in Annex-1.1.
- ii. **WG households subproject**: In all some 864 households participate in a phased manner over a 2 year period: 432 households each in year 1 and 2. Enhanced household incomes are due to efficient operations of the micro-enterprises. As this is a group activity an adoption rate of 75% is assumed. Aggregate financial results of the subproject are presented in Annex-1.4.
- iii. **SME households subproject**: This subproject has 1,800 households owning and operating 18 SME units. These are supported in a phased manner: 0 in year 1, 6 each in year 2 to 4. These activities are group-based and hence the overall adoption rate of 75% is assumed. Aggregate financial results for this subproject are presented in Annex-1.6
- iv. **Cooperative households subproject**: This subproject has 18 units with members drawn from both WG and PHG. These households from 144 PHGs and 108 WGs benefit from enhanced sales margins. It is assumed that about 75% of cooperatives actively pursue their activities. Aggregate financial results for the subproject are presented in Annex-1.8.
- v. **Value-chain households subproject**: About 17 percent of targeted households participate in value-chain enterprises such as meat, dairy, cashmere, vegetables, berries etc and their participation starting from year 2 at 420 households per year. No specific proxy model was available at the time of analysis and hence the ground realities could be completely different at implementation stage. Adoption rate has been assumed at 75%. Aggregate financial results of the subproject are presented in Annex-1.2.

12. Results of analysis of these subprojects where direct benefits in terms of incomes, production costs, input etc are quantified are summarised below and details in Table-A

Table 4: Summary Results of Subproject Financial models: 000 MNT/ Unit a/				
Details	# of units	Gross income	Inputs c/	Net income
PHG subproject WOP				
PHG subproject WP, # of groups	144	17,490	0	17,490
WG subproject WOP b/		540		
WG subproject WP, # of groups	108	49,063	35,300	13,763
SME subproject WOP b/		1,080	0	
SME subproject WP, # of units	18	187,833	71,292	116,541
Coop subproject, WOP b/		1,080	0	
Coop subproject, WP # of units	18	218,478	75,615	142,863
VC subproject WOP b/		540	0	
VC subproject WP, # of hh	1,250	1,080	0	1,080
a/ At full development stage and assuming all labour requirements met by households themselves.				
b/ proxy value of labour under WOP situation				
c/ including labour and salary inputs				

B. Economic analysis

2.1 Objectives, methodology and assumptions

13. The objective of the economic analysis is to evaluate the expected contribution of the project to the economic development of the project area. The purpose of such analysis is to determine whether the economic benefits sufficiently justify the use of the scarce resources that the project needs.

14. The analysis includes all incremental costs and incremental benefits that are quantifiable and associated with the project's investments in development. Target group households adopting and participating in the project interventions contribute to increased production, besides ensuring their increases in incomes.

15. The following assumptions underlie this economic analysis of the project.

- A twenty-year analysis period has been assumed, which included a 4 year project investment period.
- Products move freely within the project area in response to market signals.
- All inputs and outputs that are traded are valued at farmgate prices as of April 2016. These were adjusted to allow for transport and marketing costs to give an economic value at the farm gate. See Annex-1.13 for commodity-wise list of prices used in the analysis.
- Economic investment costs are net of taxes and price contingencies, credit, office rent etc. See Annex-1.9
- All costs directly associated with the incremental production are included in full, including incremental inputs and family and hired labour.
- Standard conversion factors (SCF)¹⁹ of 80% applied to both traded and non-traded items for adjusting financial prices.
- The financial price of labour has been assumed at MNT 7200/day;
- The analysis includes only incremental benefits and including attributable benefits from pasture improvement, reduction in livestock mortality, incremental incomes from micro-micro-enterprises, SMEs, value-chains and cooperatives and excluding any notional benefits from the other infrastructure interventions;
- All costs and benefits are relating to investments made on targeted project area households and the resultants benefits;
- Time required for the full development is over 5 years including system development, dissemination of information, technology transfer, establishment of groups and their higher level institutions, improving access to markets, etc;

¹⁹ Comparison of price between nearby markets and farm-gates provided the basis for SCF: accordingly the output commodities the weighted average SCF is 80.

- The EFA uses an Opportunity Cost of Capital²⁰ (OCC) 10% and EFA has been carried out using domestic currency units.

2.2: Costs - Benefits Streams and Analysis

16. The **project economic costs** were calculated from the financial project costs excluding price contingencies, credit funds, taxes and duties. Recurrent costs for continued extension/training support, operations and maintenance and periodic replacement of vehicles have been included. Economic prices for inputs and output prices were estimated by applying the conversion factors on the financial prices. See Annex-1.13

17. **Production Benefits:** The pasture productivity increases and reduction in mortality rates are direct output from the PHG household models and in all 3,312 households from 144 PHGs are direct beneficiaries. Similarly 108 women' groups comprising 864 households are direct beneficiaries of 108 micro-enterprises. In addition 1,250 households are benefited from value-chain interventions. Likewise, 18 SMEs benefit some 1,800 households and 18 mixed cooperatives (which have members drawn both from PHGs and WGs) benefit some 2,088 households. Common infrastructure facilities that are implemented in all 18 soums and 6 Aimags benefit some 2,500 additional households but these benefits are not quantified.

18. **Project Performance Indicators:** Cost-benefit analysis yields an overall IRR of 28%. The estimated NPV for a 10% discount rate is MNT 27,407 million and the BCR of 1.57. A positive NPV under the current Opportunity Cost of Capital (OCC) of 10% indicates that the project investments are robust. A sensitivity analysis of the project is presented in Table below and details in Table-E and in Annex-1.12.

Table 5: Sensitivity of NPV, IRR and BCR to varying scenarios					
Indicators	Base case	Cost Increases by		Benefits down by	
		20%	25%	20%	25%
NPV-Benefit streams & cost streams discounted at 10% MNT million a/	27,406	17,772	15,364	12,291	8,512
IRR-Net incremental benefits stream for a 20 year period b/	28%	20%	19%	19%	16%
BCR-Cash flows discounted at 10% c/	1.57	1.31	1.26	1.26	1.18

a/ The NPV is a very concise performance indicator of an investment project: it represents the present amount of the net benefits (i.e. incremental benefits less incremental costs) flow generated by the investment expressed in MNT (a single value with the same unit of measurement used in the accounting tables). The Net Present Value is the sum of a 20 year discounted net cash flows.

b/ IRR is defined as the discount rate that zeroes out the net present value of flows of costs and net present value of flows of benefits of an investment. The IRR was computed using incremental net benefits streams for 20 year period. As IRR rankings can be misleading, and given that the informational requirements for computing a proper NPV and IRR are the same except for the discount rate, it is always worth calculating the NPV of a project. There are many reasons in favour of the NPV decision rule (see Lev, 2007).

c/ BCR is independent of the size of the investment and it does not generate ambiguous cases and for this reason it can complement the NPV in ranking projects where budget constraints apply. Being a ratio, the indicator does not consider the total amount of net benefits and therefore the ranking can reward more projects that contribute less to the overall increase in public welfare

84. 19. **Sensitivity analysis:** If benefits delayed by two years (in effect, if the project's production activities take longer to become established) then the IRR declines to 20% with a NPV of MNT 18,791 million. Under extreme scenario of costs increases by 25% and benefits decline by 25% over the base-case, an IRR of 8% is obtained. Likewise, the sensitivity analysis indicates that the project is more sensitive to decline in project benefits than increases in costs. Switching values²¹ indicate that the investments are worthy even if costs increased over 57% or the benefits declined by 36 %. See Annex-1.12 for details.

²⁰ This is the rate at which the Government of Mongolia Bonds are subscribed

²¹ Switching values are yet another measure of sensitivity analysis They demonstrate by how much a variable would have to fall (if it is a benefit) or rise (if it is a cost) to make it not worth undertaking an option.

85. 20. Sensitivity analysis confirms that the Project remains robust both to decreases in benefits and increases in costs. None the less, the project is more sensitive to decline in benefits than increases in costs. Decrease in benefits may be brought about by a decline in output prices, or a failure in achieving projected yields or outputs. It is noted that the project area often experiences natural calamities and therefore there are possibilities of decline in benefits happening more often than assumed. As the proposed investments are targeted at households, who are poor, living in the remote area locations, often affected by droughts and the hardships experienced by them in particular the women, the resulting base case IRR of 28% and the worst scenario case of 8% are considered more than justified.

21. Environmentally-related aspects of the project are its natural resources management including a focus on PHG-based pasture management practices. All these interventions yield substantial environmental benefits that have not been quantified in the economic analysis. Number of livestock units are not increased and thereby avoiding any adverse impact on carrying capacity of the pastures. Similarly all micro-enterprises are with a view to reducing pressure on already depleting pasture resources and to providing gainful employment to the target group households. As both PHGs and WGs are inclusive, these do not cause any dissent among the target communities. All micro-enterprises are home-based, use locally available resources and cause no damage to the region's vegetation. Processing units are agri-based and no harmful wastes discharged and no tannery units are supported.

C. Benefits and Beneficiaries

22. **Beneficiaries:** The project will directly benefit over 9,726 households from 18 soums falling under 6 Aimags of Arkhangay, Dornod, Dundgobi, Hentii, Sukhbaatar, Uvurkhangay including two *aimags* (Arkhangay and Hentii) from PMPMD. Beneficiary participation has been phased in such a manner to permit flexibility in project interventions and also to prepare the vulnerable groups to gain confidence and adequate capacity. Refer also Table-D showing implementation phasing and adoption rates and number of benefited households. Number of direct beneficiary households by subproject and year and indirect beneficiaries are shown in Table 6 below.

86.

Table-6: Number of directly Benefited Households, cumulative a/						
Household types	Project year				Post project	
	1	2	3	4	5	6
-PHG households b/	0	1104	2206	3312	3312	3312
-Women group households c/	432	864	864	864	864	864
-VC households	0	420	840	1250	1250	1250
-SME households d/	0	600	1,200	1,800	1,800	1,800
-Cooperative households e/	(216)	(984)	(1,536)	(2,088)	(2,088)	(2,088)
- Soum-level investments f/	0	830	1,670	2,500	2,500	2,500
Total, cumulative	432	3,318	6,782	9,726	9,726	9,726

a/ cumulative by year;
b/ Each PHG group has 23 member households
c/ Each WG has 8 member households
d/ each SME has 100 member households
e/ About 50% members of both PHGs and WGs form members of these cooperatives
f/ As no direct benefits quantified and no models were generated

23. **Household incomes:** Average income per household at full development stage; say in year 6 increases by MNT 1.12 million/year. Average incremental net incomes for a PHG household is MNT 758,600 /year, MNT 816,480 for a value-chain household, MNT 1.16 million/year for an SME household, MNT 1.70 million for a WG household and MNT 1.23 million for a household participating in cooperatives. Reference Annex 1.1 to 1.8

24. **Other benefits:** Additional benefits come from the Project's capacity building interventions. First, at the end of the project, all participating households, PHGs, WGs, Cooperatives, SMEs and value-chain actors would have the benefit and advantages of the services of the service providers, which are

capacitated and provided fund support for various social and economic developments. Almost all participating rural households have received training and capacity building benefits. Secondly, banks cater to the credit requirement of households. Thirdly, women from the poor groups are participating in and managing their social and economic development and have better access to markets and inputs and marketing their products. Lastly, the improvement of access to markets and common infrastructure such as fodder storage, hay-making equipment, etc provide better access to markets and marketing and thus facilitating enhanced price-margins to the target groups.

D. Risks and sustainability

25. There are a number of risks associated with the Project. These relate to institutional, markets and policy and these may be further linked to farm and non-farm technology, reluctance on the part of the participants to accept packages of practices, inadequate market linkages and poor price margins, financial constraints and lack of timely flow of institutional credit, lack of service providers and poor coordination and institutional support and policy risks. These issues and risks are addressed in the project design as described in Table below: (Refer also Table-F and Annex-1.12 for details)

Table-7: Project Risks and Sustainability				
Risks	Risk description	Probability of occurrence	Mitigation measures in programme design	Comparative sensitivity analysis result (Proxy)
Institutional	Delay in technology transfer slowing down the uptake rates and production Weak technical and management capacities of the service providers	High to Medium	PHG promoted and facilitated; Extensive training and demonstrations of package of practices, Competent service providers recruited;	Benefits lag by 2 years: IRR= 20% NPV= 18,791 million BCR= 1.39
	Lack of financial capacity to invest in enterprises and other occupations	High to Medium	Project facilitated financial services cover the target households	Decline in benefits by 20%: IRR=19% NPV=12,291 million BCR= 1.26
Market	Inadequate profit margins due to poor access, lack of transport and of market information Lack of capacities of PHG, WG, SME, cooperatives to negotiate fair deals with traders and suppliers	High to medium	Market information, improved technology advice. Improvement of local markets; empowering the producers' groups; training and capacity building; Facilities for linkages with private sector-producers groups for effective marketing support	Decline in benefits and increases in cost by 15%: IRR= 16% NPV=8,844 million BCR=1.16
	Lower market prices for commodities	Medium	Diversified production and improved market information; production of ready to market commodities and provision storage facilities	
Policy	Lack of commitment to investing in the welfare development and slowing down funds flow	Medium	The project investments are fully supported by GoM and adequate funds have been committed;	Operating costs increase by 25%: IRR=19% NPV= 15,364 million BCR=1.26
Others	Remoteness and difficulty of	Medium	Promotion of products that	Decline in

Table-7: Project Risks and Sustainability				
Risks	Risk description	Probability of occurrence	Mitigation measures in programme design	Comparative sensitivity analysis result (Proxy)
	access due to bad connectivity conditions		combine high farmer margin for small volumes and are easy to transport	benefits by 25%: IRR= 16% NPV=8,512 million BCR=1.18
	Climate change risks of droughts, snowfall, etc	Medium	Training farmers on climate change risks	

TABLE-A: FINANCIAL ANALYSIS BY SUBPROJECTS a/

A)	PHG	WGs	VC	SME	Coops		
FINANCIAL ANALYSIS	Net incremental benefits of Activity subproject models						
	PY1	0	0	0	0	0	
	PY2	-	-1941	-	-	0	
	PY3	839	1,204	340	-1,048	-1,226	
	PY4	1,679	1,475	680	-349	-368	
	PY5	2,519	1,475	1,021	350	489	
	PY6	2,519	1,475	1,021	2,098	2,572	
	PY7	2,519	1,475	1,021	2,098	2,572	
	PY8	2,519	1,475	1,021	2,098	2,572	
	PY9	2,519	1,475	1,021	2,098	2,572	
	PY10	2,519	1,475	1,021	2,098	2,572	
	PY11	2,519	1,475	1,021	2,098	2,572	
	PY12	2,519	1,475	1,021	2,098	2,572	
	PY13	2,519	1,475	1,021	2,098	2,572	
	PY14	2,519	1,475	1,021	2,098	2,572	
	PY15	2,519	1,475	1,021	2,098	2,572	
	PY16	2,519	1,475	1,021	2,098	2,572	
	PY17	2,519	1,475	1,021	2,098	2,572	
	PY18	2,519	1,475	1,021	2,098	2,572	
	PY19	2,519	1,475	1,021	2,098	2,572	
	PY20	2,519	1,475	1,021	2,098	2,572	
NPV (MNT 000)	12,829	5,069	5,198	7,338	9,109		
NPV (USD 000)	6.3	2.5	2.5	3.6	4.4		
FIRR (@ 12%)	#DIV/0!	38%	#DIV/0!	67%	70%		

a/ Refer Annex-1.1, 1.2, 1.4, 1.6 and 1.8 for details;

TABLE-B: PROJECT COSTS AND INDICATORS FOR LOGFRAME

B)						
PROJECT COSTS AND INDICATORS FOR LOGFRAME						
TOTAL PROJECT COSTS (in million USD)		11.38	Base costs	10.71	PMU	2.13
Number of Beneficiaries	9,726 Households	PHG hh 3,312	WG hh 864	VC hh 1,250	SME hh 1,800	Coops hh (2,088)
Cost per beneficiary (IFAD resources)	929 USD/ household				Adoption rates	75%
Components	Cost USD M	Outcomes		Indicators		
Pasture management	4.96	144 PHGs actively participate		# of hhs supplying to SMEs doubles		
Market development	4.22	108 WGs actively participate; 18 SMEs & 18 coops set up		at least 75% enterprises & coops operating successfully		
Project Management	2.20	monitoring of pasture conditions increases		increased from 20% to 40%		
Total Project costs	11.38					

TABLE-C: MAIN ASSUMPTIONS AND SHADOW PRICES

c)		MAIN ASSUMPTIONS & SHADOW PRICES ¹			
FINANCIAL	Output	Incremental value (%)	Price (MNT)	Input prices, 000 MNT	Price (MNT)
	Pastures	21.0%	Hey 12,000/ton	Rural wages	7200/day
	Value chains	15.0%	Goat, sheep 150,000 each	Other inputs	Variable
	Micro-enterprises	40.0%	Milk 700/lit	Seeds, fertilisers	Variable
	SMEs	70.0%	Beef 3000/kg		
	Cooperatives	70.0%	Mutton 2000/kg		
			Vegetables 1000-1500/kg		
ECONOMIC	Official Exchange rate, April 2016	2050		Discount rate (opportunity cost of capital)	10%
	Shadow Exchange rate a/	2375		Bank rate in Mongolia b/	10%
	Standard Conversion Factor	1.16		Output conversion factor c/	0.8
	Labour Conversion factor	1		Input Conversion factor c/	0.8

¹ All prices expressed in MNT Currency.

a/ using import-export values between 1997 and 2016;

b/ Mongol bank rate

c/ arrived at using export and import values* OER

TABLE-D: BENEFICIARIES, ADOPTION RATES AND PHASING

D)							
BENEFICIARIES, PHASING BY INTERVENTION AND ADOPTION RATES							
Project year →	PY1	PY2	PY3	PY4	# of beneficiary households	Adoption rate used in EFA	Adoption rates
Interventions							
Pasture herders groups <i>(assuming 23 households per PHG)</i>	0	48	96	144	3,312	100	100%
	0	1,104	2,208	3,312			
Women's groups <i>(some 8 households per WG for micro-enterprises)</i>	54	108	108	108	864	75	75%
	432	864	864	864			
VC households <i>(vegetables, fruit berries, meat, dairy etc)</i>	0	420	840	1,250	1,250	75	75%
Mixed cooperative, new unit <i>(comprising 50% of PHGs and WGs members)</i>	0	6	12	18	2,088	75	75%
	216	984	1,536	2,088	2,088		
SME units <i>(each unit with 100 households)</i>	0	6	12	18	1,800	75	75%
	0	100	1,200	1,800	1,800		
Soum-level investments <i>(number of households, no models done)</i>	0	830	1,670	2,500	2,500	<i>No model done</i>	
Total # of beneficiary households	432	3,318	6,782	9,726	9,726		

