ENVIRONMENT AND SOCIAL MANAGEMENT FRAMEWORK

Document Stage: Discussion for Circulation

Project ID/Number: P165945

September 2019

Mongolia: Livestock Commercialization Project

Prepared by: Ministry of Food, Agriculture and Light Industry (MOFALI), Government of Mongolia for World Bank

CURRENCY EQUIVALENTS

(as of 1 September 2019)

Currency unit	–	Mongolian Tugrik (MNT)
MNT1.00	=	$ 0.00037425
$1.00	=	2672.00 MNT

ABBREVIATIONS

ADB	Asian development Bank
AI	Artificial Insemination
AP	Affected Person
Aimag	Province, Sub-national Administrative Unit
ACM	Asbestos Containing Material
ADB	Asian development Bank
ADFALI	Aimag department for Food, Agriculture and Light Industry
CERC	Contingent Emergency Response Component
C-PIM	CERC Project Implementation Manual
CPS	World Bank Country Partnership Strategy
DPR	Detailed Project Report
EMP	Environmental Management Plan
EMoP	Environmental Monitoring Plan
ESMF	Environmental and Social Management Framework
ESP	External Service Providers
E&SIA	Environmental and Social Impact Assessment
ESRF	Environment, Social Review Form
FAO	Food and Agriculture Organization of United Nations
FMD	Foot-and-Mouth Disease
FMM	Financial Management Manual
GASI	General Authority for Specialized Inspection
GoM	Government of Mongolia
GAVS	General Authority for Veterinary Services
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
IDA	International Development Association
ICB	International Competitive Bidding
IFAD	International Fund for Agricultural Development
IFC	International Financial Corporation
IEM	Independent Environmental Monitoring
IPMS	Independent Progress Monitoring System
LCP	Livestock and Agricultural Marketing Project
M&E	Monitoring and Evaluation
MIS	Management Information System
MET	Ministry of Environment and Tourism
MoF	Ministry of Finance
MoFALI	Ministry of Food, Agriculture and Light Industry
MSUA	Mongolian State University of Agriculture
NAMHEM	National Agency for Meteorology, Hydrology and Environmental Management
NCB	National Competitive Bidding
NGO	Non-Governmental Organization
NFSP	National Food Security Program
LCP	Livestock Commercialization Project

NLP	National Livestock Program
OP	Operational Policy
PAD	Project Appraisal Document
PCU	Public Complaint Unit
PDO	Project Development Objective
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PMS	Progress Monitoring System
PMIS	Project Management and Implementation Support
PP	Productive Partnership
PSC	Project Steering Committee
PSG	Project Support Group
QCBS	Quality and Cost-Based Selection
SDC	Swiss Development Corporation
SME	Small and Medium Enterprises
SMEDF	SME Development Fund
SOE	Statement of Expenditure
SPS	Safeguard Policy Statement
TAD	Trans boundary Disease
UN	United Nations
UNDAF	United Nations Development Assistance Framework
USAID	United States Agency for International Development
VOC	Volatile Organic Compound
WB	World Bank

WEIGHTS AND MEASURES

1 Cusec	:	Measure of flow rate (28.317 liters per second)
1 ha. (hectare)	:	10,000 sq m
1 km (kilometer)	:	1,000 m
1 kV	:	kilovolt (1,000 volts)
1 kW	:	kilowatt (1,000 watts)
1 kWh	:	1 kilowatt-hour = 1000 watts

NOTE: In this report, "$" refers to US dollars.

GLOSSARY OF TERMS USED

General Terms

Aimag	:	Province
Soum	:	Smallest administrative unit of Aimag
Bagh	:	Smallest administrative unit of Soum
District	:	Smallest administrative unit of UB city
Khoroo	:	Smallest administrative unit of District
Construction Blue Print	:	Technical and detailed drawing for construction of building