More than 85% of beneficiaries are women

TABLE-E: ECONOMIC ANALYSIS: INCREMENTAL COSTS AND BENEFITS a/

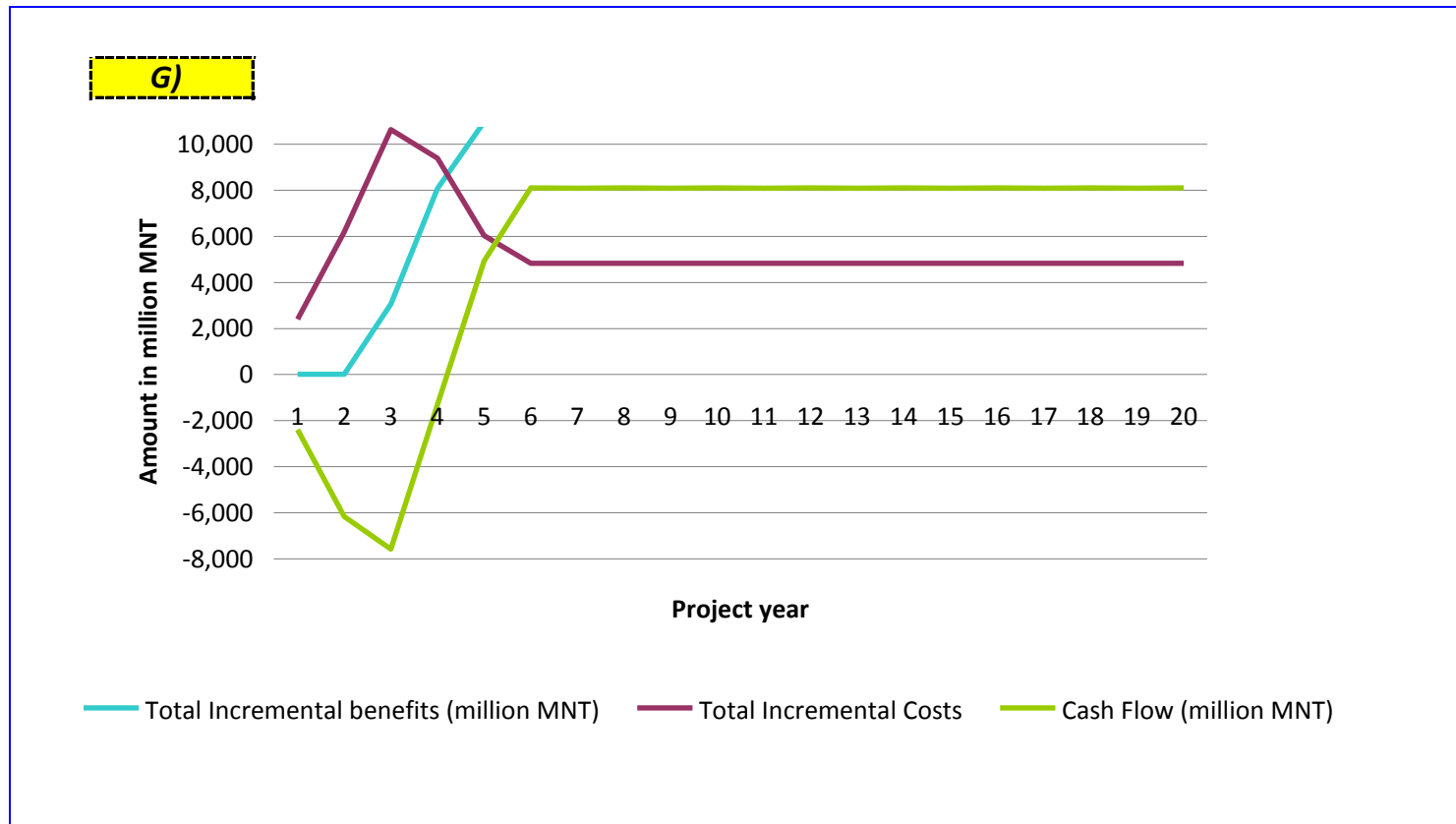
E)	NET INCREMENTAL BENEFITS								NET INCREMENTAL COSTS			Cash Flow (million MNT)
	PHG	WG	VC	SME	Coops	Proxy labour		Total Incremental benefits (million MNT)	Economic investment Costs	Economic recurrent Costs	Total Incremental Costs	
Project year												
1	0	0	0	0	0	0	0	0	2,394	0	2,394	-2,394
2	0	0	0	0	0	0	0	0	4,630	1,546	6,176	-6,176
3	672	2,120	272	0	0	-12		3,052	5,768	4,862	10,630	-7,578
4	1,343	4,239	544	902	1,049	-12		8,066	3,958	5,421	9,379	-1,314
5	2,015	4,239	816	1,803	2,097	-12		10,958	0	6,029	6,029	4,929
6	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
7	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
8	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
9	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
10	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
11	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
12	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
13	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
14	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
15	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
16	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
17	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
18	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
19	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
20	2,015	4,239	816	2,705	3,146	-12		12,909	0	4,818	4,818	8,091
				NPV at 10% ('million)	27,403	Current GoM Bond rate is applied as Discount rate						
				BCR	1.66							
				EIRR	28%					92,774	55,785	

a/ Refer also Annex-1.10 & 1.12 for further details

TABLE-F: SENSITIVITY ANALYSIS

F)				
SENSITIVITY ANALYSIS (SA)				
	Δ%	Link with the risk matrix	IRR	NPV 1/
Basecase scenario			28%	27,403
Project benefits	-20%	lack of financial capacity	19%	12,291
Project costs	15%	inadequate profit margins and poor capacity of groups	16%	8,844
Project benefits	-15%			
2 years lag in benefits.		lack of quality inputs, weak services	20%	18,791
Project benefits	-25%	climate risks, poor access etc	16%	8,512
Input prices	25%			
1/ NPV is in million MNT discounted at 10%				

TABLE-G: GRAPH SHOWING COSTS AND BENEFITS BY YEAR



Annex-1: SOURCE DATA: Excel printout from FARMOD file: Mongolia.mod

Annex-1.1 PHG households subproject: Financial and economic budgets (3,320 households)

Mongolia PMPMD_AF PHG households subproject Subproject Model FINANCIAL BUDGET (DETAILED) (In MNT '000)		April -- March											
		Without Project		With Project					Increments				
		1 to 20	1 to 2	3	4	5 to 20	1 to 2	3	4	5 to 20			
Main Production													
Pasture productivity	44,911	44,911	89,556	134,202	178,848	-	44,646	89,292	133,937				
Mortality reduction	-	-	794,880	1,589,760	2,384,640	-	794,880	1,589,760	2,384,640				
Sub-total Main Production	44,911	44,911	884,436	1,723,962	2,563,488	-	839,526	1,679,052	2,518,577				
Cash Flow Before Financing	44,911	44,911	884,436	1,723,962	2,563,488	-	839,526	1,679,052	2,518,577				

Mongolia PMPMD_AF PHG households subproject Subproject ECONOMIC BUDGET (DETAILED) (In MNT '000)		April -- March											
		Without Project		With Project					Increments				
		1 to 20	1 to 2	3	4	5 to 20	1 to 2	3	4	5 to 20			
Main Production													
Pasture productivity	35,929	35,929	71,645	107,362	143,078	-	35,717	71,433	107,150				
Mortality reduction	-	-	635,904	1,271,808	1,907,712	-	635,904	1,271,808	1,907,712				
Sub-total Main Production	35,929	35,929	707,549	1,379,170	2,050,790	-	671,621	1,343,241	2,014,862				
Cash Flow	35,929	35,929	707,549	1,379,170	2,050,790	-	671,621	1,343,241	2,014,862				

IRR = None, NPV = 10,261,757.92

Annex-1.2 Value chain subproject, economic and financial budgets (1,250 households) a/

Mongolia PMPMD_AF VC households Subproject M										
April -- March										
ECONOMIC BUDGET (DETAILED) (In MNT '000)	Without Project		With Project			Increments				
	1 to 20	1 to 2	3	4	5 to 20	1 to 2	3	4	5 to 20	
	Main Production									
Enhance incomes	-	-	272,160	544,320	816,480	-	272,160	544,320	816,480	
Cash Flow	-	-	272,160	544,320	816,480	-	272,160	544,320	816,480	

IRR = None, NPV = 4,158,359.65

Mongolia PMPMD_AF VC households Subproject Model										
April -- March										
FINANCIAL BUDGET (DETAILED) (In MNT '000)	Without Project		With Project			Increments				
	1 to 20	1 to 2	3	4	5 to 20	1 to 2	3	4	5 to 20	
	Main Production									
Enhance incomes	-	-	340,200	680,400	1,020,600	-	340,200	680,400	1,020,600	
Cash Flow Before Financing	-	-	340,200	680,400	1,020,600	-	340,200	680,400	1,020,600	

IRR = None, NPV = 5,197,949.56

Annex-1.3 WG households subproject, economic budget (864 households)

Mongolia PMPMD_AF WG households subproject Subproject Model ECONOMIC BUDGET (AGGREGATED) (In MNT '000)										
April -- March										
	Without Project		With Project				Increments			
	1	2 to 20	1	2	3	4 to 20	1	2	3	4 to 20
Main Production										
Microenterprises, sales income	-	-	-	-	2,119,543	4,239,086	-	-	2,119,543	4,239,086
Proxy workdays	58,320	11,664	58,320	5,832	-	-	-	-5,832	-11,664	-11,664
Sub-total Main Production	58,320	11,664	58,320	5,832	2,119,543	4,239,086	-	-5,832	2,107,879	4,227,422
Production Cost										
Sewing unit	-	-	-	313,470	545,778	464,616	-	313,470	545,778	464,616
Tailoring unit	-	-	-	426,951	946,145	1,038,388	-	426,951	946,145	1,038,388
Vegetable cultivation	-	-	-	41,456	56,992	31,072	-	41,456	56,992	31,072
Boot-making unit	-	-	-	33,502	50,803	34,603	-	33,502	50,803	34,603
Concrete block making unit	-	-	-	334,724	673,304	677,160	-	334,724	673,304	677,160
Felt leather unit	-	-	-	239,112	451,332	424,440	-	239,112	451,332	424,440
Tyre retreading unit	-	-	-	29,014	49,692	41,355	-	29,014	49,692	41,355
Dairy processing unit	-	-	-	23,122	51,482	56,719	-	23,122	51,482	56,719
Vegetable processing	-	-	-	105,190	221,720	233,060	-	105,190	221,720	233,060
Sub-Total Production Cost	-	-	-	1,546,541	3,047,248	3,001,413	-	1,546,541	3,047,248	3,001,413
OUTFLOWS	-	-	-	1,546,541	3,047,248	3,001,413	-	1,546,541	3,047,248	3,001,413
Cash Flow	58,320	11,664	58,320	-1,540,709	-927,704	1,237,674	-	-1,552,373	-939,368	1,226,010

IRR = 39.4%, NPV = 4,306,774.83

Annex-1.4 WG households subproject, financial budget (864 households) a/

Mongolia PMPMD_AF WG households subproject Subproject Model FINANCIAL BUDGET (AGGREGATED) (In MNT '000)										
April -- March										
	Without Project		With Project				Increments			
	1	2 to 20	1	2	3	4 to 20	1	2	3	4 to 20
Main Production										
Microenterprises, sales income	-	-	-	-	2,649,429	5,298,858	-	-	2,649,429	5,298,858
Proxy workdays	58,320	11,664	58,320	5,832	-	-	-	-5,832	-11,664	-11,664
Sub-total Main Production	58,320	11,664	58,320	5,832	2,649,429	5,298,858	-	-5,832	2,637,765	5,287,194
Production Cost										
Sewing unit	-	-	-	391,838	682,223	580,770	-	391,838	682,223	580,770
Tailoring unit	-	-	-	533,689	1,182,681	1,297,985	-	533,689	1,182,681	1,297,985
Vegetable cultivation	-	-	-	51,820	77,963	52,286	-	51,820	77,963	52,286
Boot-making unit	-	-	-	41,877	63,504	43,254	-	41,877	63,504	43,254
Concrete block making unit	-	-	-	421,241	858,924	875,367	-	421,241	858,924	875,367
Felt leather unit	-	-	-	298,890	564,165	530,550	-	298,890	564,165	530,550
Tyre retreading unit	-	-	-	36,268	62,115	51,694	-	36,268	62,115	51,694
Dairy processing unit	-	-	-	28,903	68,645	79,485	-	28,903	68,645	79,485
Vegetable processing	-	-	-	131,487	282,010	301,045	-	131,487	282,010	301,045
Sub-Total Production Cost	-	-	-	1,936,011	3,842,229	3,812,435	-	1,936,011	3,842,229	3,812,435
OUTFLOWS	-	-	-	1,936,011	3,842,229	3,812,435	-	1,936,011	3,842,229	3,812,435
Cash Flow Before Financing	58,320	11,664	58,320	-1,930,179	-1,192,800	1,486,423	-	-1,941,843	-1,204,464	1,474,759
Cash Flow After Financing	58,320	11,664	58,320	-1,930,179	-1,192,800	1,486,423	-	-1,941,843	-1,204,464	1,474,759
Farm Family Benefits After Financing	58,320	11,664	58,320	-1,930,179	-1,192,800	1,486,423	-	-1,941,843	-1,204,464	1,474,759

IRR = 37.8%, NPV = 5,068,167.14

Annex-1.5 SME households subproject, economic budget (1,800 households) a/

Mongolia
PMPMD_AF
SME subproject Subproject Model
ECONOMIC BUDGET (AGGREGATED)
(In MNT '000)

	April -- March											
	Without Project		With Project					Increments				
	1	2 to 20	1	3	4	5	6 to 20	1 to 2	3	4	5	6 to 20
Main Production												
SME, sales income	-	-	-	-	901,598	1,803,197	2,704,795	-	-	901,598	1,803,197	2,704,795
Proxy workdays	19,440	-	19,440	-	-	-	-	-	-	-	-	-
Sub-total Main Production	19,440	-	19,440	-	901,598	1,803,197	2,704,795	-	-	901,598	1,803,197	2,704,795
Production Cost												
SME Felt production	-	-	-	54,180	104,364	154,548	150,552	-	54,180	104,364	154,548	150,552
SME Dairy processing	-	-	-	82,339	144,014	205,690	185,026	-	82,339	144,014	205,690	185,026
SME Organic farm produce	-	-	-	184,568	314,521	444,474	389,858	-	184,568	314,521	444,474	389,858
SME Greenhouse cultivation	-	-	-	389,286	436,302	483,318	141,048	-	389,286	436,302	483,318	141,048
SME meat processing	-	-	-	128,142	158,692	189,241	91,649	-	128,142	158,692	189,241	91,649
Sub-Total Production Cost	-	-	-	838,516	1,157,893	1,477,271	958,133	-	838,516	1,157,893	1,477,271	958,133
OUTFLOWS	-	-	-	838,516	1,157,893	1,477,271	958,133	-	838,516	1,157,893	1,477,271	958,133
Cash Flow	19,440	-	19,440	-838,516	-256,295	325,926	1,746,662	-	-838,516	-256,295	325,926	1,746,662

IRR = 69.4%, NPV = 6,175,489.62

Annex-1.6 SME households subproject, financial budget (1800 households)

Mongolia PMPMD_AF SME subproject Subproject Model FINANCIAL BUDGET (AGGREGATED) (In MNT '000)												
April -- March												
Without Project		With Project						Increments				
1	2 to 20	1	3	4	5	6 to 20	1 to 2	3	4	5	6 to 20	
Main Production												
SME, sales income	-	-	-	-	1,126,998	2,253,996	3,380,994	-	-	1,126,998	2,253,996	3,380,994
Proxy workdays	19,440	-	19,440	-	-	-	-	-	-	-	-	-
Sub-total Main Production	19,440	-	19,440	-	1,126,998	2,253,996	3,380,994	-	-	1,126,998	2,253,996	3,380,994
Production Cost												
SME Felt production	-	-	-	67,725	132,525	197,325	194,400	-	67,725	132,525	197,325	194,400
SME Dairy processing	-	-	-	102,924	180,018	257,112	231,282	-	102,924	180,018	257,112	231,282
SME Organic farm produce	-	-	-	230,711	419,612	608,513	566,703	-	230,711	419,612	608,513	566,703
SME Greenhouse cultivation	-	-	-	486,608	545,378	604,148	176,310	-	486,608	545,378	604,148	176,310
SME meat processing	-	-	-	160,178	198,365	236,552	114,561	-	160,178	198,365	236,552	114,561
Sub-Total Production Cost	-	-	-	1,048,145	1,475,897	1,903,649	1,283,256	-	1,048,145	1,475,897	1,903,649	1,283,256
OUTFLOWS	-	-	-	1,048,145	1,475,897	1,903,649	1,283,256	-	1,048,145	1,475,897	1,903,649	1,283,256
Cash Flow Before Financing	19,440	-	19,440	-1,048,145	-348,899	350,348	2,097,738	-	-1,048,145	-348,899	350,348	2,097,738
Cash Flow After Financing	19,440	-	19,440	-1,048,145	-348,899	350,348	2,097,738	-	-1,048,145	-348,899	350,348	2,097,738
Farm Family Benefits After Financing	19,440	-	19,440	-1,048,145	-348,899	350,348	2,097,738	-	-1,048,145	-348,899	350,348	2,097,738

IRR = 66.7%, NPV = 7,338,076.43

Annex-1.7 Cooperative households subproject, economic budget (2,088 households)

Mongolia PMPMD_AF Cooperatives subproject Subproject Model												
ECONOMIC BUDGET (AGGREGATED)												
(In MNT '000)												
April -- March												
	Without Project		With Project					Increments				
	1	2 to 20	1	3	4	5	6 to 20	1 to 2	3	4	5	6 to 20
Main Production												
Cooperative, sales income	-	-	-	-	1,048,698	2,097,396	3,146,094	-	-	1,048,698	2,097,396	3,146,094
Proxy workdays	19,440	-	19,440	-	-	-	-	-	-	-	-	-
Sub-total Main Production	19,440	-	19,440	-	1,048,698	2,097,396	3,146,094	-	-	1,048,698	2,097,396	3,146,094
Production Cost												
SME Dairy processing	-	-	-	102,924	180,018	257,112	231,282	-	102,924	180,018	257,112	231,282
SME Organic farm produce	-	-	-	230,711	393,152	555,593	487,323	-	230,711	393,152	555,593	487,323
SME Greenhouse cultivation	-	-	-	486,608	545,378	604,148	176,310	-	486,608	545,378	604,148	176,310
SME meat processing	-	-	-	160,178	198,365	236,552	114,561	-	160,178	198,365	236,552	114,561
Sub-Total Production Cost	-	-	-	980,420	1,316,912	1,653,404	1,009,476	-	980,420	1,316,912	1,653,404	1,009,476
OUTFLOWS	-	-	-	980,420	1,316,912	1,653,404	1,009,476	-	980,420	1,316,912	1,653,404	1,009,476
Cash Flow	19,440	-	19,440	-980,420	-268,214	443,993	2,136,618	-	-980,420	-268,214	443,993	2,136,618

IRR = 72.6%, NPV = 7,640,953.48

Annex-1.8 Cooperative households subproject, financial budget (2,088 households)

Mongolia PMPMD_AF Cooperatives subproject Subproject Model FINANCIAL BUDGET (AGGREGATED) (In MNT '000)												
	April -- March											
	Without Project		With Project					Increments				
	1	2 to 20	1	3	4	5	6 to 20	1 to 2	3	4	5	6 to 20
Main Production												
Cooperative, sales income	-	-	-	-	1,310,873	2,621,745	3,932,618	-	-	1,310,873	2,621,745	3,932,618
Proxy workdays	19,440	-	19,440	-	-	-	-	-	-	-	-	-
Sub-total Main Production	19,440	-	19,440	-	1,310,873	2,621,745	3,932,618	-	-	1,310,873	2,621,745	3,932,618
Production Cost												
SME Dairy processing	-	-	-	128,655	225,023	321,390	289,103	-	128,655	225,023	321,390	289,103
SME Organic farm produce	-	-	-	288,388	524,514	760,641	708,379	-	288,388	524,514	760,641	708,379
SME Greenhouse cultivation	-	-	-	608,259	681,722	755,184	220,388	-	608,259	681,722	755,184	220,388
SME meat processing	-	-	-	200,222	247,956	295,689	143,201	-	200,222	247,956	295,689	143,201
Sub-Total Production Cost	-	-	-	1,225,524	1,679,214	2,132,904	1,361,070	-	1,225,524	1,679,214	2,132,904	1,361,070
OUTFLOWS	-	-	-	1,225,524	1,679,214	2,132,904	1,361,070	-	1,225,524	1,679,214	2,132,904	1,361,070
Cash Flow Before Financing	19,440	-	19,440	-1,225,524	-368,342	488,841	2,571,548	-	-1,225,524	-368,342	488,841	2,571,548
Cash Flow After Financing	19,440	-	19,440	-1,225,524	-368,342	488,841	2,571,548	-	-1,225,524	-368,342	488,841	2,571,548
Farm Family Benefits After Financing	19,440	-	19,440	-1,225,524	-368,342	488,841	2,571,548	-	-1,225,524	-368,342	488,841	2,571,548

IRR = 69.9%, NPV = 9,109,165.18

Annex-1.9 Computation of economic investment Project costs (amounts in 000 units)