CONTENTS

1. INTRODUCTION

1.1 Background

1. Mongolia is a landlocked country wit population of three million people, and half of its population live in the capital Ulaanbaatar. Mongolia is also endowed with world-class mineral deposits (coking coal, copper, gold, etc.), a large base of livestock assets, extensive pasture land and pristine nature, a relatively young population and near full literacy. The domestic private sector has recently expanded in all key sectors (banking, property, telecom, food and beverage, etc.) and foreign direct investment has shown clear potential. The country has been able to increase the productivity of its economy but this positive outcome has been partly offset by macroeconomic instability. The sudden deceleration of economic growth between 2014 and 2016 led to a subsequent fall in employment growth and real wages. Macroeconomic instability manifests itself in dual fiscal and trade deficits and can be tracked to (i) lack of economic diversification resulting from over reliance on the mining sector, and (ii) lack of prudent fiscal policy, that originates from a policy "implementation gap" that prevents the country from putting into action its modern regulatory framework.
2. Multiple recessions during the last three decades have reversed the previously fast reduction in extreme poverty and weakened human development growth. For instance, the 2008 global economic crisis seriously affected the key export sector (mining) and the agriculture and livestock sector. In 2010, extreme winter conditions, in terms of extremely low temperatures and high wind velocity (locally called dzud)[1], led to a double-digit contraction in the agriculture sector. Between 2014 and 2016, poverty rate in Mongolia again climbed back to 29.6 percent with only 35.3 percent of households were found to be food secure and 50.2 percent experiencing moderate or severe food insecurity. The percentage of children 6-23 months who had minimum dietary diversity and minimum meal frequency during the previous day was 43.8 percent. Paradoxically, 44 percent of men, 54 percent women and 11 percent of the children under five in the country were overweight and obese. The pastoral and nomadic background in Mongolia is associated with unique food consumption patterns, with high intake of proteins and carbohydrates from meat and milk products, but little dietary diversity leaving the population increasingly susceptible to nutrient deficiencies and excess weight gain.
3. Animal and human health risks, growing environmental stress and climate change issues can hinder economic growth and potentially put population wellbeing at risk. Large herder population increases the risk of zoonotic diseases. In recent years zoonotic diseases have expanded and outbreaks of trans boundary disease have emerged in animals and humans. Despite the progress achieved, brucellosis, anthrax, tick borne disease and rabies still constitute a threat to human health and welfare. Climate change and human action have brought about higher disaster risks and environmental degradation. Over the last six decades, growing frequency and severity of natural disasters (dzud, drought, and flood) has been observed as well as a clear upward trend in Mongolian average temperatures. If not addressed, these trends could likely hinder economic growth and rural population wellbeing in the long term.
4. The government of Mongolia (GoM) realizes this challenge while also recognizing importance of the livestock sector in improving the socioeconomic well-being of the rural population. To this end, GoM has recently promulgated multiple government programs and laws that would contribute to enhance the competitiveness of the livestock sector, especially in improving animal health and safety. There has been significant progress in addressing the animal health situation in Mongolia, including with the Cabinet's approval of a national strategy for FMD in 2015; OIE's endorsement of an official FMD control program in 2016; and ratification of new laws on animal health, genetic improvement and inspection. For instance, improving the delivery of competent international standard veterinary services is recognized to be critical in the the Animal Health Law (2017), Animal

[1]Dzud refers to extreme winter weather conditions with negative consequences for animal.

Genetics Law (2018) and the subsequent establishment of the General Authority of Veterinary Services (2018). With these programs and increased investments in the sector, the government intends to improve exports that would reduce the dependence on volatile export revenue from the mining sector. These programs would also help to promote rural employment and the well-being of the rural population. Improving livestock productivity and commercialization therefore enables Mongolia to achieve economic diversification while also creating broad-based employment and income growth in rural areas. This is important as it will reduce income inequality by reducing the productivity and income gap for small and medium farmers.

1.2. The rationale of the World Bank support to the project

5. World Bank has long history of providing investment and analytical support to agriculture sector in Mongolia. Livestock and Agriculture Marketing Project (LAMP) supported by the Bank piloted several innovative ways to deliver services to herders, women farmers and their cooperatives (hay production, genetic improvement, linkage to markets and agro-processing) with satisfactory outcomes. The Bank's Engagement will support the GoM's efforts to shift from a strategy of extensive/input focused measures to enhance food security and export competitiveness to a more sustainable, quality driven model. This will also require progressive shifts in the way in which public resources are deployed in the sector to achieve GoM's policy priorities in animal health, productivity improvements, value chains and commercialization
6. The proposed project supports the World Bank's twin goals of ending extreme poverty and promoting shared prosperity and is closely aligned with the World Bank Country Partnership Strategy (CPS) for Mongolia for the period FY2013–2017. It is in line with Pillar 2: Build a Sustained and Diversified Basis for Economic Growth and Employment in Urban and Rural Areas, the proposed project would support Outcome 2.1: Enhancing the investment climate and financial intermediation by working with Small and Medium Enterprises Development Fund, and Outcome 2.2 – Create more opportunities in the rural economy for enhanced livelihoods through productive, healthier and sustainable livestock sector and promoting higher quality and higher value agribusinesses. It also contributes to Pillar 3: Address Vulnerability through Improved Access to Services and Better Service Delivery, Safety Net Provision and Improved Disaster Risk Management by targeting poor and vulnerable households; increasing incomes through employment creation and agriculture productivity improvements; enhancing nutrition outcomes through improved diet diversity; and mitigating pandemic and climate risks in rural areas. It is also consistent with the observations in Performance and Learning Review (PLR) of the CPS concluded in FY16.
7. The proposed project is aligned with Mongolia's policy priority—as described in Mongolian Government Action Plan for 2016-2020 and in the Government's Agenda for Sustainable Livestock 2018. The key objective of the action plan is to diversify the country's export capacity to non-mining products and goods while the Agenda for Sustainable Livestock aims to support sustainable development of the livestock sector. The development objectives of the proposed project—improving livestock productivity and commercialization—play a key and direct role in achieving these government priority objectives. The project's activities will also contribute to the successful implementation of the Mongolian One Health plan by developing greater policy and program cohesion between the human and animal sectors and improved coordination and information sharing.
8. National Livestock Program: The NLP (2016 – 2020) aims to provide the entire nation with secure supplies of accessible nutritious and safe food to enable healthy livelihoods and high labor productivity founded on the participation of the people, government, the public and private sectors.
9. The Parliament-approved 'State Policies on Food and Agriculture' has set objectives, among others, (i) develop the livestock sector based on dominantly traditional livestock herding & lifestyle adapted to climate change combined with intensive livestock farming in peri-urban areas and crop producing regions (ii) Ensure the supply of safe and quality food to the population based on