Mongolia PMPMD_Phase II Calculation of Economic costs (US\$ '000)					
	Base Cost				
	2017	2018	2019	2020	Total
I. Investment Costs					
A. civilworks	143	1,065	1,615	850	3,672
B. Vehicles, equipment and materials	88	-	-	-	88
C. Goods, services and inputs	399	669	641	416	2,125
D. Training and workshop	189	245	245	276	956
E. Credit	680	760	360	-	1,800
F. Project grants	-	10	85	85	180
Total Investment Costs	1,499	2,749	2,946	1,627	8,821
II. Recurrent Costs					
A. Staff salaries and allowances	379	379	379	379	1,517
B. Operations and manaitenance	83	98	98	98	377
Total Recurrent Costs	462	477	477	477	1,894
Total BASELINE COSTS	1,961	3,226	3,423	2,104	10,714
Physical Contingencies	12	58	86	48	204
Subtotal Price Contingencies	25	103	185	148	461
Total PROJECT COSTS	1,998	3,388	3,695	2,299	11,380
Taxes	125	266	336	221	947
Foreign Exchange	233	563	751	429	1,977
ECONOMIC COSTS:					
Total cost less	1,998	3,388	3,695	2,299	
Taxes	125	266	336	221	
Credit	680	760	360	-	
Price contingencies	25	103	185	148	
Total deductions	830	1,129	881	368	
Economic costs USD	1,168	2,259	2,813	1,931	
Economic costs MNT	2,394,482	4,630,124	5,767,568	3,958,376	

Annex-1.10 Summary of Project Economic Budget (amount in million MNT)

Mongolia PMPMD_AF Project Summary ECONOMIC BUDGET (AGGREGATED) (In MNT Million)															
	Without Project		With Project						April -- March					Increments	
	1	2 to 20	1	2	3	4	5	6 to 20	1	2	3	4	5	6 to 20	
Main Production															
Pasture management	36	36	36	36	708	1,379	2,051	2,051	-	-	672	1,343	2,015	2,015	
Microenterprises, sales income	-	-	-	-	2,120	4,239	4,239	4,239	-	-	2,120	4,239	4,239	4,239	
SME, sales income	-	-	-	-	-	902	1,803	2,705	-	-	-	902	1,803	2,705	
Cooperative, sales income	-	-	-	-	-	1,049	2,097	3,146	-	-	-	1,049	2,097	3,146	
VC enhanced incomes	-	-	-	-	272	544	816	816	-	-	272	544	816	816	
Proxy workdays	97	12	97	6	-	-	-	-	-	-6	-12	-12	-12	-12	
Sub-total Main Production	133	48	133	42	3,099	8,113	11,007	12,957	-	-6	3,052	8,065	10,959	12,910	
Production Cost															
Sewing unit	-	-	-	313	546	465	465	465	-	313	546	465	465	465	
Tailoring unit	-	-	-	427	946	1,038	1,038	1,038	-	427	946	1,038	1,038	1,038	
Vegetable cultivation	-	-	-	41	57	31	31	31	-	41	57	31	31	31	
Boot-making unit	-	-	-	34	51	35	35	35	-	34	51	35	35	35	
Concrete block making unit	-	-	-	335	673	677	677	677	-	335	673	677	677	677	
Felt leather unit	-	-	-	239	451	424	424	424	-	239	451	424	424	424	
Tyre retreading unit	-	-	-	28	45	35	35	35	-	28	45	35	35	35	
Dairy processing unit	-	-	-	23	51	57	57	57	-	23	51	57	57	57	
Vegetable processing	-	-	-	105	222	233	233	233	-	105	222	233	233	233	
SME Felt production	-	-	-	-	54	104	155	151	-	-	54	104	155	151	
SME Dairy processing	-	-	-	-	185	316	446	391	-	-	185	316	446	391	
SME Organic farm produce	-	-	-	-	415	708	1,000	877	-	-	415	708	1,000	877	
SME Greenhouse cultivation	-	-	-	-	876	958	1,041	247	-	-	876	958	1,041	247	
SME meat processing	-	-	-	-	288	341	393	157	-	-	288	341	393	157	
Sub-Total Production Cost	-	-	-	1,546	4,862	5,421	6,029	4,818	-	1,546	4,862	5,421	6,029	4,818	
Other Costs															
PMPMD investment costs	-	-	2,394	4,630	5,768	3,958	-	-	2,394	4,630	5,768	3,958	-	-	
OUTFLOWS	-	-	2,394	6,176	10,629	9,380	6,029	4,818	2,394	6,176	10,629	9,380	6,029	4,818	
Cash Flow	133	48	-2,261	-6,134	-7,530	-1,267	4,978	8,140	-2,394	-6,182	-7,578	-1,314	4,930	8,092	

IRR = 27.8%, NPV = 27,401.39

Annex-1.11 Adoption rates assumed in EFA (# of households or units)

Mongolia PMPMD_AF Project Summary ACTIVITY LEVELS: households & units (In Units)		April -- March										
		Total participating					Increments					
		Unit	hh or units	With Project								
		1	2	3	4	5 to 20	1	2	3	4	5 to 20	
Activity Patterns:												
With project situation												
PHG household a/	hh	3,312	-	-	1,104.0	2,208.0	3,312.0	-	-	1,104.0	2,208.0	3,312.0
Value chain household	hh	1,250	-	-	315.0	630.0	945.0	-	-	315.0	630.0	945.0
Sewing unit b/	#	16.2	-	6.1	12.2	12.2	12.2	-	6.1	12.2	12.2	12.2
Tailoring unit b/	#	16.2	-	6.1	12.2	12.2	12.2	-	6.1	12.2	12.2	12.2
Vegetable cultivation b/	#	10.8	-	4.1	8.1	8.1	8.1	-	4.1	8.1	8.1	8.1
Boots-making units b/	#	10.8	-	4.1	8.1	8.1	8.1	-	4.1	8.1	8.1	8.1
Concrete blocks making unit b/	#	10.8	-	4.1	8.1	8.1	8.1	-	4.1	8.1	8.1	8.1
Felt, leather unit b/	#	10.8	-	4.1	8.1	8.1	8.1	-	4.1	8.1	8.1	8.1
Tyre re-treading unit b/	#	10.8	-	4.1	8.1	8.1	8.1	-	4.1	8.1	8.1	8.1
Dairy processing unit	#	10.8	-	4.1	8.1	8.1	8.1	-	4.1	8.1	8.1	8.1
Vegetables processing b/	#	10.8	-	4.1	8.1	8.1	8.1	-	4.1	8.1	8.1	8.1
SME Felt production c/	#	3.6	-	-	0.9	1.8	2.7	-	-	0.9	1.8	2.7
SME Dairy production c/	#	3.6	-	-	0.9	1.8	2.7	-	-	0.9	1.8	2.7
SME Organic farm produce c/	#	3.6	-	-	0.9	1.8	2.7	-	-	0.9	1.8	2.7
SME Wnter greenhouse produce c/	#	3.6	-	-	0.9	1.8	2.7	-	-	0.9	1.8	2.7
SME Meat processing c/	#	3.6	-	-	0.9	1.8	2.7	-	-	0.9	1.8	2.7
Coop Organic farm produce d/	#	4.5	-	-	1.1	2.3	3.4	-	-	1.1	2.3	3.4
Coop Wnter greenhouse produce d/	#	4.5	-	-	1.1	2.3	3.4	-	-	1.1	2.3	3.4
Coop Meat processing d/	#	4.5	-	-	1.1	2.3	3.4	-	-	1.1	2.3	3.4
Coop Dairy production d/	#	4.5	-	-	1.1	2.3	3.4	-	-	1.1	2.3	3.4

a/ 100% participation and adoption rate by PHGs; others 75% adoption rate
b/ micro-enterprises by 108 WGs involving 864 households
c/ 18 SME units by 1800 households
d/ 18 units under cooperatives by 2088 households (50% from PHG members and 50% from WG members)

Annex-1.12: Sensitivity analysis and Switching Values (validation of FARMOD results)

ECONOMIC ANALYSIS

Country: **Mongolia** Discount rate:DR **0.1** 10%
 Project: **PMPMD Additional Financcing**
 (amount in million MNT)

	Project Year																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Benefits																				
Incremental benefits	0	0	3052	8065	10959	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910
Other benefits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other benefits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other benefits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Incremental benefits	0	0	3052	8065	10959	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910	12910
Costs																				
Investment costs	2394	4630	5768	3958																
Production costs		1546	4862	5421	6029	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818
Incremental costs	2394	6176	10630	9379	6029	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818	4818
Incremental net benefits	-2394	-6176	-7578	-1314	4930	8092	8092	8092	8092	8092	8092	8092	8092	8092	8092	8092	8092	8092	8092	8092

Basecase results discounted:	10%	Benefits lagged by 2 year DR at	10%
NPV of benefit streams discounted at	10% 75,577	NPV of benefit streams discounted at	10% 66,962
NPV of costs stream discounted at	10% 48,171	NPV of costs stream discounted at	10% 48,171
NPV of project discounted at	10% 27,406	NPV of project discounted at	10% 18,791
BCR- discounted benefits & costs at	10% 1.57	BCR- discounted benefits & costs at	10% 1.39
IRR	28%	IRR	20%

Results of Sensitivity Analysis using 10% discount rate:

Project Performance indicators	Costs increased by				Benefits down by				Both cost increase & benefits down				
	10%	15%	20%	25%	10%	15%	20%	25%	10%	15%	20%	25%	
NPV of at discount rate of	10%	22,589	20,181	17,772	15,364	19,849	16,070	12,291	8,512	15,032	8,844	2,657	-3,531
BCR at discount rate of	10%	1.43	1.36	1.31	1.26	1.41	1.33	1.26	1.18	1.28	1.16	1.05	0.94
IRR		24%	22%	20%	19%	23%	21%	19%	16%	20%	16%	12%	8%

Switching Value Analysis:

Switching Value:	Appraisal	Switching value	% change
Total Benefits at 10% DR	75,577	48,171	-36
Total Costs at 10% DR	48,171	75,577	57

Annex-1.13 Prices used in EFA

Mongolia PMPMD_AF ECONOMIC and FINANCIAL PRICES (In MNT)			
	Unit	Economic 2017 to 2036	Financial 2017 to 2036
Outputs			
Pasture management			
Pasture productivity	ton	9,600	12,000
Sheep	sheep	120,000	150,000
Goat	goat	96,000	120,000
Buck	buck	160,000	200,000
Bull	bull	640,000	800,000
Cattle	cattle	640,000	800,000
Milk	litre	560	700
Mutton	kg	1,600	2,000
Hay, forage	ton	9,600	12,000
Beef	kg	2,400	3,000
Mortality reduction	sheep, goat	96,000	120,000
Microenterprises, sales income			
Sewing unit, annual income	annual	40,608,000	50,760,000
Tailoring unit, sales	annual	95,200,000	119,000,000
Vegetable cultivation, sales	annual	13,480,000	16,850,000
Boot-making unit, sales	annual	22,120,000	27,650,000
Cement block unit, sales	annual	114,832,000	143,540,000
Felt leather unit, sales	annual	121,056,000	151,320,000
Tyre retreading unit, income	annual	8,352,000	10,440,000
Dairy processing, sales	annual	8,192,000	10,240,000
Vegetable processing, sales	annual	31,600,000	39,500,000
SME, sales income			
Felt production unit, sales	annual	69,600,000	87,000,000
Dairy processing, sales	annual	106,480,000	133,100,000
Organic vegetable production, sales	annual	391,520,000	489,400,000
Greenhouse cultivation, sales	annual	316,888,000	396,110,000
Meat processing, sales	annual	117,288,000	146,610,000
Cooperative, sales income			
Organic vegetables	annual	391,520,000	489,400,000
Dairy processing	annual	106,480,000	133,100,000
Greenhouse production	annual	316,888,000	396,110,000
Meat processing	annual	117,288,000	146,610,000
VC enhanced incomes			
Enhance incomes	annual/hh	864,000	1,080,000
Proxy workdays			
Proxy work days under WOP/a	pers_day	7,200	7,200
Inputs			
Sewing unit			
Equipment	set	13,360,000	16,700,000
Production cost	annual	38,240,000	47,800,000
Tailoring unit			
Tools & machinery	set	896,000	1,120,000
Materials	annual	52,640,000	65,800,000
Power	annual	56,000	70,000
salaries	annual	32,160,000	40,200,000
Rent	annual	384,000	480,000
Transport	annual	224,000	280,000
Vegetable cultivation			
Farm equipment	annual	6,400,000	8,000,000
Processing facilities	annual	1,360,000	1,700,000
Operating expenses	annual	916,000	1,145,000
salaries	annual	1,560,000	1,950,000
Social charges at 12%	annual		160,000
Tax on profit at 10%	annual		1,500,000

Mongolia

PMPMD_AF

ECONOMIC and FINANCIAL PRICES

(In MNT)

	<u>Unit</u>	<u>Economic 2017 to 2036</u>	<u>Financial 2017 to 2036</u>
Boot-making unit			
Equipment set	set	4,000,000	5,000,000
Production costs	annual	1,216,000	1,520,000
Operating costs	annual	3,056,000	3,820,000
Concrete block making unit			
Equipment set	set	3,808,000	4,760,000
Materials	annual	74,080,000	92,600,000
Salaries	annual	9,520,000	11,900,000
Social charges	annual		1,400,000
Tax on profit	annual		2,170,000
Felt leather unit			
Equipment set	set	6,640,000	8,300,000
Materials	annual	34,400,000	43,000,000
Salaries	annual	18,000,000	22,500,000
Tyre retreading unit			
Equipment set	set	960,000	1,200,000
Building	annual	3,624,000	4,530,000
Materials	annual	432,000	540,000
salaries	annual	3,840,000	4,800,000
Power	annual	251,200	314,000
Social charges	annual		570,000
Taxes	annual		472,000
Dairy processing unit			
Dairy equipment	set	2,000,000	2,500,000
Operating expenses	annual	826,400	1,033,000
salaries	annual	5,760,000	7,200,000
labelling	annual	240,000	300,000
Packaging	annual	120,000	150,000
Power	annual	56,000	70,000
Social charges	annual		860,000
Tax on profit	annual		200,000
Vegetable processing			
Operating expenses	annual	20,960,000	26,200,000
salaries	annual	5,600,000	7,000,000
Power	annual	1,200,000	1,500,000
Packing	annual	960,000	1,200,000
Water	annual	52,800	66,000
Tax	annual		1,200,000
SME Felt production			
Investments	set	14,000,000	17,500,000
Production costs	annual	36,640,000	45,800,000
HR costs	annual	19,120,000	23,900,000
Tax	annual		2,300,000
SME Dairy processing			
Investment costs	set	38,400,000	48,000,000
HR costs	annual	22,560,000	28,200,000
Production costs	annual	41,808,000	52,260,000
Tax on profit	annual		5,200,000
SME Organic farm produce			
Investment costs	annual	91,600,000	114,500,000
Production costs	annual	82,560,000	103,200,000
HR costs	annual	61,832,000	77,290,000
Tax on proffit	annual		29,400,000
SME Greenhouse cultivation			
Investment costs	set	406,480,000	508,100,000
Production costs	annual	11,448,000	14,310,000
HR costs	annual	29,224,000	36,530,000
Tax on profit at 5%	annual		14,460,000
SME meat processing			
Investment costs	set	120,000,000	150,000,000
Production costs	annual	18,888,000	23,610,000
HR costs	annual	6,984,000	8,730,000
Tax on profits	annual		10,090,000

\a at the rate of MNT 1200/hr for 6 hours a day

Appendix IV. Financial Management assessment

I. Summary of FM Risk Assessment and Key Mitigation Measures

87. This working paper covers the assessment of financial management system and implementing arrangements for additional financing of the on-going Project for Market and Pasture Management Development (PMPMD) in Mongolia, mainly to: (a) review current Lead Project Agency and implementing arrangements and propose institutional setup for AF implementation efficiency; and (b) assess current fiduciary arrangements and recommend mitigation measures.

88. The overall fiduciary environment for utilizing donor funds is considered generally adequate in Mongolia²². The Government has strengthened its public financial management (PFM) framework and systems related to the donor funded project. There are valid and appropriate rules and regulations related to the Public Financial Management (FM) arrangements and all International Financial Institution (IFI) funded projects also required to abide by that. It has demonstrated its commitment to ensuring transparency by strengthening state scrutiny arrangements for public finances and foreign funded projects. The regulatory framework for public budget procurement is generally comprehensive and transparent. Open and competitive procurement process is the default method for IFI funded projects and also requires adequate public disclosure.

89. The institutional setup of current PMU found adequate for financial management and procurement. PMU staff has improved capacity and sufficient knowledge of IFAD funded project through implementation of current PMPMD. The project has applied an accounting software named "Aclous". PMU has established Project Implementation Manual (PIM). However, it is identified that Ministry of Food and Agriculture, the Lead Project Agency (LPA) has limited participation in project implementation. The LPA needs to build up control measures for the project to mitigate the overall fiduciary risk, including: (a) appointment of a Project Director on part-time basis to overall supervising project implementation; (b) strengthen the managerial capacity of PMU Manager and Accountant on project planning and budgeting, monitoring and reporting; (c) update the financial management manual in the existing PIM to include internal control system and (d) monitoring and following-up with the remedial actions during project implementation to ensure full compliance with the loan objective and arrangements.

90. According to the Financial Management Assessment, planning and reporting are also identified as weak points for management of PMPMD, the project shall prepare and submit IFAD for Non Objection a combined AWPB and Procurement Plan, reflecting activities with capital budgets from different financiers, by 60 days prior to implementing year and project annual progress report by 30 days after the project implementing year.

II. Project Administration and Management Arrangements

91. The IFAD loan proceeds equivalent to USD 9.06 million will be available for all expenditures on top of the ongoing loan project. The additional financing will be extended to the Mongolian Government on same terms and conditions. The principal of the additional financing is repayable in accordance with the agreed amortization schedule agreed with IFAD.

92. For implementation of the PMPMD AF, following arrangements need to be set up for loan administration and project management:

93. **Project Steering Committee (PSC).** A PSC, established at ministry level, will continue to provide overall policy and management directions for PMPMD AF implementation through regular meetings at least twice a year (every six months) and ad hoc ones on key issues. It shall be chaired by a senior government official from Ministry of Finance (MOF). Its secretary will be the PMPMD AF Project Director, and comprised by the heads of line ministries including MoF, MoFA, MoL, MoEGDT, the National Development and Innovation Committee, Mongol Bank, and National Chamber of Commerce. The representatives of other relevant government departments / other International Financial Institutions, relevant UN agencies and non-government organizations may be invited to attend the meetings depending on the need. The PSC will (a) provide strategic and policy guidance for the smooth implementation of the Project; (b) support inter-ministerial coordination of project

²² WB. 2015 Mongolia Public Financial Management Performance Report

activities; (c) preliminarily review and clarify draft AWPB for final to be approved by the Parliament; and (d) supervises PMUs and project activities during preparation and implementation.

94. In light of the shift in the PMPMD AF focus and increasing weight put on market development, the PSC will review the Terms of Reference of Project Director, Project Managers and each project staff position and staff competency, and obtain IFAD's no objection for the renewal of their contracts. Should there be a need for new staff, their recruitment will follow an open and competitive recruitment process.

95. **Project Director from Ministry of Food and Agriculture (MOFA).** The MOFA in its capacity as the Lead Project Agency (LPA), will have the overall oversight responsibility for the implementation. The Project Director will be a senior officer seconded from MOFA on part-time basis. The Project Director shall be supported by two Project Managers and other project personnel with key responsibilities including (a) responsible for overall project management and coordination;(b) overseeing the use of project resources; (c) communicate with IFAD and report to PSC and seek guidance as necessary; and (d) work closely with other relevant ministries and potential donor partners on project replication and scaling-up.

96. **Project Management Units (PMUs)** Two PMUs will be established at MOF and MOFA respectively. The PMU under MOFA will be responsible for overall project management and coordination participating aimags and soums for pasture management and marketing components. The MOFA PMU will ensure to recruit qualified and full-time staff with consideration of segregation of duties on FM, including Project Manager, Procurement Officer, an Accountant and Project Cashier. The Project Managers and PMUs will be responsible for day-to-day operations of the respective project components and report to the Project Director. The Project Accountant sitting in MOFA PMU will management of the Designated Account and Project Accounts and initiate Withdrawal Applications for effective flow of funds for project implementation. They will coordinate the State Auditor Office for a combined project auditing on annual basis.

97. MOF, as the implementing agency of the LGF component, will establish a PMU headed by the LGF Manager. The PMPMD AF LGF Manager will be responsible for planning and budgeting, service providers, supervision of contracts, financial management and Monitoring and Evaluation of LGF operations. LGF will elaborate its own AWP&B. IFAD Loan resources earmarked for the LGF will be transferred to MoF specific bank accounts opened for the LGF (operating expenses, credit lines and LGF capitalization). LGF operating expenses will be financed from: (i) interests earned on LGF resources deposited on interest-bearing accounts and fees collected from commercial banks for guarantees, and (ii) IFAD loan resources if needed. Should a need for additional staff be identified at the level of the LGF, these additional positions will be financed by MoF, subject to IFAD no objection.

III. FM Action Plan

Action	By whom	Completion Time
Review and update TOR for project accountant and staff related to financial management	PMU in consultation with IFAD	By 31 December, 2016
Review and update PIM, especially chapter on FM guidelines and internal control systems	MOFA PMU	By 31 December, 2016
Prepare first AWPB & procurement plan and submit to IFAD Non Objection	PMUs	Before 1 October 2017 (60 days prior of project start-up)
Appointment of auditor under ToR and conditions acceptable to IFAD	NAO	After project enter into force

Annex I Financial Management Assessment Questionnaire (fmaq)²³

Project # Project For Market and Pasture Management Development_ Additional Financing	Date : 15 April 2016
Implementing Entity: Ministry of Food and Agriculture	
Self-assessment completed by ALANTAINYAM.D(PMU)	Date : 11 April 2016
Review completed by Han Lei, ACPO	Date : 15 April 2016

GUIDANCE: NOTES

The FMAQ provides an indicative list of issues and questions to be considered in the financial management assessment. It is clearly difficult for a single questionnaire to adequately cover the diversity of IFAD's operating environment and projects. The FMAQ should be customized to better address specific project circumstances by adapting the questions (adding, deleting, or modifying) to better suit the assessment objectives.

The FMAQ has been designed to primarily cover an assessment of a Lead Project Agency which is a Government Department and/or a PIU.

Before commencing the assessment it is essential to have a clear view of the probable project implementation arrangements - where the project financial management arrangements are administered through a PIU which primarily uses stand-alone financial systems the PIU is effectively the Implementing Entity and so focus of the FMA should be on the financial management arrangements in the PIU.

Advice on applying the Financial Management Questionnaire (FMAQ) for a self -assessment should be sought from the CFS Finance officer.

If there is more than one implementing agency, an FMAQ should be completed for each entity that will receive and disburse project funds.

²³ This questionnaire should be used as guidance for and in support of the Summary Project Fiduciary Risk Assessment @ Design (Annex III).

Implementing Entity:

	Topic	Response	Remarks
1.	Organization and Staffing		
	<p>Implementing Entity</p> <p>NOTE: In the case of a Government Department, the FMS should initially focus on the status of the country PFM systems in order to gauge level of fiduciary risks to which the proposed project may be exposed. Once an understanding of the PFM environment has been ascertained, the FMS should switch focus down to project level and focus on the department(s) or unit(s) that will financially administer the project.</p>		
1.1	Which entity is the LPA? What is the entity's legal status?	The Ministry of Food and Agriculture (MOFA, former Ministry of Food, Agriculture and Light Industries) has been appointed as the LPA for the overall responsibility for project implementation for PMPMD phase I. They remain the LPA for AF.	
1.2	Will financial management of the project be the responsibility of a the LPA or be undertaken within the-PIU?	A Project Management Unit (PMU) has established, has been vested with executive responsibility. The Ministry of Finance, also the Chair of the Project Steering Committee (PSC) will have the primary responsibility for the oversight of the project's financial resources, DA management. The daily management of disbursement and fund flow management is under PMU.	
1.3	Has the entity implemented a donor financed project in the past - if so, please provide details?	The overall organization and management structure remains from PMPMD phase I.	
	Staffing		
1.4	What is the (proposed) organizational structure of the accounting department? Attach an organization chart.	See attachment	
1.5	Identify the (proposed) accounts staff, including job title, responsibilities, educational background and professional experience. Attach job descriptions and CVs of key accounting staff.	Chief Accountant has been appointed to PMPMD Phase I. Project Manager of PMU, Accountant and key staff have been working with IFAD previous projects.	

Topic		Response	Remarks
1.6	Are written position descriptions that clearly define duties, responsibilities, lines of supervision, and limits of authority for all of the officers, managers, and staff?	Yes. Draft TOR was provided in the PMPMD Design document. The TOR will be reviewed and updated.	
1.7	Is the finance and accounts staff adequately qualified and experienced?	Yes. The accountant has institutional knowledge for IFAD project implementation.	
1.8	Are the project accounts and finance staff trained in IFAD procedures?	Yes. They participated in IFAD regional FM training workshop held in Thailand in 2013.	
1.9	Are any Finance Staff appointed on contract What is the duration of the contracts Indicate key positions not contracted yet, and the estimated date of appointment	Full time qualified project staff has been appointed on IFAD contract till the completion of the project.	
1.10	What is training policy for the finance and accounting staff?	FM guideline with the procedure and processes will be updated.	
1.11	Is there evidence that finance staff are regularly transferred to other Government departments At what frequency are personnel transferred?	The key positions of PMU are stable The Chief Accountant is unlikely to be transferred during project implementation.	
1.12	Is the project finance and accounting function staffed adequately	Yes.	

Topic		Response	Remarks
2.	Budgeting		
2.1	Who is responsible for preparation and approval of project budgets?	The PMU prepares AWPB and the budget will submit to Parliament for approval on annual basis.	
2.2	Are project budgets prepared for all significant project activities in sufficient detail to provide a meaningful tool with which to monitor subsequent performance?	Yes. The PMU shall apply AWPB template with non-objection by IFAD. The Accountant collects data and monitor project budget performance.	
2.3	Are procedures in place to plan project activities, collect information from the units in charge of the different components, and prepare the budgets?	Yes. The preliminary information will be provided from Soum level and PMU component focal point will then consolidate and accountant reviews unit cost and budget. The Project Manager finalize the draft and submit it through PSC.	
3	Funds Flow/Disbursement Arrangements		
3.1	Does the Implementing Entity have previous experience of using imprest fund and donor funding SOE procedures? Were there any problems or issues encountered by project staff in the operation of the imprest fund or SoE procedures in the past?	Yes. IFAD has projects in Mongolia over a decade. PMU has institutional knowledge on IFAD disbursement procedure and related requirements. No problems identified by previous SIS.	
3.2	Does the Implementing Entity have experience in the management of disbursements from IFAD or other donors? Have there been the major problems in the past in receipt of funds by the entity?	Yes. They are familiar with IFAD disbursement procedure.	
3.3	Does the entity have/need to develop capacity to manage foreign exchange risks?	Yes. Mongolian Tugrog (MNT) has a strong depreciation in recent years. The project has gains from interested accumulated from DA and LGF.	

Topic		Response	Remarks
3.4	<p>Are the beneficiaries required to contribute to project costs?</p> <p>How are payments made for the counterpart funds?</p> <p>If counterpart funds are to be contributed in kind (in the form of labour), are proper guidelines formulated to record and value the labour contribution?</p>	<p>Yes. Beneficiaries contributes through following (i) Investments (such as tractors) will be provided to herders as incentive to organize in groups, and repayments will establish PHGs; and (ii)RF Existing Revolving Funds (RF) formed from repayments of women's groups loans at the level of commercial banks.</p>	
3.5	<p>Is part of the project implemented by communities or NGOs?</p> <p>Does the PIU have the necessary reporting and monitoring features built into its systems to track the use of project proceeds by such agencies?</p>	<p>Some project activities will be implemented by the NGO. Financial reporting and monitoring will be built on existing systems at project start to track use of all project proceeds.</p>	
3.6	<p>Describe (proposed) project funds flow arrangements; (attach flow chart and explanation of the flow of funds from IFAD, government and other financiers.</p>	<p>The current fund flow will apply in the AF. The MOF will represent the respective levels of government to receive and pass on the loan funds. The funds will be transferred to PMU for project implementation in accordance with expenditures incurred under approved AWPBs.</p>	
3.7	<p>In which bank will the Imprest Account be opened?</p>	<p>The designated account will be opened and maintained by PMU. The DA will be opened at one of the national commercial banks.</p>	
3.8	<p>Are the (proposed) arrangements to transfer the proceeds of the financing (from the government / Finance Ministry) to the Implementing Entity satisfactory?</p>	<p>The fund flow is found acceptable.</p>	

Topic		Response	Remarks
4.	Internal Controls		
4.1	Segregation of duties - are the following functional responsibilities performed by different units or persons: (i) authorization to execute a transaction; (ii) recording of the transaction; and (iii) custody of assets involved in the transaction?	Yes. Planning and its approval, procurement and payment process shall be managed separately by qualified individuals. Project director Project Managers are authorized to approve while the preparation is done by project accountant and procurement officer.	
4.2	Are the functions of ordering, receiving, accounting for, and paying for goods and services appropriately segregated?	Yes. The duties of procurement and financial management have been segregated to two different persons.	
4.3	Are bank reconciliations prepared by someone other than those who make or approve payments?	The bank reconciliation prepared by the project accountant while payments are approved by Project Manager of PMU.	
5.	Accounting Systems, Policies and Procedures		
5.1	Does the entity have an integrated accounting system that allows for the proper recording of project financial transactions, including the allocation of expenditures in accordance with the respective components, disbursement categories, and sources of funds? Will the project use the entity accounting system?	There is computerized accounting system in place to record all debit and payment transactions by categories and sources Accounting books will be established and updated accordingly for the purpose of accuracy and efficiency.	
5.2	Are controls in place concerning the preparation and approval of transactions, ensuring that all transactions are correctly made and adequately explained?	There are different control points established for key functions in their own financial management.	
5.3	Is the chart of accounts adequate to properly account for and report on project activities and disbursement categories?	Yes. The COA has been developed and applied to ensure adequate FM reporting.	
5.4	Can cost allocations to the various funding sources be made accurately?	Required project recording of cost should differentiate sources of funding and be monitored regularly	
5.5	Are the General Ledger and subsidiary ledgers reconciled and in balance?	Yes. Reconciliation has been managed by the accountant regularly.	

Topic		Response	Remarks
5.6	Are all accounting and supporting documents retained on a permanent basis in a defined system that allows authorized users easy access?	Yes. They are in place and information is traceable.	
5.7	What is the basis of accounting (e.g., cash, accrual)?	The project will continue to use the existing accounting system in Mongolia. Accounting shall be accrual accounting.	
5.8	What accounting standards are followed?	According to WB assessment, the Mongolian Government maintains a strong accounting, recording and reporting practices. However, reporting is not in full compliance with the International Financial Reporting Standards (IFRS).	
5.9	Does the project have an adequate policies and procedures manual to guide activities and ensure staff accountability?	A PIM including financial management requirements and guide on disbursement processes has been in place.	
5.10	Do procedures exist to ensure that only authorized persons can alter or establish a new accounting principle, policy or procedure to be used by the entity?	Yes. Computerized system applied for project, "Aclous" applied to PMPMD phase I.	
5.11	Is there a written policies and procedures manual covering all routine project financial management activities? Are manuals distributed to appropriate personnel?	A PIM specifying the FM requirements and disbursement procedures will be updated for AF.	
Payments			
5.12	Are all invoices stamped PAID, dated, reviewed and approved, and clearly marked for account code assignment?	PAID invoices will be filed against individual voucher.	
Cash and Bank			
5.13	Does the organization maintain an adequate, up-to-date cashbook, recording receipts and payments?	Yes. The PMU applied computerized accounting software for project FM.	

Topic		Response	Remarks
5.14	Are bank and cash reconciled on a monthly basis?	Yes.	
5.15	Indicate names and positions of authorized signatories of project bank accounts.	A Director General of MOF is authorized signatory for DA while and Project Manager of PMU and Division Chief of MOF are authorized signatories for Project Account.	
Safeguard over Assets			
5.16	Is there a Fixed Asset accounting system, with a Fixed Asset Register, fully implemented - as part of an integrated accounting system Is the system maintained up to date ?	Yes. Government fixed asset management system will be applied. The accounting software shall include asset management function.	
5.17	Are there periodic physical reconciliation of fixed assets and stocks?	Yes. Annual physical count will be done by the State Office on Fix Assets Management.	
Other			
5.18	Has the project advised employees, beneficiaries and other recipients to whom to report if they suspect fraud, waste or misuse of project resources or property?	The government has separate anti-corruption reporting line to oversee it.	
5.19	Do policies and procedures clearly define conflict of interest and related party transactions (real and apparent) and provide safeguards to protect the organization from them?	Yes. Mongolia has a set of legal and regulatory framework on Public FM.	
5.20	Do controls exist for the preparation of the project payroll and are changes to the payroll properly authorized	PMU Manager approves at preliminary level. Overall payroll budget has been authorized by the Parliament on annual basis.	
6.	Reporting and Monitoring		
6.1	Does the reporting system need to be adapted to report on the project components?	Yes. IFAD template has been applied.	
6.2	Does the project have established financial management reporting responsibilities that specify what reports are to be prepared, what they are to contain, and the frequency of production.?	They followed IFAD requirements on reporting, however, project shall enhance its timeliness submission for key reports, such as AWPB, Progress Report and Audit Report.	

Topic		Response	Remarks
6.3	What is the frequency of preparation of financial statements? Are the reports prepared in a timely fashion so as to be useful to management for decision making?	The reporting will be done on an annual basis and the fiscal year is in line with the calendar year.	
6.4	Do the financial reports compare actual expenditures with budgeted and programmed allocations?	Yes.	
6.5	Are financial reports prepared directly by the automated accounting system or are they prepared by spreadsheets or some other means?	No. Only spreadsheets are in place.	
6.6	(In case of need of consolidated financial statements) Is the accounting system sufficiently equipped to ensure proper consolidation of entities' financial data?	NA	
Information Systems			
6.7	Is the financial management system computerized?	Yes. Although the accounting software has limited function on report generation.	
6.8	Can the system produce the necessary project financial reports?	No. The reporting is done manually in line with the requirements.	
6.9	Is the staff adequately trained to maintain the system?	Yes.	
6.10	Are adequate systems in place to "back up" financial records?	The original vouchers will be filed by the IA and a back-up copy will be maintained by the CPMUs.	
7. Internal Audit			
7.1	Is there an internal audit department in the LPA?	Yes. So far the internal audit function has not yet been applied to PMU.	
7.2	What are the qualifications and experience of internal audit department staff?	MOFA has its own financial management division and operations management division. However, they are not familiar with IFAD requirements.	
7.3	To whom does the internal auditor report?	The national government internal control system applies.	

Topic		Response	Remarks
7.4	Will the internal audit department include the project in its work program?	No. Current structure does not allow that. In the AF stage, the supervising role of MOFA will be strengthened through a Project Director sitting in MOFA. The internal audit will cover PMU accordingly.	
7.5	Are actions taken on the internal audit findings?	No.	
8.	External Audit		
8.1	Who is the external auditor of the entity?	The National Audit Office conducted audit for fiscal year 2014. Key responsibilities include review the compliance with FA covenants , adherence to procurement procedures to national procedure, separate opinions shall be given based on review of eligibility of disbursements made under the SOE, maintenance of Designated Account (/DA). The TOR has sent to IFAD for review.	
8.2	Are there any delays in audit of the entity? When are the audit reports issued?	The audit report for fiscal year of 2014 submitted almost on time.	
8.3	Is the audit of the entity conducted according to the International Standards on Auditing?	Yes. The auditor followed the International Audit Standards (ISA) in its auditing. The project financial statements were prepared in accordance with the Mongolian Accounting Standards and applied accrual basis accountings. The auditor provided the management letter with a good set of information disclosing shortcoming of the project management in terms of internal control, processes and FM practises.	

Topic		Response	Remarks
8.4	<p>Were there any major accountability issues brought out in the audit report of the past three years?</p> <p>Were there any issues noted in prior audit reports related to the operation of project imprest accounts or use of SOE procedures?</p>	<p>Four general issues were raised at 2015 audit report as recommendations included: (i) inconsistent classification of incurred expenses in 2014 Financial Statements, the equipment of early warning system were found categorized under 3A in 2013 but in Category 2 in 2014; (ii) the accounting policy indicated in the PIM needs update to reflect related amended Mongolian Accounting Act and Law; (iii) Beginning of Cash Balance on Loan Guarantee Funds was not reported correctly on the 2014 Financial Statements and at same time, there was no clear rule and procedure on usage of accumulated interests in amount of around USD46,030; and (iv) there was no administration and logs on usage of office supplies.</p>	
8.5	<p>Will the entity auditor audit the project accounts or will another auditor be appointed to audit the project financial statements?</p>	<p>Yes.</p>	
8.6	<p>Has the project prepared acceptable terms of reference for an annual project audit?</p>	<p>Yes. IFAD provides non-objection to the draft TOR on annual basis.</p>	

Summary of FM Risk Assessment and Key Mitigation Measures

Control Area	Initial Risk Assessment	Proposed Mitigation Measures	Residual Risk Rating
Implementing Organization	<p>Medium PMU is stably addicted to the LPA although the linkage needs to be further strengthened. NGOs also demonstrated experiences in participating in the previous project.</p>	<ul style="list-style-type: none"> Appointing a part-time project director at LPA Update FM guidelines with clear definition of procedures and controls Providing trainings to all levels especially at county level. 	Low
Staffing	<p>Medium The Project Accountant is approaching age of retirement. There is insufficient planning and management capacity to implement value chain activities with increased fund and scaled-up</p>	<ul style="list-style-type: none"> Develop backup plan and recruit qualified staff for financial management at least six month earlier to ensure proper handover. A dedicated team lead by a Project Manager who has solid knowledge on 	Medium

	geographic scope.	value chain	
Budgeting	High The Parliament cuts project annual budget to release burden on foreign borrowing	<ul style="list-style-type: none"> Careful and timely planning in advance to ensure sufficient budgeting 	Medium
Funds Flow & Disbursements	Low Current arrangement ensures efficient flow of funds	<ul style="list-style-type: none"> Arrange regular review and monitoring on implementation of AWPB 	Low
Internal Controls	Medium controls may be weak on bank account management for LGF	<ul style="list-style-type: none"> FM shall define procedure and control points for LGF implementing office; Spot reviews of FM procedure regularly 	Medium
Accounting Systems, Policies and procedures	Medium There is financial management rules and regulations in place for the government system. PMU shall apply accordingly to ensure all financial transactions are properly authorized and conducted. Project has computerized accounting software	<ul style="list-style-type: none"> Appropriate financial policies and procedures shall be codified and followed 	Low
Reporting & Monitoring	Medium PMU team has limited capacity on close monitoring and reporting.	<ul style="list-style-type: none"> Regular trainings shall be planned at the beginning of implementation Remedies shall be followed up timely by PMU after the SIS missions 	Low
Internal Audit	Medium Internal audit division of LPA is not familiar with project requirements and procedures.	<ul style="list-style-type: none"> IFAD requirements to be shared with IA; Regular communication and information sharing shall be made by PPMU with IA 	Low
External Audit	Low Proposed arrangements meet IFAD requirements however, EA shall be refreshed regularly with IFAD rules and requirements for audit options	<ul style="list-style-type: none"> IFAD requirements to be shared with EA upon project start-up; EA shall be included in the IFAD training and learning activities 	Low

Annex 2 TORs of KEY PMU FM STAFF

1. For successful implementation of the Project, two PMUs will be established under Ministry of Food and Agriculture(MOFA) for implementing pasture management and marketing components and Ministry of Finance(MOF) on implementation of Loan Guarantee Fund respectively. The PMU will operate under the guidance of the Project Steering Committee (PSC) and Project Director and led by a PMU Manager. The prime responsibilities of a PMU Manager, inter alia, are to consolidate annual work plan and budget (AWPB) at their respective level, coordinate project implementation, manage the project resources, monitor project implementation, report on implementation progress on a six-monthly basis and project impact on required basis, and to ensure that project's implementation strategy is effectively applied in all activities. The main responsibilities of the key PMU staff are as follows:

2. **Project Director:** The director is appointed at MoFA on a part-time basis. It is the most critical function in the overall project management and the importance of this post should not be underestimated at any time. The appointment of a capable project director is fundamental for the success of the project. He should be vested with necessary authority and support to discharge his duties. He/she will undertake the overall responsibility of project implementation management. His/her specific responsibilities mainly include the following points:

- Staff the PMU with qualified personnel in accordance with the requirements set forth in the Loan Agreement, properly assign the responsibilities to PMU staff, organize performance based appraisal of PMU staff by the end of each year;
- overseeing the use of project resources;
- Facilitate PMU Managers executing their duties properly and ensure that all reports will be submitted to IFAD timely as required;
- Reporting as the Secretary of the PSC and coordinate relevant institutions to ensure timely approval project resources to carry out the project. He will exercise due diligence to ensure the proper use of project resources;
- Maintain contact with IFAD and report to PSC and seek guidance as necessary.

3. **PMU Manager:** The manager of each PMU will undertake the responsibility of daily operation of project implementation. The overall responsibility is to coordinate the PMU staff, relevant institutions and implementing agencies to ensure that the project implementation complies with the project Loan Agreement, strategy and requirements for reaching its objectives and goal. His/Her specific responsibilities mainly include the following points:

- Plan and organise necessary trainings and workshops for PMU staff and other relevant project personnel to raise their capacity, awareness, and responsibility senses of project implementation, particularly the trainings on project management, implementation modalities, M&E, gender sensitization, participatory planning, and targeting;
- Develop and adopt management/administration regulations of the PMU to ensure that all PMU staff discharge their duties properly and that project property, documentations, data and records are filed and kept properly;
- Facilitate PMU staff executing their duties properly and ensure that all reports will be submitted to IFAD timely as required;
- Coordinate relevant institutions and implementing agencies to formulate project implementation plan, particularly AWPBs, in accordance with project strategy and approach, including the identification and selection of target villages and beneficiaries for each activity and the adaptation of project activities to local conditions;
- He will oversee the identification and selection of participating value chain and farmer cooperatives and adaptation of project activities to local conditions. He will ensure that the project is efficiently implemented and adequately targets the eligible beneficiaries;

- Coordinate relevant institutions to ensure that women focused activities are well implemented and poor women's participation is fully focused;
- Plan and organise assessments/evaluations of project outcomes and impact, including the benchmark/baseline, mid-term, and completion surveys, and report the results to IFAD as required;
- Work out adjustment proposal of implementation and submit it to IFAD for "no objection" when needed, based on the up-to-date situation and results, for achieving project objectives.

4. **Project Accountant:** The project accountant, under the guidance of project director and PMU Manager under MOFA, will take the responsibility of managing the Project Account, i.e. maintaining a separate account and records, preparing financial statements of the operations, resources and expenditures related to the project, setting up accounting subjects, transferring project resources to relevant implementing agencies, preparing withdrawal application and documents, to ensure that the project resources are well managed and used for project implementation in line with the Loan Agreement and the approved AWPBs. His/Her specific responsibilities are as follows:

- responsible for the financial and administrative management of the PMO , including Accounting, Budgeting , financial reporting, internal controls, auditing arrangement, flow of funds and the efficient management of projects resources
- Open a project account under the guidance of project director, maintain a separate account and records and thereafter prepare the financial statements of the operations, resources and expenditures related to the project. He/she will submit the financial statements through the upper level to IFAD timely, after confirmation and approval of PMO and PLG directors;
- Well manage the flow and expenditures of project funds by subjects, and properly file and retain the records evidencing project expenditures for annual audit by independent auditors and for inspection by the representatives of IFAD; carry out monthly bank reconciliations for project designated accounts and project accounts.
- Prepare withdrawal application and related documents of IFAD financing proceeds on a frequent basis, well manage the funds in the project account, timely transfer of project funds to relevant implementing agencies for carrying out the project;
- Prepare together with the Project Managers the Annual work plan and budget and the budget and financing plan in particular.
- Master IFAD key documents such as, the disbursement handbook, procurement guidelines and handbook, IFAD guidelines for project audits, the Financing Agreement (FA) and the Letter to the Borrower (LTB).
- Develop and maintain an efficient accounting system and reliable internal control procedures and guidelines for financial reporting and recordkeeping. Ensure that annual audits are carried out within the specified timeframe.
- Develop and maintain a system of financial control over all expenditure incurred by implementing partners. Review and regularly update the Financial and Administrative Manual.
- Maintenance of a well organized and up-to-date filing system for accounting and financial records as well as an fixed asset tagging system;
- Perform physical inventory of project assets each year;

Appendix V. Social, Environmental and Climate Assessment Procedures (SECAP) Review Note

1. Major landscape characteristics and Issues (Social, natural resources, and climate)

1.1. Socio-cultural context.

A country overview is provided here, drawing on national data to describe livelihood, gender, vulnerability issues as well as environmental and climate change features that are shared among the provinces of the project area of PMPMD AF.

Following this overview, natural resources and more location specific issues are then described for the two project areas, and each province (Aimag): Eastern Project Area of Khentii, Dornod and Sukhnaatar Aimag, and Central Project Area of Arkhangai, Ovorkhangai and Dundgovi Aimags.

Country Overview. Mongolia is situated in the heart of Inner Asia. The country's climate is extreme continental with significant seasonal and daily temperature variations, and marked differences within the country. Mongolia's territory covers several ecological zones within a relatively intact sequence of sequence of ecosystems in Inner Asia, reaching from northern taiga forests to arid desert. The zones are identified as High Mountain (or Montane) Zone, Taiga (or Boreal Forest) Zone, Mountain Forest Steppe Zone, Steppe Zone, Desert Steppe Zone and Desert Zone.

Total land use of the country's territory for the livestock sector is 80 %, very predominantly for extensive grazing. Mongolia is the cradle of nomadic civilization, and pastoral mobility is not only a long tradition and cultural identify, but an ecological necessity for sustainable use of the grasslands in most parts of the country. It is the original adaptation practice, responding to variability of climate, particularly rainfall.

With the end of centralized support to sustain the livestock cooperatives and state farms around 1990, livestock was privatized and divided among members and workers irrespective of herding experience or skills. Redundant workers from rural centers and urban areas also became herders to sustain a livelihood. The number of herding households doubled to about 230,000 between 1990 and 1997. Several climatic disasters that effect Mongolia as cyclic events, with a severe period in 1999/2000, lead to the loss of many livestock and livelihoods. As a result, many households migrated back to rural centers and to the capital city of Ulaanbaatar. This was a major contributor to poverty.

Today, still more than one third of Mongolia's population, within approximately 160.000 herder households, depends directly on livestock husbandry for their livelihood. Agriculture generates around 20 % of GDP, and makes up about 40 % of the labor force of the country. The resource dependent rural communities engaged in livestock husbandry and crop farming are also the most vulnerable to climate change.

While climate change is having a great effect on the country, and mining and infrastructure development are impacting local areas around mine sites and transportation corridors, Mongolia's vast territories still hold the greatest intact grasslands in the world, with the migrations of the largest wildlife populations in the world. An expanding network of Special Protected Areas under national government management as well as local protected areas managed by communities and local government are one conservation strategy employed to counteract development and to preserve the ecological and cultural values.

Mongolia is undergoing rapid change. Its population density of 2 people per square km is among the lowest in the world, and in recent decades the vast countryside has become even less populated as people have moved into Ulaanbaatar City. A mining boom in the last decade had accelerated annual growth of GDP into double digits, with over 17 % at its 2012 peak, followed by a sharp decline in the last three years due to falling commodity prices.

Poverty Trends. Between 1994 and 2000, the level of poverty did not rise significantly, but the depth of poverty, as well as disparities increased²⁴. Worsening living standards and poverty are directly linked to environmental causes. The effects of Dzud (severe winter weather), forest fires and parasitic infestations were exacerbated by land-degradation through decline in pastoral mobility while the number of herding households increased during the 1990s. In addition to increased vulnerability through environmental insecurity, social insecurity has risen through the weakening of traditional kinship relationships. Between 1994 and 2000, middle-class household declined and the number of poor and very poor households increased²⁵.

In recent years, poverty declined by 5.8 percentage, from 27.4 percent in 2012 to 21.6 percent in 2014, reflecting a slowdown from the 11 percentage reduction between 2010 and 2012. Reduction in poverty was higher in rural areas than in urban areas, and three mechanisms likely contributed to this: a) Despite the economic slowdown in 2014, economic growth remained positive and the economy still grew by about 20 percent (2012 – 14). Since many people in 2012 were just below the poverty line, even moderate growth in income or consumption could push them above the poverty line; b) Agriculture cumulatively grew by 36 percent during 2012-14, and was the fastest growing non-minerals sector with the exception of financial services and insurance. Growth was, therefore, highest in rural areas where the poverty incidence was highest; c) Non-agriculture employment and real wages stagnated in 2014, but remained above their levels in 2012. The decline in poverty is a result of more people moving out of poverty than those falling into poverty, which could be attributed to the preservation of real wages in non-agriculture sectors and continued growth in agriculture.²⁶

The number of rural poor in 2014 was approximately 294,371. Rural poor people in Mongolia include women who are heads of households, members of households with more than four children, families of small herders, unemployed people, people without basic education, and vulnerable groups, such as the elderly and disabled people, and orphaned children.

Rural poor people are scattered, isolated and highly mobile. They are mainly in five of Mongolia's 21 *aimags*, or provinces: Huvsgul, Arhangai and Bayan-Olgii in the north-west; Dorno-Gobi in the south-east and Bayanhongor in the south-central part of the country. Within the aimags, poverty seems to be most deeply entrenched in rural district centres called *soums*, which are settlements made up of a few hundred families.²⁷

Livestock. According to the end 2015 livestock census, Mongolia had 55 million 957.6 thousand heads of livestock, the National Statistical Committee (NSO) reported.²⁸ The result shows a 7.6% or three million 975.0 thousand heads increase against 2014. A number of horse reached 3,294.6 thousand, cattle--3,779.5 thousand, camel--367.9 thousand, sheep--24,933.4 thousand, goat--23,582.2 thousand heads.

In 2015, the number of livestock declined in Orkhon, Selenge and Darkhan-Uul aimags, while it increased in other aimags. The highest increases were in Khentii, Bayankhongor, Dundgobi, Gobi-Altai and Ovorkhangai aimags.

While overall livestock numbers have increased, for program design with objectives in poverty reduction and sustainable pasture management it is important to look at numbers of animals per households and the numbers of households with a certain number of livestock. A trend of increased livestock wealth concentration in the hands of fewer owners has been observed over the last decades already and is continuing. Also, the number of absentee livestock owners is increasing. Annex 1 provides data on households and livestock for the project Aimags.

Pasture use, and tenure rights. The significance of these developments is that they change rural labor relations as well as practices in pasture management. While herder households of lower or average wellbeing are interested in forming groups for collective action in pasture and livestock

²⁴ EGSPRS, World Bank 2003

²⁵ FAO, 2007

²⁶ Mongolia Economic Update, 2015, World Bank Group

²⁷ <http://www.ruralpovertyportal.org/country/home/tags/mongolia>

²⁸ <http://en.montsame.mn/agriculture/number-livestock-increases-almost-56-million-heads>

management, as well as for processing and marketing, wealthier herders have fewer incentives unless they are in need of labor.

Laboring for wealthier herders on the other hand is also a livelihood strategy for poorer households. It enables them to join their small herds with the larger herd, and thereby their livestock can make seasonal moves and longer migrations they would not be able to undertake alone and that are crucial for pasture recovery and in extreme cases for livestock survival.

Attitudes towards pasture use regulations also differ among wealth categories. While most herders today would prefer a pasture law including regulations on grazing fees, wealthier herders and/or livestock owners have less interest in this as they now have the opportunity to move their herds relatively freely to good pastures. A pasture law has been discussed for over a decade; however several drafts so far have been rejected by the Ikh Khural (National Parliament).

All pasture land is state owned under current land law. Mongolian law distinguishes ownership, possession and use rights as tenure forms. Customary, herders use winter pasture more individually or as small kinship groups; current law allows for certification of the “winter camp” site to individual herders. Summer pasture and their water resources (rivers, springs) are use as common pool resources. Current law does allow for the conclusion of contracts between groups of herder households and the Soum government over the possession and use of winter pasture, whereby groups are a legal entity under the civil code.

Gender. Mongolia has made significant progress in gender mainstreaming, namely with the adoption of the The Law o Mongolia on the Promotion of Gender Equality (2011) which includes the *Principle of gender mainstreaming*: Development policies shall be made gender sensitive through incorporation of gender concepts in laws, government policies, programs and projects. The Government of Mongolia attaches importance to ensuring gender equality, in particular in relation to improving both men and women’s access to land and promoting the land-ownership process to implement the Law on Allocation of Land to Mongolian Citizens for Ownership that grants every citizen, men and women, the right to land ownership.

However, gender issues need to be carefully analyzed to design gender sensitive programming for rural Mongolia. Impacts of socio-economic development on men and women, namely among herding communities, are both pronounced and clearly distinct by gender. The transition after 1990, with a return to a pastoral household economy, has resulted in an increase of workload for women in particular. A key to understanding questions of urban-rural and gender equity lies in looking at the labor intensity of the rural household sector. A 2003 study²⁹ by UNIFEM/UNDP in Mongolia points to key issues.

Attendance of higher education (secondary and tertiary) became lower for boys, compared to previous rates and compared to girls, as boys are involved in herding tasks. On the other hand, sustained gender roles in herding practices combined with the return to a household economy resulted in women performing an increased amount of work as effectively unpaid labor. Also, womens’ access to information and social events are less than that of men. Gender disparities in employment and in employment status are most illustrated in the status of rural women. They are nearly half of economically active women and 1/5 of all active women and men, yet 70% of them are classified as unpaid family workers.

Youth. Mongolia’s population, totaling 3 Mio in 2016, is very young. In 2014, 58 % of the population was younger than 30 years, and 21 % were youth between 15 and 24 years old. With almost universal literacy, high attendance of tertiary education, and extensive internet access, youth in Mongolia is generally literate and aware; however challenges to youth include high unemployment rate (25 %), namely in urban areas, lack of job qualification due to poor quality of education, weakening family and social support networks and decreasing civic engagement.³⁰

²⁹ “A Gender Lens on the Rural Map Of Mongolia” (UNDP, UNIFEM 2003)

³⁰ National Human Development Report, 2014, UNDP Mongolia

HIV. The prevalence of Human Immunodeficiency Virus (HIV) infection in the general population in Mongolia is low according to both official case reporting and estimation. As of late 2014, a cumulative number of officially reported HIV cases was 181 giving rise to HIV prevalence of less than 0.01% in the general population. Despite the low prevalence of HIV infection in the general population in the past two decades, the number of reported cases is growing exponentially in the recent past with almost a half of all notified cases reported in the last three years. Mongolia is moving from low prevalence HIV epidemic to a concentrated epidemic, based on indicators in urban settings. Modelled projections show that in five years HIV prevalence in Mongolia could triple without an expanded national AIDS response.³¹

1.2. Natural resources and NRM.

Rangelands

Pasture land and water resources, and their sustainable management, are key to livestock production in Mongolia, and to the outcomes of PMPMD AF. The status of rangeland condition in Mongolia has been much debated in recent years with discussions focusing on different methods of monitoring and evaluation of rangeland health, the nature of Mongolia's rangeland as equilibrium and/or non-equilibrium ecosystems, and the availability and development of a comprehensive network of reference sites that can provide a suitable baseline to measure changes and that takes into account soil, vegetation and climate conditions.

In the last few years, important progress has been made in establishing reference sites in different ecological zones, in aligning monitoring methods, and in evaluating results of different approaches to pasture use planning and management, most of which shared a community based approach to pasture land management, based on herders' own institutions. However, as pasture land is state owned, a consensus seems to be reached that collaborative management between herders' groups (named differently by different projects) and Soum government is an essential feature to success.

Two important programs bringing together interdisciplinary research and long term practice in community based rangeland management and rangeland health M&E are proposed here as guidance for PMPMD AF:

1) The Green Gold Project has lead a process of establishing a unified rangeland health monitoring method. Also, the long term experience with herders' institutions, recently brought closer together with government planning processes, are proposed as guidance for PMPMD AF. This is also concurrent with experiences generated with IFAD support, during PMPMD and a predecessor project (RPRP) which developed herders groups and Soum level organizations for co-management (RMMCs, Rangeland Management and Monitoring Committees). The ALAGAC procedure includes a) resource definition and allocation to customary users, and b) annual pasture land planning using a co-management approach.

The Green Gold project, with the Ministry of Food and Agriculture, and in collaboration with ALAGAC (Agency for Land Affairs, Geodesy and Cartography), and the Information and Research Institute of Meteorology and Hydrology, has recently published the "National Report on the Rangeland Health of Mongolia" (Ulaanbaatar 2015). The report lays out the methods for monitoring and provides an assessment of rangeland health for the different ecological regions in Mongolia.

2) The second reference for program design should be the report on "Building Resilience of Mongolian Rangelands"³² compiled based on a Trans-Disciplinary Research Conference in June 2015

³¹ AIDS Response Progress Report – Mongolia , Reporting period: 2014, UNAIDS, http://www.unaids.org/sites/default/files/country/documents/MNG_narrative_report_2015.pdf

³² Proceedings of Building Resilience of Mongolian Rangelands: A Trans-disciplinary Research Conference, Ulaanbaatar, Mongolia, June 9-10, 2015 *Edited by:* María E. Fernández-Giménez *Department of Forest and Rangeland Stewardship, Colorado State University, USA* Batkishig Baival *Nutag Action and Research Institute, Mongolia*, Steven R.Fassnacht *Department of Ecosystem Science and Sustainability, Colorado State University, USA*; David Wilson, *Nutag Action and Research Institute, Mongolia*

in Ulaanbaatar. It includes both social science and rangeland ecology studies that provide valuable insights for institutional and technical program design.

In summary, the status of rangelands in Mongolia is assessed as follows:

“Mongolian rangelands and the pastoral systems that depend on them are at a potential tipping point. Some research reports widespread grazing- and climate-induced degradation while other assessments find that Mongolian rangelands are resilient but at risk. Mongolia’s grasslands cover 75% of its land area and support globally important wildlife populations as well as a vibrant nomadic culture whose herds depend on the steppe for their sustenance. The average annual temperature in Mongolia has risen by 2.1 over the past 60 years, one of the steepest increases on Earth.

Since the transition to a democracy and market economy in 1992, poverty in rural areas has grown from zero to over 35% of the population. As a result, herding families are increasingly vulnerable to severe weather events, such as the winter disasters (*dzud*) of 1999-2002 and 2009-2010, as well as volatility in world markets. At the same time, the number of livestock grazing Mongolia’s steppes has increased, leading to concern for the future sustainability of the steppes and the people and animals that depend on them.

To address these concerns, over 2000 formally organized herder groups formed since 1999 to help empower and educate herders to manage their lands and herds sustainably (Mau and Chantsalkham, 2006). This movement, called community-based rangeland management (CBRM), is unprecedented in the world and offers an unparalleled opportunity to learn from the outcomes of grassroots collective action, and put this knowledge to work designing better policies and practices.

To manage rangelands sustainably, it is essential to understand the differences in ecological capacity of different soil and vegetation types across the landscape, and the distinct ways that different plant communities respond to management and disturbance.” (Maria Fernandez-Gimenez, 2015, page 10)

The conference provided results of several studies: “While one recent broad-scale remote sensing study claims that observed declines in greenness (a proxy for vegetation production) are correlated with increases in livestock density (Hilker et al. 2014), a recent field study in three ecozones within Bayankhongor Aimag found that rangelands are resilient but potentially at risk (Khishigbayar et al. 2015) and another study of winter-grazed pastures across 4 ecological zones in 10 aimags found that these pastures showed little evidence of degradation (Chantsalkham 2015).

Gao et al. conducted a novel country-wide analysis comparing stocking densities and forage availability to calculate percent forage use over time in all Mongolian *soums* from 2000-2014. Contrary to reports of widespread overgrazing, they found that heavy stocking was pervasive on about a third of Mongolia’s rangelands with 11% experiencing consistent overgrazing (more than 70% use for 10 or more years out of the 15 year period assessed). A remote sensing study of Gobi Altai Aimag by Vova et al. advances methods for using remote sensing to detect land degradation, but found no net change in degradation over a 13 year period of observation. In another country-wise study, Kang et al. used remote sensing, climate and livestock data to assess the predictors of livestock mortality in *dzud*, finding that the causes are spatially variable across the county, but that temperature, precipitation and production play important roles.” (Maria Fernandez-Gimenez, 2015, page 11)

While the majority of studies suggests that large portions of Mongolia’s rangelands still are resilient, with few areas heavily degraded. While assessments on rangeland health vary, there is a consensus that rangelands are at risk, from combined impacts of climate change and weaknesses in management, whether due to institutional, legal or enforcement issues.

The “National Report on the Rangeland Health of Mongolia” (2015) summarizes findings for different ecological zones. The underlying method for this assessment was that each monitoring site was assigned a recovery class between I and V, whereby I represents the best condition (at or near reference condition, or requires 1-3 growing seasons for recovery), and V represents the worst condition (. The plant community is altered due to extensive soil loss, accelerated erosion rates, or salinization; impractical to recover). For detailed description of recovery classes, see Annex 2.

In summary, and in relevance to PMPMD AF project areas, the findings are:

“52 % of the points were in Class I; 25% in Class II; 15% in Class III; and 7% in Class IV. Sites with very different recovery classes were intermingled, indicating that great variability in rangeland condition exists within soums. No NAMEM monitoring sites were located in areas with Class V, but while uncommon, such areas do exist and have been recorded in inventory by Green Gold.” (Page 15).

Most monitoring sites in Desert Steppe and Desert ecological zones are in reference condition or only slightly altered (Class I). A higher percentage of sites requiring more than 3 years of management for recovery (Classes II-IV) were observed in forest steppe, steppe and semi-desert zones. Sites in aimags such as **Arkhangai**, Bulgan, Tuv, Selenge, and **Dundgobi** have experienced the greatest degree of rangeland degradation, reflected in the lowest percentages of sites in Class I and II.

In Dornod Aimag, 100 % of monitoring sites were in recovery class I and II.
In Khentii Aimag, 80-90 % of monitoring sites were in recovery class I and II.
In Sukhbaatar Aimag, 60-70 % of monitoring sites were in recovery class I and II.
In Dundgobi Aimag, 60-70 % of monitoring sites were in recovery class I and II.
In Uvurkhangai Aimag, 80-90 % of monitoring sites were in recovery class I and II.
In Arkhangai, 60-70 % of monitoring sites were in recovery class I and II.

The lesson for the design of PMPMD AF is that attention needs to be paid to the different design requirements in the different project areas, which differ significantly in their natural environmental and ecological conditions.

The report proposes to implement “resilience-based rangeland management” , focused on the “sustainable production of meat, fiber, and other environmental goods and services in the face of environmental and societal variability. This framework integrates the traditional, community-based pasture management practices of the past with more recent rangeland management concepts and new technologies. Implementing resilience-based rangeland management requires national coordination among the Ministry of Food and Agriculture, Ministry of Environment, Green Development, and Tourism, and Ministry of Urban Development and Construction as well as collaboration among herders and local government.” It is proposed that PMPMD AF works within this framework.

Water Resources

The Mongolian government has declared the Integrated Water Resources Management concept as a role model for managing the country's water resources and it is now planning to develop and implement management concepts for all larger river basins. River Basin Administration (RBAs) have been or are being established country wide. River Basin Councils were planned as the partner civil society institutions to the RBAs.

PMPMD AF should assist in facilitating stakeholder cooperation for Integrated Water Resources Management; synergies could be achieved in the protection and rehabilitation of riparian areas, springs and catchment areas.

29 River basins have been identified, the map in Annex 3 depicts the basins and Aimag borders. The project Aimag's have territory in a total of 13 river basins; several are part of three or more river basins.

Water resources throughout Mongolia are unevenly distributed with absolute water scarcity in at least 6 aimags. The situation regarding water insecurity is likely to worsen unless necessary steps are taken. The uneven distribution of water is exacerbated by climate change. Already, seven aimags face an absolute water scarcity with the amount of useable water resources per capita well below the international norm. Data from water censuses of 2003 and 2007 suggests a rising trend in the

proportion of water sources drying up especially in Dornod, Khentii, Orkhon, Sukhbaatar and Omnogovi.³³

Description of PMPMD AF Project Areas

The project areas of PMPMD AF are in very different ecological zones.

Eastern Project Area

In terms of natural zones and habitat, this project area includes Daurian Forest Steppe (Northern part of Khentii), Mongolian Manchurian Grasslands (Dornod, Eastern Sukhbaatar), and Eastern Gobi Desert Steppe (Southern Khentii, Western Sukhbaatar)

While globally temperate grasslands are the most converted, the temperate grasslands in Mongolia are largely unconverted; they support pastoral livelihoods, and a full assemblage of native wildlife. However, the wildlife and indigenous livelihoods of this area are threatened by overgrazing and rapid growth in mining and oil development.

The territory of Dornod includes a number of protected areas, particularly in the Northwestern and Southeastern parts of the province. Also the Southeast of Sukhbaatar, and the North of Khentii province include important protected areas, classified as both Strictly Protected Areas and National Parks. In addition, there are a series of Important Bird Sites (migratory birds) in the Northern stretches of Khentii and Dornod Aimags. Annex 4 provides information on Protected Areas and other sites of ecological and cultural significance and projection status for the project Aimags.

Fragmentation through infrastructure is a major concern in terms of global habitat and biodiversity conservation. Current mining developments in Dornod, as well as infrastructure developments related to mining developments elsewhere, namely South Gobi, are posing the main threat to the grasslands and its migratory species, namely Mongolian gazelle, that represent the largest remaining of their kind worldwide.

The Eastern Khentii also includes important wetland areas including the Khurkh Khuiten complex, important for migratory species including White Naped Crane.

These grasslands have evolved over millennia with grazing, of both wildlife and livestock. They are relatively well preserved as water development is limited. As in grasslands worldwide, there efforts and lessons learnt from Mongolia and this particular area about community based grasslands conservation. In Toson Hulstay Nature Reserve, ongoing work facilitated by The Nature Conservancy, is supporting local stakeholder collaboration for sustainable use of grasslands that benefits people while preserving wildlife habitat.

The Eastern grasslands (including territories of Dornod, Khentii and Sukhbaatar) therefore could be seen as an opportunity to develop sustainable herder livelihoods, linking biodiversity conservation, landscape level management and market development. For market and trade route development, protected areas and special conservation values (wildlife habitat, wetlands), connectivity for wildlife and landscape level planning are to be considered. If preservation of these values can be achieved, there is significant potential to develop a unique local brand of products before the background of sustainable landscape and biodiversity conservation.

Khentii Aimag

Khentii aimag has a territory of 80,300 sq. km, divided into 19 Soums. It borders to the Russian Federation in the North, with a transboundary protected areas. Khentii Aimag includes part of the large Khan Khentii Protected Area covering over 1.2 million hectares of the rugged Khentii mountains, and contiguous with Gorkhi Terelj National Park. These protected areas constitute an important part of Mongolia's network of Protected Areas, with the largest road less area of Mongolia. The Khan Khentii is not only of great historical and spiritual significance due its sites related to the life of Chingis

³³ National Human Development Report, Mongolia, 2011, UNDP

Khaan, but also represents outstanding ecosystem services and ecological values as wildlife habitat, watershed (providing critical water supplies to the nation's capital city) and unique landscape. The area includes the origins of the Tuul, Onon and Kherlen rivers, the former draining into the Arctic Ocean via Lake Baikal, the latter ones into the Pacific Ocean

The primary economic sector of Khentii Aimag is livestock husbandry, while tourism also plays an increasingly important role. Horses, cows and sheep prevail in the husbandry. The area, specifically the town of Galshar in the south of the aimag is famous for its fast horses. The provincial center is Chingis City, formerly Undurkhan town, located 205 miles (330 km) from Ulaanbaatar. Mineral resources include gold, silver, quartz, asbestos, tungsten, fluor spar, coal, iron ore, tin and copper.

Wildlife includes endangered musk deer and moose, brown bear, wolf, lynx, badger, wolverine, weasel, sable, roe-deer, elk and squirrels. White gazelle, fox, steppe fox, marmots and hares are found in the steppe and grasslands. Bird species include whooper swans, spoonbills, great white egrets and species of raptors.

Khentii Aimag has also a wealth of historic sites, many of which are connected to the life of Chinggis Khaan including Khukh Nuur (Blue Lake) where Temujin was crowned as Chinggis Khaan in 1206, Ikh Aureg (Palace) of Chinggis Khaan--the site closely connected with the historical work "The Secret History of the Mongols" (Mongolyn Nuuts Tovchoo) written in 1240, Doloon Boldog in Kherlen Khuduu-Aral, Gundgavirlan monastery built in 1660 and reopened in 1990s. Other places of interest include the ruins of 13th and 14th century towns, stone walls originating from the Kidan Empire, and Buddhist Monastery rebuilt in the 1990s, which is similar to the Utai Gumban in Tibet.³⁴

Dornod Aimag

Dornod Aimag has a population of 74,000, and 2 border ports with Russia and 4 with China. Its Human Development Index is 4th among Mongolia's 21 Aimags, its GDP is the 3rd largest among the provinces. Agricultural development increased by 6.2 % between 2014 and 2015. 16.2 % of its GDP is from agriculture, and 37.4 % of the population is employed in the agricultural sector. The number of herder households has increased in recent years and is now (2016) 4042. 19 livestock breeds are recognized, making up 11.6 % of total livestock. 14.5 % of pastureland was defined as under pressure/degraded (pers. comm. Aimag Ag. Dept, April 2016). Natural disasters including cold rain, snow and wildfire, were frequent between 2010 and 2016.

Household and soum level processing and production is very low, and medium sized enterprises for value added production are needed to support rural livelihood development. Development of certification of products would be a prerequisite to reach markets; related to this, the capacity of local laboratories (veterinary, food safety) is to be improved.

The area is prone to sudden extreme events; in 2009, for example, 102,000 livestock, and the livelihoods of 100 households, were lost in one night of dust/rain/wind storm. In 2013, one Soum lost nearly 40 % of livelihoods (82 households) and large grassland areas to a steppe fire. Fire would need to be considered as a potential risk, and planned for in any program development with risk preparedness measures/funds. During the dzud (winter disaster) of 2009/10, 272,00 livestock of 327 households were lost. 50 % of these families still have not restored their livelihood. Storage facilities for hay/fodder need to be restored/established; these could be facilities shared by several Soums.

Sukhbaatar Aimag

Sukhbaatar Aimag, known for its fast horses, is divided into 13 Soums, and has one border port to China, and shares 1340 km of border with China. Sukhbaatar Aimag has a population of over 53,000 and a territory of more than 82,000 square kilometers, of which about 81 hectares are forest land, 436 hectares are crop land and 6.81 Mio hectares are pasture land. Elevation is mostly between 1000 and 1200 m above sea level, the highest elevation is 1778 m (Shiliin Bogd Mountain).

³⁴ <http://asia.ifad.org/web/mongolia/khentii>

It is situated in the Southern part of the Great Eastern Mongolian plains, and belongs to the steppe zone. The northern and northwestern parts are hills low mountain ranges while the south is characterized by the mountain steppe of the Dariganga Volcano Region. Surface water is very limited, there are no rivers of constant flow. Surface water sources include lakes and ponds, rainfed and with constant water source, as well as ephemeral streams, mostly in the southern part of the Aimag.

Oases with elm and willows are a common feature in many Soums; other flora includes medicinal plants. Several state and local protected area protect important habitat of wildlife including mountain ungulates such as Argali and Ibex, as well as deer and roe deer, Mongolian gazelle, marmot, wolf, fox, wild cat and others. Unique scenic and landscape features include the Dariganga volcanoes, large sand dunes and Strictly Protected Lkhanchinvandad Mountain. The sediment formations are rich in plant and animal fossils.³⁵

The wetlands and lakes are important bird habitat and stop over points for migratory bird species. Among the many bird species are endangered species such as whooper san and houbara bustard in the lakes of the Dariganga. The province is endowed with deposits of tungsten, coal, copper, molybdenum, alabaster, zinc and iron ore.

The number of livestock is 3 Mio. including 1.5 Mio goats, 1.7 Mio sheep, about 260,000 horses and 210,000 cows. Cattle are for meat; use of horses is primarily racing. Agriculture contributes 37.2 % of GDP.³⁶

The Aimag's development strategies include intensified agriculture, tourism, responsible mining and transport. Approximately 600,000 livestock are for consumption outside the Aimag, 130,000 are used in the Aimag. There are several local breeds including "Uzemchin" (sheep) and "Bayndelger" (goat). Processing of animal products is currently very limited, only 2 % of meat and milk are processed.

Risk Management. The climate is severe and accurate and timely early warning and forecasting is crucial for livelihoods and agricultural economy. The Aimag has sufficient land for hay preparation, with a capacity of producing more than 100,000 tons of hay/year. In recent years, a surplus of 600,000 hides was produced that were unused.

The Central Project Area

The central project area of Arkhangai, Uvurkhangai and Dundgobi Aimag includes forest steppe, steppe and desert steppe ecological zones. It encompasses several state protected areas including Khorgo-Terkhiin Tsagaan Nuur National Park, Orkhon Valley National Park, as well as local protected areas. The landscape ranges from high mountains, like Kharlagtai Peak at 3,529 m in Arkhangai and Baga Bogd Mountain in Uvurkhangai province.

The area also includes some of the most important cultural and historic sites and landscapes including Orkhon Valley – UNESCO World Heritage Site, a landscape preserving the heritage of Turkic, Uighur and Mongolian empires. Other important historic-spiritual sites include Tuvkhun monastery. The project area includes the provinces with the highest number of livestock and the second highest population (Uvurkhangai) in Mongolia.

Uvurkhangai Aimag

Uvurkhangai Aimag includes three ecological zones – forest steppe, steppe and desert steppe. About 23% of the territory is covered by forests, 28.2% is steppe, and 48.8% are Gobi desert. Uvurkhangai has the second largest population of all provinces in Mongolia, amounting to 112,000, of which 39 % (28,000) are employed in agriculture. The total area is 62,895.33 km².

Significant historic and cultural sites are located in Uvurkhangai Aimag, including the ancient capital of Kharkhorin, Erdene Zuu Monastery as well as Orkhon Valley, a UNESCO World Cultural Heritage Site representing the cradle of nomadic civilization.

³⁵ <http://www.infomongolia.com/ct/ci/192/70/Sukhbaatar%20Aimag>

³⁶ Pers. comm. Aimag Agr. Dept. April 2016

54 % of GDP is generated by the agricultural sector. The number of herder households is 14,658, and the number of households owning livestock is 17,952. Livelihoods are largely dependent on livestock husbandry, the province has the highest number of livestock – 4.5 Mio heads in 2015, including 23,000 camels, 220,000 cattle including 60,000 yaks, 280,000 horses, 2 Mio sheep, and 2 Mio goats. Before the 2009/10 dzud disaster, livestock numbers were 4.6 Mio. of which 3 Mio were lost in the dzud.

The development strategy for the province includes agriculture, tourism, retail, construction materials, and mining sector, in this order. Development policies aim to adapt livestock husbandry to climate change through improving quality and suitable intensification options.

The carrying capacity of the province's pasture was determined as approx. 4 Mio livestock, and planners are intending to manage livestock at this threshold and manage pasture land sustainably. It is currently exceeded by 1.8 times. Processing/marketing opportunities exist for fibre (wool of sheep and yak, and cashmere) meat. In summer, there is a surplus of milk, but storage facilities are lacking.

Barriers to improving livestock quality, processing and reaching markets are identified. They include weaknesses in veterinary/food safety laboratory diagnostics, lack of opportunities/knowledge of producers in preprocessing, herders' institutions for marketing (cooperatives) are weak. Some processing facilities exist, for wool and meat, but are not operating at satisfactory levels. Linkages need to be strengthened between producers and processors. The Aimag is one of 5 Aimag selected by the central government to export meat to China, a border port exists in 400 km distance.

The number of agricultural cooperatives is 130, with between 20,000 and 30,000 members. The total number of herder households is 50,000, and the number of Khot Ails (customary kinship groups of households) is 9000. Most herder households own 200-500 livestock, 680 households own more than 1000 livestock, 2000 households own less than 100 livestock (<100 livestock is an indicator of lower income/wellbeing).

The province has 19 Soums where 40 private veterinary units operate; however the capacity of these units is limited to perform their tasks in testing for quality standards. For risk management, fodder and hay storage facilities need improvement. Only 2 Soums produce hay, all other districts need to develop fodder production. Improving forecasting, risk preparedness and disaster response are key requirements to enhance resilience to climate change impacts. Climate change related weather patterns, namely drought, have already forced herders in recent years to move into other Soums; while this is treated with acceptance due to customary practice in nomadic societies, this is a potential source of conflict as climate change impacts increase.

In the South of Uvurkhangai province, several mountain ranges of the Gobi Altai ranges – Arts Bogd and Baga Bogd – are major scenic landscape features; they include important wildlife habitat including that of snow leopard, argali and ibex, and local protected areas. The Khangai Mountains are a feature in the Northwest part of the province.

Water bodies include the Ongi, Taats, and Orkhon rivers, and the lakes Tsaatin Tsagaan Nuur, the famous Naiman Nuur (Eight Lakes) and the tourist destination of the Orkhon Waterfall. Springs of mineral water include the commercially exploited Khujirt spring, and Khuren Khad local protected area.

Dundgobi Aimag

Dundgobi Aimag has a territory of 74690 square kilometers, and a population of 44,900. The population of working age is 29,500. The main contributor to the economy is animal husbandry. The territory is divided into 15 Soums and 66 Baghs.

The number of herders is 11683, belonging to 6180 households. More than 50 % (3131) of herder households have less than 200 livestock. The total number of livestock is 2.7 Mio. The average number of livestock/household is 368, pointing to a high disparity in livestock ownership. The number of herder households has increased in recent years.

Challenges for the development of sustainable livestock husbandry include improving pasture water supplies, strengthening veterinary lab capacities and establish more private veterinary units under the

Mongolian Livestock Program, capacity development for young herders to increase herder households, developing meat processing facilities, and improve fodder production (planting perennials, fencing).

The territory of Dundgovi aimag is semi-desert and steppe. The elevation of the area is 990-1,926 m above sea level and the highest peak is Delgerkhangai peak. Temperatures in the summer may top 32 degrees Celsius, while winter temperatures may dip below -30 degrees Celsius. The Ongi River, one of the longest river in Mongolia, with a length of 435 km, flows through the eastern part of the province. Located there are also important cultural sites such as the Ongi Monastery.

The province has deposits of coal, copper ore, iron ore, fluorspar, nephrite, jade, graphite, marble and chalcidony. A main road from Ulaanbaatar to South Gobi Aimag runs through Dund Gobi Aimag; the distance from Ulaanbaatar to the provincial capital Mandalgovi is 270 km.

Arkhangai Aimag

The territory of the Aimag includes 55,314 km² ; the provincial center is Tsetserleg, (Erdenebulgan). The territory is divided into 19 Soums. The population was 84,584 in 2011. Arkhangai aimag is located in the interior of the country and borders Bulgan (north east), Ovorhangai (south east), Bayankhongor (south), Zavkhan (west), and Huvsgul (north west) Aimags.

The highest point is Kharlagtai Peak at 3,529 m (11,578 ft), while the lowest point is the area of the confluence of the Orkhon and Tamir rivers at 1,290 m (4,232 ft). The most well-known mountain is the extinct volcano Khorgo, which is part of the Khorgo-Terkhiin Tsagaan Nuur National Park.³⁷

The rivers Chuluut, Khanui, and Tamir have their origins in the valleys of the Khangai Mountains. Together with some smaller tributaries they all belong to the watershed of the Selenge. The Orkhon also traverses the eastern end of the aimag for a short stretch. The lake Terkhiin Tsagaan Nuur is located in the west. A smaller lake Ögii Nuur is located in the eastern part of the aimag in the Sum of the same name.

In Tsetserleg soum, the center of the aimag, average air temperature is 0.1°C and, in January -15°C and in July +14°C. Khangai mountain range is one of the places with high precipitation where the annual precipitation fall in Tsetserleg which is 344 mm. Average wind speed is 2.6m/sec that reaches up to 3.5m/sec during April, the windiest month of the year. Soil is mainly scattered grey, sandy, brown, black, and black brown soils of pasture land and forests.

Fauna includes Rodents: Narrow-skulled vole, long tailed gopher, marmot, field mouse, forest red mouse, red mouse, rock wall-reeper and squirrels are found. Hoofed animals: Roe deer, boar and deer are common. White antelope rarely occurs. Argali, the wild sheep and ibex are also found. Predators: White ermine, ferret, fox, wolf, leopard, lynx, corsac, wildcat, badger, raccoon and ermine. Insectivore: white toothed shrew Chiroptera: Bats. Birds: snow cock, rock snow bird, fringilla coelebs, white quail, brown quail, snipe, black kite, jay, lark, night jar, birch partridge, brown rock sparrow and wagtail. Raptors: Falcon, kite, hawk, buzzard, vulture, owl, and eagle. Water fowl: duck, dirt duck, brown goose, white ardea, godwit, titmouse, and pallas's sea eagle.

1.3. Climate.

Observed climate change trends in Mongolia are pronounced. With an increase of approximately 2.1 degree Celsius of mean annual air temperature over the last 70 years, the warming trend is among the highest observed worldwide. Precipitation has decreased by 10 % in the same period, resulting in an elevated dryness index.

Impacts of climate change on animal husbandry are severe. Mongolia has a continental climate characterized by distinct seasonal temperature fluctuations, low precipitation and distinct latitudinal and altitudinal differences. The country is disaster prone. Winter disasters (zud), drought, storms,

³⁷ <http://asia.ifad.org/web/mongolia/project-areas>

floods and both cold and heat waves frequently take a heavy toll on livestock and thereby rural livelihoods, as well as causing losses to human life. Likewise, crop farming is affected severely, for example in 2015, 50 % of wheat harvest was lost due to drought. The magnitude and frequency of natural disasters due to climate change have increased in recent years³⁸.

Climate change projections include warmer winters, with an increase of 2.6 degree Celsius, and increased winter precipitation by 40 %. Temperatures and precipitation for summer are predicted to rise to a lesser degree than winter values. A 3 % increase in precipitation until 2070 and 2.4 degree Celsius in temperature rise is projected for summers.

Already, changes to Mongolia's ecosystems are notable, and with so many livelihoods directly depending on land and water resources, rural as well as urban populations are highly vulnerable. Natural zones are shifting, and vegetation cover has reduced significantly. Plant composition of rangelands has changed, palatable forage species have decreased and so has total biomass available as livestock forage. Increased livestock numbers, and development of mining and related infrastructure is adding to the impacts on rangelands, particularly severe around large mining sites. With climate change trends and extreme events, rodent and insect infestation is further damaging rangelands.

The frequency of natural disasters has nearly tripled in the last decade, and economic costs are estimated to be US \$ 10-15 Mio. annually. Livestock productivity has declined in changing rangelands and under drought conditions, heat stress and resulting shorter daily grazing times are expected to exacerbate this trend. Important cash income sources of the rural population such as cashmere and wool are affected by productivity losses. In the last 20 years already, wool productivity has decreased by 8 % and cashmere productivity by about 2 %³⁹.

Climate change has direct impacts on crop production including on spring wheat, the main crop in Mongolia. Grown mostly in rain fed fields, water availability is the main for production. Another factor causing yield declines is the rising number of hot spells during critical stages of crop growth. Modelling has predicted a decline in wheat yield (1-30 % decline between 2011 and 2030) as a result of higher temperature during the growth period. Crop production may also be affected by pests and diseases and by damaging heavy rains.

Climate change already has noticeably and adversely affected natural resources, animal husbandry, pastureland, and agriculture, as well as other socio-economic sectors, in Mongolia. To ensure sustainable development, the vulnerability of the country to climate change needs to be reduced. A comprehensive analysis of climate change observations and projections⁴⁰ describes findings relevant to pastures and livestock:

“Pasture growth begins in late April and biomass peak is usually reached in August. Mongolian livestock obtains over 90 per cent of its annual feed intake from the annual pastures. In winter, the grass dries off and its quality deteriorates. During this period, the animals take only 40-60 percent of their daily feed requirements. Pasture yields are strongly affected by climate and weather conditions. The four main pasture ecological zones are high mountains, forest-steppe, steppe and desert.” (page XV).

Key findings include

a) for pasture:

- The peak of pasture biomass has declined by 20 to 30 per cent during past 40 years. Pasture plant monitoring observation began in 1964 within the national network of meteorological

³⁸ Mongolia Second National Communication under the United Nations Framework Convention on Climate Change, Ministry of Nature and Environment, UNEP, 2010

³⁹ Climate Change Vulnerability and Adaptation in the Livestock Sector of Mongolia, 2006, AIACC
Mongolia Assessment Report on Climate Change, MARCC 2009

⁴⁰ Climate Change Vulnerability and Adaptation in the Livestock Sector of Mongolia, 2006, AIACC,

observation. Pasture plant observations were carried out in the fenced fields, thus this reduction could be considered as the result of climate change only.

- The analysis of the Normalized Difference Vegetation Index (NDVI) trends of the third decades of July for the period of 1982-2002 at each pixel of 8x8 km resolution data shows a clear decline of the NDVI in 69 per cent of the country's territory for the last 20 years.
- Currently, fodder production is estimated at about one third of that in 1986.
- Climate change has had an effect on not only peak standing biomass but also spring biomass. Biomass in April and May was decreased in the forest-steppe and the steppe.
- Pasture plants emergency tends to begin earlier in the forest-steppe and the steppe. Particularly, the emergency date for *Agropyron sp.* has become earlier by three days in the steppe and 10 days in the Altai mountains and the desert for last 20 years.
- During the last 60 years in Mongolia, high nutrient plants decreased by 1.5-2.3 times. Low nutrient plants like *Carex duriuscula-Artemisia* became dominant in pasture communities.
- It is projected that pasture biomass will decrease in the forest-steppe and steppe and increase in the high mountains and desert. For instance: HadMC3 projects a pasture biomass decrease from 0.6 to 37.2 per cent in the forest-steppe and steppe by 2020-2080, more than 20 per cent increase in the high mountains and a much greater increase in the desert.

b) for livestock:

- The observed data shows a decline of the average weight of sheep, goat and cattle by an average of 4 kg, 2 kg, and 10 kg, respectively, from 1980 to 2001 (Bayarbaatar and Tuvaansuren, 2002).
- Animal productivity also has decreased slightly. Sheep wool productivity has decreased by more than 8 per cent, while cashmere productivity has decreased by about 2 per cent over the last 20 years.
- With climate warming, the temperature stress on animals was observed.
- Post-climate change summer conditions are expected to have a more adverse impact on animals than the changed winter conditions. Summer ewe live-weight is likely to decrease by about 50 per cent, while winter ewe live-weight is expected to decrease by 15 per cent by 2080. Many environmental factors affect the animals in a complex way. Animal live-weight is a major manifestation of this combined effect because many of their features such as growth and development, fertility and birth, productivity, resilience, and adaptive capacity, depend on animal's weight. In other words, an animal's live-weight is dynamic depending on pasture and climatic conditions.

Adaptation practices already implemented by local herders in three Soums of Khentii, Dornod and Sukhbaatar Aimags were evaluated by an ADB supported project from 2010/13⁴¹

"The most common practices were destocking and *otor*. A number of other adaptation practices were identified during focus group discussions with multiple stakeholders. Practices related to social organization included organizing in herder groups for pasture management and sharing knowledge of traditional herding practices.

Adaptation practices in pasture management included rotation and resting of pasture, *otor* movement to fatten animals in fall and/or winter, rehabilitating wells, protecting springs through fencing, irrigating pasture, planting fodder species, and preparing hay and other fodder.

For livestock management, adaptation practices identified included breed improvement, regulating and improving herd composition, decreasing the number of goats, reducing stocking rates to adhere to carrying capacity, slaughtering old animals, repairing winter shelters, and taking out livestock insurance." (page 13)

"Herders and local government representatives identified the lack of a legal framework to regulate pasture use and weak enforcement of pastureland management rules as the key constraints to

⁴¹ Making Grasslands Sustainable in Mongolia, Volume 1. Grassland Management: Adapting to Climate Change (prepared by Carey Yeager, Climate Change Specialist, EARD/EAER Task Manager based on inputs from ADB consultants Sabine Schmidt, Bolormaa Damdinsuren, Batbuyan Batjav, and Munkhjargal Begzsuren), (2013).

implementing improvements and adaptive practices. They also highlighted the lack of technical and financial capacities of local governments for performing their land management functions, a shortage of finance among herders to carry out pasture management measures, and limited opportunities for processing and marketing. With the increase in development in the region, markets are emerging; however, herders do not have the capacity to take advantage of these opportunities.

The herders and government representatives also reported that informal and formally established herder groups had been successful in coordinating movements of member households and reserving seasonal pastures, but unregulated movements of herders with large herds had in several cases undermined these efforts. They concluded that customary rules alone are insufficient to have an effective regulatory impact.” (page 16) Fragmentation of pasture land due mainly to extractive industry infrastructure development is another challenge to sustainable pasture management depending on pastoral mobility.

1.4. Key Issues.

The following environmental, climate change and social issues are of key importance in the project areas to manage risks, improve targeting, and realize opportunities towards achieving project objectives.

Environmental

a) Landscape and Biodiversity Conservation

In both regional project complexes - the Eastern Project Area with large relatively intact grasslands and the Central Project Area with mountain ranges and recognized ancient cultural landscapes, landscape level management approaches will be important to promote sustainable development.

For the Eastern Project area, there is “concern about the possible effects of global change on the Manchurian-Mongolian grasslands. Studies indicate that the seasonal distribution and inter-annual variation in temperature and precipitation, especially during the late summer, are important controls on temporal dynamics of plant biomass, rain-use efficiency, as well as carbon flux and storage of these meadow steppe ecosystems.

Sheep-grazing is a dominant activity, although goats are more abundant in the rockier, mountainous areas. In recent years, the number of goats raised on the grasslands has increased considerably due to the high prices for cashmere wool, which comes from goats. Because goats eat a wider range of plant species than sheep, and because they forage more aggressively and tend to consume the whole plant, this trend has contributed to degradation of the grasslands over a widespread area.

Wetland habitats (many brackish or saline) exist throughout these grasslands, and many offer important bird-breeding habitat. Threats to these areas include reed-cutting, excessive hunting, egg collection, and over-fishing.”⁴²

In the Eastern area, important landscape and biodiversity features of grasslands, migratory mammals, wetland complexes and a network of protected areas contrast with the development of extractive industries and agribusiness. PMPMD AF activities have the opportunity to promote sustainable livelihoods through improved pasture management and developing local livestock based products in line with the ecological “brand” of the region

A comprehensive body of knowledge on the natural environment is available in the form of an Eco Regional Assessment⁴³, and a portfolio of conservation sites with identification of conflicts between conservation and mining has been defined (Annex 5).

In the Central Project Area, the network of state and local protected areas, that are managed to preserve biodiversity and landscape features, and the cultural heritage sites, are to be considered for

⁴² <http://www.worldwildlife.org/ecoregions/pa0813>

⁴³

the design of activities. Synergy opportunities may exist in buffer zones of state protected areas where sustainable livelihood support is prioritized by government and donor supported programs.

b) Water Management

Particularly in the Eastern Project area, water resources management will be complex considering the needs of herders, wildlife, crop farming and mining. One reason for the relative well conserved grasslands is the lack of water developments in large tracts of land. Water developments, particularly deep wells, need careful consideration to balance conservation needs with livestock development.

Climate Change

In reference to water development, wells may in certain cases constitute a maladaptation if long term impacts on ground water would occur.

As several of the project Aimags are subject to particular severe storms, and all Aimags are projected to experience an increase in extreme events such as drought and dzud, improvements in early warning systems, and risk preparedness, management and response capacity will be important measures to reduce vulnerability

Social

a) Extractive Industry.

Mongolia's economic transformation over the past 20 years has been driven in large part by the extraction of its vast mineral resources. However, Mongolia's reliance on the energy sector for growth has not only left it vulnerable to fluctuations in global mineral prices, but has created considerable strain on natural resources and exacerbated environmental degradation.

The Global Green Growth Initiative (GGGI) working with the Government of Mongolia concludes⁴⁴ that sustaining recent development gains in Mongolia will face the following challenges (and these apply to potential project areas with mining developments: a) Greenhouse Gas (GHG) emissions as a result of increasing energy demands, b) Water scarcity and resource management, c) Increasing urbanization, d) Degradation of grasslands that support agricultural sector, e) Rising health issues due to dust levels increasing as a result of logistical infrastructure development in support of mineral extraction.

While the presence of extractive industry poses threats to pastoral resources and livelihoods in terms of limiting access to pasture and water, and impacting quality of these resources, opportunities are to be explored how under the current legal framework, namely the Law on Environmental Impacts and regulations on rehabilitation and offsetting damages to land can be leveraged to support pasture and livestock management, and market development initiatives. The obligations for offsets also apply to other developments.

b) Gender

Gender issues should be addressed in the pasture management and climate change adaptation component of PMPMD AF with greater attention, with particular consideration of the findings⁴⁵ on herder women's workload, unpaid labor and social issues related to the return to household economy after 1990.

2. Potential project's social, environmental, and climate change impacts and risks

2.1. Key potential impacts.

As PMPMD AF builds on best practices of PMPMD, key potential positive impacts include extension of reserve pasture and rangeland health improvement, improved access to water resulting in pasture improvement as seasonal moves are facilitated. Improved risk management will reduce livestock mortality; improved breeds and health of animals will improve productivity. Combined with

⁴⁴ http://gggi.org/wp-content/uploads/2015/07/gggi_factsheet_Mongolia_TransitiontoGreen_Development.pdf

⁴⁵ "A Gender Lens on the Rural Map Of Mongolia" (UNDP, UNIFEM 2003)

market development, these will lead to livelihood improvements. The financial mechanisms of the project make access to loans possible to women's groups, herder groups and through their revolving fund to member households. Annual Outcome Surveys of PMPMD 1 have documented livelihood and social benefits.

Key potential negative impacts may include:

a) Exacerbating disparities and supporting elites in benefiting from improved capacity for pasture management, value addition and marketing. The benefits of group based approaches for lower and average wellbeing households have been demonstrated in IFAD supported and other projects over the last decade in Mongolia. These are realized both through collective action among these households; but there are also benefits for them in livestock husbandry if their herds can join seasonal moves of the larger herds, if they have access to equipment and if they can take advantage of market links that are more likely being established by better off households with larger production volumes. Capacity development, in technical (livestock, pasture, risk management), institutional (groups, cooperatives) and marketing (processing, business planning) issues, ongoing facilitation and outcome monitoring will enable the project management (PMU) to ensure the target group is benefiting in the spirit of project objectives. Indirect benefiting, through joining federations that may be led by the better off, is expected to be one mechanism of poverty reduction and livelihood improvement.

b) increasing pressure on pastures if livestock numbers would continue to increase, herd structure would continue to shift towards higher numbers of goats and pastoral mobility would be restricted. Improved market access, with better prices for products, has the potential to increase livestock numbers; project activities on cashmere marketing could further shift herd structure towards more goats. From the onset, project design has examined options for niche market development whereby premium process would be linked to proven sustainable practices in pasture and livestock management. While joint monitoring, including the establishment of baseline data will be important for all groups and areas of PMPMD AF, this will be of particular importance where premium product developments with a potential negative impact such as increased numbers of goats is planned.

c) project activities and investments that would encroach on critical habitat, protected areas, wetlands. Both of the major project areas include significant natural and cultural areas that represent wildlife habitat, state and local protected areas, and some of the best preserved temperate grasslands in the world. Particularly in the Eastern Project Area, these are already under pressure from development of mining industry and possibly agricultural business/large scale crop farming. The conservation values and mechanisms that are in place to protect the natural environment are also a great opportunity to link with sustainable livelihood strategies in market development such as organic and local brands promotion.

A careful planning process is needed with all stakeholders involved to balance the different interests and potential conflicts. Stakeholders may include the Aimag Agricultural and Environmental departments, ALAGAC, Protected Area Administrations, River Basin Administrations, as well as agencies of the Ministry of Mining where conflicts or opportunities with extractive industry are foreseeable. The eco regional assessments prepared by The Nature Conservancy on behalf of the Government of Mongolia are a valuable resource for planning.

While the implementation approach with a focus on Soum level, with a Soum working group, is a good practice, for the landscape level planning, particularly in the Eastern project area, the role of Aimag level planners should probably be further enhanced in detailed project planning and implementation.

d) livelihood strategies are becoming less diverse, focusing on new niche markets, and possibly more vulnerable to climate change impacts and extreme events and economic factors, if pasture and livestock management practices and strategies do not take into consideration climate change sufficiently, or if development of niche markets fails ultimately. Livelihoods of poorer and average households tend to rely on several strategies, they may include fibre, dairy, hides, vegetable growing, and others such as sewing and occasional labor. If households are involved in project activities aiming to develop a niche market, and encourage households to focus on one product, safeguards need to be considered in case of delays or failures of market development.

Women

The project component supporting women's groups with financing and small business development is well targeted towards disadvantaged beneficiaries, included female headed households in rural centers. Experiences from phase 1 of PMPMD suggest to continue the approach and strategies. The project component on pasture management and climate change adaptation under phase 2 of PMPMD will introduce further activities to highlight herder women's needs when establishing and strengthening groups, planning group activities and developing market linkages.

Youth

Policy makers have expressed concern about the decreasing number of young herders, though in some areas their number has increased. Project support should re-visit opportunities to support young herders through trainings and other activities to be defined in detailed project planning. A recurring topic is the requirement for children to start school earlier – the need for 5-6 year old herder children to stay in dormitories at the Soum center causes many young families either to split up whereby the mother stays with the children in the center, or to move to the Soum center while leaving their livestock with relatives. The project could explore options to address this issue.

2.2. Climate change and adaptation.

From the onset, climate change adaptation was built into the design of PMPMD. Investments and trainings have enhanced risk management and adaptive capacity of beneficiaries. Planned project measures support the official adaptation strategies in Mongolia's livestock sector, as outlined in Mongolia's Second National Communication to the United Nations Framework Convention on Climate Change, based on findings from long term monitoring and modeling.

Decreased weight and productivity were identified as the main impacts of climate change in the livestock sector. Productivity and long-term resilience of Mongolia's pastoral system were identified as dependent upon the condition of the natural resource base, primarily grassland, livestock "biocapacity" (i.e., resilience) to cope with environmental stresses, and on human capacity to manage livestock and pasturelands.

The communication stated that adaptation should focus on (i) conserving the natural resources on which livestock husbandry depends; (ii) strengthening the capacity of livestock to cope with environmental and climate stress; (iii) developing the capacity of herders and expanding livelihood opportunities for rural communities; (iv) increasing food security; and (v) enhancing monitoring, interpreting, and forecasting capacity. The government developed the National Action Program on Climate Change in 2000 to promote selected adaptation measures and coping strategies.

For animal husbandry, the following adaptation measures were selected to address the key impacts of climate change and associated declines in incomes: (i) developing semi-intensive farming in suitable areas, (ii) improving local breeds, (iii) managing risk and promoting insurance systems, (iv) diversifying herders' livelihoods, (v) supporting small enterprises, (vi) developing the capacity of herders for livestock management and alternative livelihood skills, (vii) introducing modern processing technologies for livestock products, (viii) developing a regulatory framework (pasture use fee and/or tax) to achieve appropriate stocking rates and create incentives for pasture improvements, and (ix) providing renewable energy for herder households.

For grassland ecosystems, adaptation measures were selected to respond to declining pasture productivity, increasing desertification, and loss of biodiversity. The measures include (i) regulating pasture use and possession, (ii) conducting comprehensive assessments of land degradation at the *aimag* level, (iii) establishing an effective system of land use monitoring, (iv) strengthening the early warning system in NAMEM, (v) cultivating forage plants, (vi) undertaking soil conservation measures, (vii) improving pastureland irrigation, and (viii) introducing new drought- and pest-resistant plant varieties.

With the proposed capacity building and joint planning activities for local government and herders, the project investments, IFAD support under PMPMD AF is well targeted to enhance climate change

adaptation. In particular the following project interventions are contributing to this: Trainings and on-the-job capacity development, and stakeholder cooperation for local strategic planning; investments for risk; enabling pastoral mobility through group formation; strengthening impact monitoring; protecting water resources; breed improvement towards adapted local breeds; fodder production based on resilient species/perennials; improving animal health.

3. Environmental and social category (B)

The environmental and social category of PMPMD AF is defined as **B**. The project is mainly about enhancing sustainability of pasture management and improve livelihoods. Activities of small-scale infrastructure development (such as small scale water reservoirs, well development or the establishment of small scale processing facilities) will follow national environmental impact review procedures taking into account all information on ecological assessments and be initiated by joint stakeholder planning.

Environmental/Ecological assessments will be conducted by PMU on the following activities: a) for pasture and livestock management: 1. Protection of water sources, possibly exclusion of livestock from fragile wetlands and migratory bird locations; 2. Managing livestock in line with management plans of protected areas and their buffer zones; 3. Conversion of grasslands to fields for fodder production, soil erosion measures; 4. Responsible use of fertilizer and/or herbicides, 5. Multitracking/off road driving in pristine grasslands, creating new roads; 6. Accessing new/remote pastures, they may be important wildlife habitat. For b) market development: 1. Construction of facilities/environmentally friendly building technologies/materials, 2. Solid waste management, 3. Waste water treatment. 4 transport. 5. Review Law on EIA for establishment of larger facilities.

4. Climate risk category (Moderate)

The climate risk category of PMPMD AF is likely to be “moderate”. Climate-risks will be managed by involving technical experts in planning, construction and management of investment activities and following all national procedures for inspection and compliance.

With increased frequency and intensity of extreme events, and observed climate change in Mongolia, agricultural risk is acknowledged. However, capacity for risk management has increased at all levels (from National Emergency Management Agency (NEMA) to herder groups). PMPND has already improved adaptation capacity through enhancing early warning systems, and through constructing and rehabilitating fodder storage facilities. Continued capacity building in risk management, through training, investments and improving stakeholder cooperation remains a priority of the PMPMD AF.

5. National Strategic and Policy Framework

As a signatory to the Rio Conventions, and other conventions, Mongolia is fulfilling obligations on environmental management, biodiversity conservation, climate change adaptation and mitigation, and combating desertification. In the past 20 years, over 30 environmental laws were adopted by the Mongolian Government. The protected area network was expanded to cover 26.2 million hectare by end of 2013, covering 17% of the country's territory, while separate legislation has been passed to address mining near river headwaters and forested areas. National strategies and plans for biodiversity, climate change and desertification were also developed within the implementation of Rio conventions.

The Mongolian Action programme for the 21st century (MAP-21), approved in 1995, is the country's national agenda on sustainable development. It covers activities at the national and provincial levels, based on the country's natural resources and ecosystems, and covers sustainable social development, sustainable economic development, proper use of natural resources and protection of nature and the environment, and means for implementing Mongolia's System of sustainable development.

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To follow the obligations under the CBD (Conventions on Biological Diversity) the second Mongolian National Biodiversity Program (2015-2025) was adopted in 2015, taking the Aichi Biodiversity Targets into consideration. Its 14 goals have been mapped to the relevant global targets.

Under the UNFCCC, Mongolia has submitted national communications and developed a National Action Programme on Climate Change (2011). The national communications by Mongolia to the UNFCCC have outlined priority adaptation measures as well as NAMA (nationally appropriate mitigation measures) for all sectors. The updated National Action Program on Climate Change was adopted by Mongolia's Parliament in 2011.

The updated National Action Program on Climate Change was adopted by Mongolia's Parliament in 2011. During the first phase (2011-6) it sets out to strengthen national mitigation and adaptation capacities, set up legal, structural and management systems and improve public and community participation. The first of five activities under the programme is to establish the legal environment and institutions to climate change related issues in Mongolia, the fourth activity is to expand the national monitoring network and improve capacities, and the fifth activity is to raise public awareness, and support citizens and communities to participate in climate change mitigation and adaptation actions.

As a signatory to the Convention on Combating Desertification, Mongolia has identified a strategy and measures to prevent land and pasture degradation and desertification in the National Programme to Combat desertification.

Mongolia adopted a Green Development Policy, and an Action Plan under the policy in January 2016. The goal of the policy is to advance Mongolia's national development in an environmentally sustainable manner, building the conditions for future generations to benefit and gain in the long term and to ensure environmental sustainability through creation of growth based on green development concepts and through citizens' participation and inclusiveness".

A new Gender Mainstreaming Strategy of Mongolia's Environment Sector, in which three strategic priorities are identified. The Ministry of Environment, Green Development and Tourism developed and approved the first ever sectoral Gender Mainstreaming Strategy document in May 2014, as a part of its efforts to enforce the Law on Gender.

In May 2012, the Parliament of Mongolia adopted a comprehensive revision of Mongolian environmental laws. The new environmental legislation replaces 18 environmental laws with 8 laws and introduces 2 entirely new laws. The purpose of the review was to reduce duplication and improve the quality of regulation, ensure responsible, environmentally-friendly and sustainable development, improve economic efficiency, introduce international standards in environmental auditing and the "polluter pays" principle, increase public participation in environmental decision-making, and secure funds for environmental protection.

The Law on Soil Conservation and Desertification Control (2012) assigns responsibility for sustainable use and soil protection to resource users and regulates local government responsibilities.

An important innovation of the 2012 legal package was the introduction of "Polluter Pays" principles. Polluters are now liable to pay compensation for damage caused to the environment and natural resources. The amount of compensation payable is dependent upon the natural resource which has suffered the damage. Natural resources in Mongolia are all to be assessed by environmental assessors. Following this assessment, each type of natural resource is to be assigned an intrinsic

value. The introduced concept of environmental audits requires that entity involved in the use of natural resources to commission an environmental assessor to conduct an environmental audit every two years at their own costs, and to implement the recommendations proposed in such environmental audit.

A revised "Law of Mongolia on Environmental Impact Assessment" (EIA Law) was adopted. According to the law, a proposed project with impact on the environment has to a) inform and report on the implementation of environmental management plans to the local population, local government, and other stakeholders within the deadline specified by the Ministry of Environment, Green Development and Tourism; and b) prepare and submit to the Ministry of Environment, Green Development and Tourism a restoration and closure management plan for mining and petroleum projects not less than three years prior to proposed closure.

The EIA Law requires that in preparing an EIA report, the project sponsor must include minutes of meetings at which local people who are to be affected by a proposed project were consulted. The EIA Law authorizes the relevant minister to adopt detailed regulations on such public participation.

The Law of Mongolia on Water dated 22 April 2004 ("Old Water Law") has been replaced with a revised version of the Law of Mongolia on Water dated 17 May 2012 ("Water Law"). The Law of Mongolia on Fees for Use of Water and Minerals Water has been consolidated with other laws on the use of natural resources and is replaced with the Law of Mongolia on Natural Resources Use Fee dated 17 May 2012 ("Natural Resources Use Fee Law"). On 17 May 2012, the Law of Mongolia on Water Pollution Fees was newly adopted to introduce fees payable for pollution of water resources ("Water Pollution Fees Law"). Under the Water Law, the Government has the authority to determine the intrinsic environmental value of water resources for each region or river basin⁴⁶.

In the agricultural sector, the "Herder Policy" encouraging collective action, the "Law on Cooperatives" and the "Mongolian National Livestock Program" are directly relevant to project implementation. The purpose of the program is to develop a livestock sector that is adaptable to climate change and social development and create an environment where the sector is economically viable and competitive in the market economy, to provide a safe and healthy food supply to the population, to deliver quality raw materials to processing industries, and to increase exports.

6. Recommended features of project design and implementation

Project design and implementation should be based on participatory and multi-stakeholder processes as practiced on Soum level in PMPMD 1. It should be extended to a more strategic approach for pasture management and climate change adaptation as described in the design report. For landscape level planning, multi-stakeholder (across sectors) and multidisciplinary approaches should be applied.

6.1. Mitigation measures.

Mitigation and safeguard measures to reduce potential adverse environmental, climate change, and social impacts have been described under 2.1. above. In addition, to avoid or mitigate potential negative impacts, close cooperation with ongoing projects should be established to strengthen synergy potential. In the Eastern Project Area, the UNDP/GEF supported project on Ecosystem Based Adaptation⁴⁷ (EBA project) would be an important program to liaise with and learn lessons from, particularly on water resources protection and rehabilitation.

Other programs, particularly in the Eastern steppes, include those supported by international NGOs including The Nature Conservancy, and their support to stakeholder cooperation for grasslands

⁴⁶ http://www.hoganlovells.com/files/Uploads/Documents/Mongolia_newsflash_-_Revision_of_environment_law_-_October_2012_1003877.pdf

⁴⁷ Ecosystem-based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia

conservation around Toson Hulstay Nature Reserve, and initiatives that may have been supported under previous programs of the Worldwide Fund for Nature (World Wildlife Fund, WWF) and Wildlife Conservation Society (WCS). WCS has been supporting wildlife conservation and community based approaches over the last decade under several programs, including work with herder communities.

6.2. Multi-benefit approaches.

Explore opportunities to promote green growth and multiple-benefit approaches for production, poverty reduction and the environment, including maintaining ecosystem services and biodiversity, reducing emissions and building climate resilience.

Opportunities for multi-benefit approaches for production, poverty reduction, maintaining ecosystem services and building climate resilience are integral design elements of both PMPMD 1 and 2. With a stronger linkage between the components on pasture management and market development, there is a greater potential to realize multi-benefits. The approach to herder group organization has proven to support lower income herder households and improve pasture management through improved rotational use. Climate change vulnerability is decreased as risk management and access to water is improved through targeted investments.

Linking with ongoing Aimag strategies to implement Mongolia's Green Development Policy, and its Action Plan, will provide further opportunities for multi-benefits. To this end, Aimag policies and ongoing programs need to be further explored and project activities aligned with them.

6.3. Incentives for good practices.

Several approaches have been designed for PMPMD AF that incentivize better practices in pasture and livestock management with benefits for natural resource conservation.

One concept is that of developing "sustainable cashmere". This would include an adjustment of herd structure to a more ecologically favorable structure – with fewer goats – and other best practices in pasture (seasonal moves, rotational use) and risk management (fodder production, livestock insurance). In turn, against certification as "sustainable" production, premium prices would be achieved. Similar concepts have been piloted and need further review to apply in the project areas.

With the introduction of an improved M&E system to measure pasture (management) improvements, PMPMD AF design could provide a mechanism that rewards achievement of agreed targets with top-up of group revolving funds.

Carbon finance opportunities could be explored whereby herder groups would be able to sell carbon credits, most likely on private "carbon markets". Several pilot activities have been undertaken and could be further reviewed⁴⁸.

6.4. Participatory processes.

Identify suitable participatory approaches/tools to draw on local understanding of local problems and potential solutions. For example, if addressing adaptation planning, introduce the use of climate risk and local resource maps, climate vulnerability assessment tools, early warning systems, DRR/DRM plans, climate resilience infrastructure, community timeline history, etc. for the planning of village development plans, as necessary. Identify areas of conflict between key actors and over use of resources and include suitable measures (financial and non-financial incentives, empowerment mechanisms, etc.) that will allow achievement of environmental objectives.

Regional development and Aimag development strategies are the overall framework planning project activities. Once project Soums, value chains and local investment opportunities are defined in more detail, several processes of participatory analysis and planning should be initiated:

⁴⁸ a) <http://www2.le.ac.uk/departments/geography/research1/projects/darwin>, b) <https://www.eda.admin.ch/countries/blueprint/fr/home/cooperation-internationale/projets.html/content/projects/SDC/en/2011/7F07809/phase1?oldPagePath=/content/countries/blueprint/fr/home/internationale-zusammenarbeit/projekte.html>

- a) Landscape level planning through stakeholder cooperation; this may include Aimag government agricultural and environmental departments, protected area administrations and river basin administrations.
- b) Soum level planning of stakeholders for local strategy development
- c) Participatory mapping of pasture areas and groups, facilitating consensus among herders, and with Soum government; ALAGAC procedure on natural resources allocation.
- d) Group formation/facilitation and participatory analysis and planning through tools including “natural resources mapping”, “changes and trends of natural resources”, threat analysis”, “causal flow diagrams”, “action planning”, as well as “social mapping”, “wellbeing criteria and ranking”, “opportunities for livelihood improvements and barriers”, “livelihood analysis”, “Institutional analysis”
- e) For gender analysis – meetings with men and women separately, “seasonal calendars, annual and daily workload”, “mobility mapping”, “semi-structured interviews”
- f) Developing participatory M&E with groups, (social, environmental and economic indicators, baseline)

7. Analysis of alternatives.

Discuss the various alternatives including environmental objectives and reasons for choosing the best option. Provide where relevant a comparison of alternatives based on environmental and social impacts, climate change vulnerability, technical feasibility and cost.

It is early stage to discuss alternatives when exact project areas, and investments for value chains and climate change adaptation have not been defined yet, by location.

8. Institutional analysis.

8.1. Institutional framework.

Analyze the environmental decision-making chain of command to also include other sectors that are key actors in environmental management. Identify who would be responsible for the various activities.

Responsibilities are defined in the project design document. The Ministry of Finance and Ministry of Food and Agriculture, and their line officers on Aimag and Soum level, are the main implementers. The local implementation structure is defined by the Soum level working group, where a Soum project facilitator is the link to the PMU and functions as the secretary of the Soum working group that is the main oversight body for local implementation.

The legal framework of Mongolia defines the responsibilities in environmental management and compliance monitoring through state inspectors. The Law on Protected Areas defines responsibilities for management of land in Protected Areas. The Law on EIA defines the process of preparing EIAs, detailed EIAs, and the review and approval process. The guideline on offsetting defines the methodology to calculate damage to land and required compensation.

8.2. Capacity building.

Identify community and other stakeholder capacity building needs, supported by effective information, education and communication activities. Include specific training (ENRM and/or climate-related issues), approvals, local permits, compliance with specific international guidelines and standards, compensation, grievance mechanisms, etc.) to be considered in the Financing Agreements.

Capacity building needs are addressed in the PMPND 2 initial design documents. They include:

- a) Trainings for Soum government officers in developing local strategies for pasture management and climate change adaptation, joint planning, annual land use planning, ALAGAC procedure of resource definition and allocation; technical trainings in pasture management, water resources management/protection, livestock breeding and health, risk management. Landscape level planning and stakeholder cooperation (Aimag governments, Protected Area Administrations, River Basin Administrations)
- b) Cooperatives training, business development, processing/marketing for producers/herders

- c) Veterinarians and local inspectors: animal health, food safety
- d) Pasture and risk management, water sources protection and rehabilitation, climate change adaptation

Other capacity building opportunities may include (in project areas where extractive industry developments are ongoing or upcoming): a) to build capacity of local government and rural/herder communities on the legal framework regulating licensing for mining, obligations of mining and other companies under EIA law, and on ongoing dispute resolution processes piloting tripartite mechanisms (local government, herders/herders institutions/private sector companies), (ongoing process in Khanbogd Soum is piloting community engagement with extractive industry, with CAO/IFC facilitation); b) ALAGAC procedure on securing customary use rights; c) FAO facilitated learnings on Voluntary Guidelines for Tenure.

9. Monitoring and Evaluation.

This section should include M&E recommendations. Describe how participatory environmental, social and adaptation monitoring will be ensured and provide specific indicators with special emphasis on the linkage between poverty, environment and climate change. Focus on the identification of third level indicators to adequately capture the impact of project activities on the environment. IFAD encourages the collection of GPS coordinates of all interventions so as to enhance monitoring, impact assessments and overall accountability of actions. As the activities will be incorporated into the various project and programme components, monitoring should be aligned to the project M & E system.

Improved M&E procedures to capture project results, promote adaptive management and incentivize best practices are suggested in the Working Paper on Pasture Management and Climate Change Adaptation Component (page 4), and the recent adjustment of methodology among relevant agencies in Mongolia has been described above (page 5).

The improved process will establish a baseline on Soum and group level, draw on the recently unified methodological approach for assessing rangeland health facilitated by Green Gold, and incorporate practical methods applied by PMPMD, Green Gold and ALAGAC for community based monitoring (photo monitoring) as well as traditional ecological knowledge of herders. The participatory M&E including social, environmental and economic indicators will be further developed during project design.

10. Further information required to complete screening

Highlight additional information or studies (includes land assessment, social assessment, and climate risk) needed to take better advantage of the opportunities offered by the environmental and social context to: (i) influence the necessary changes in project location, design, technologies, objectives, etc (which may alter the project inputs once these factors are taken into consideration); and (ii) prevent, eliminate or mitigate the environmental, social and climate concerns, including risks that the project intervention(s) may create.

Further consultations with stakeholders on all levels, with particular reference to gender, biodiversity and landscape preservation, as well as marketing opportunities to define project Soums should be undertaken, and coordination and experience sharing developed in detail.

For land assessments, climate risk, biodiversity assessments, review relevant documentations and program reports including: a) Regional, and Aimag Development Strategies, b) Ecoregional Assessment: Identifying Conservation Priorities in the Face of Future Development – Applying Development by Design in the Grasslands of Mongolia. The Nature Conservancy, Ministry of Nature, Environment and Green Development, 2011, c) other eco regional assessments that have been completed, d) Green Development Policy and Action Plan.

Further documents/lessons learnt, particular regarding Eastern Project Area include, among others: a) Best of the Wild. Wildlife Conservation Society and the Eastern Steppe of Mongolia⁴⁹, b) **'Green Gold' helps herders develop better land-management plans, 2014. (SDC)**, c) **Adding value to wool products, 2013 (SDC)**, d) Making Grasslands Sustainable in Mongolia, Volume 1. Grassland Management: Adapting to Climate Change. ADB. (2013). (Eastern Project Area), e) Making Grasslands Sustainable in Mongolia, Volume 2. Herders' Livelihoods and Climate Change: Improving Pastureland and Livestock Productivity - A Resource for Extension Workers, ADB. (2013) (Eastern Project Area)

Close coordination with the following programs to achieve synergies, complementarity and lessons learning: a) GAFSP/LAMP (FAO) – Livestock and Agricultural Marketing Project (overlapping in Arkhangai and Uvurkhangai), b) Green Gold Project (SDC), c) Ecosystem-based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia (UNDP/GEF), d) Sustainable Livelihoods Project/SLP 3, World Bank (country wide)

12. Record of consultations with beneficiaries, civil society, general public etc.

This SECAP note has been prepared following stakeholder consultations during the design mission April 4 – 15, 2016 in Mongolia. The mission included a field trip to two of the project Aimags, where meetings were held with Aimag and Soum government representatives, herders and processors (wool). While the notes draw on extensive experience of the author in rural Mongolia in design, implementation and evaluation of programs in sustainable land management, pasture and livestock management, climate change adaptation and biodiversity conservation, more detailed assessments are needed – particularly as project Aimags are still to be confirmed and Soums are to be determined. The diversity of ecological, social and economic settings, and thereby of risks and opportunities, is high as the project areas extend over a vast territory with different characteristics.

Annexes:

- Annex 1 - Herder households and livestock numbers in project Aimags
- Annex 2 - Definition of Recovery Classes of Rangeland Health Monitoring Sites, and Map of Recovery Class Information by Aimag
- Annex 3 - Map of River Basins in Mongolia
- Annex 4 - State Protected Areas and other sites under local, national or international protection or significance (Ramsar Sites, World Heritage Sites, local protected areas, Nature Reserves, Monuments) in Project Aimags,
- Annex 5 - Map of Portfolio of Conservation Sites, and potential conflicts with extractive industry

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http://vserver1.cscs.lsa.umich.edu/~danbrown/Mongolia/uploads//Main/Mongolia_prospectus%20pdf%20final.pdf