processing of the raw materials using the advanced technologies; (iii) Introduce innovations and develop the sector in science-based and knowledge-oriented directions to ensure sustainable development; (iv) Improve livestock productivity, commercialization and meat export potentials by promoting cattle and sheep production; (v) implement strategies for prevention & control of highly contagious animal diseases and establishing disease-free zones, building capacities of early diagnosis of and quick response to contagious diseases

10. The proposed project would provide incentives to mobilize commercial finance for value chain development, thereby linking herding households with other value chain actors. This will be done through support to the government in creating enabling conditions for commercialization and competitiveness of the livestock sector. Making strategic investments for creation of public goods and services and facilitating private sector partnerships with herders/farmers for improving access to markets. This would also entail complementary but limited investments to strengthen strategic livestock-agriculture linkages (feed and fodder development) and improved nutrition for women, youth and vulnerable. The project will actively crowd-in private capital and government funding to enhance the impact of limited IDA funding.

2. PURPOSE AND SCOPE OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

2.1 Purpose of ESMF

11. The proposed design for Livestock and Commercialization Project (LCP) has an "open programme" characteristic, so the exact design and location of future interventions are not yet decided. This Environmental and Social Management Framework (ESMF) provides a guiding framework for the identification and management of environmental, social and climate risks and potential impacts that may be associated with the development and implementation of project activities and/or with any sub-projects or activities implemented under the project. Commercialization could benefit the livestock SMEs more and to ensure that project benefits are fairly shared, the project will give preference to those private enterprises that demonstrate greater interest to work with small herders and vulnerable groups through the productive partnership arrangements. The ESMF will include inclusive growth aspect to address this issue.
12. The ESMF adopts a framework approach because the specific sub-projects and project activities were not fully specified at the time of project appraisal. The ESMF sets out procedures to enable screening of sub-projects for potential adverse environmental or social impacts, including those on indigenous people and ethnic minorities, and specifies processes and requirements to ensure that potential adverse impacts are identified, avoided, minimized or mitigated with the appropriate involvement of project affected people and other stakeholders. This ESMF has been consulted with project stakeholders prior to disclosure of the ESMF, and disclosed to the public through central and project aimags' liberaries, websites of MOFALI and WB. However, it will be essential to identify relevant stakeholder and to hold workshops to consult on the ESMF with sub-project proponents at the beginning of project implementation and its sub-plans.

2.2 Scope of ESMF

13. The ESMF is consistent with the laws and regulations of Mongolia; the World Bank's Environmental and Social Policy or Safeguard Policy, Operational Policies and Banks Procedures; the World Bank Group's General Environmental and Health and Safety Guidelines and IFC Performance Standard 2; Guidelines on Incorporating Human Rights Standards and Principles, Including Gender; ILO core labour standards; the UN Basic Principles and Guidelines on Development-based Evictions and Displacement; and the Voluntary Guidelines on Responsible Tenure.
14. The ESMF consists of:

- Environmental, Social and Climate Risk Screening Procedures;
- Guidance on in-depth assessment of economic and social impacts and elaboration of environmental management plans;
- Monitoring, Review and Reporting;
- Roles and responsibilities in ESMF implementation;
- Considration to Ethnic Minority Groups
- Pesticide Management Plan.

1) Environmental, social and climate risk screening procedures: Procedures and templates are given for screening individual sub-projects for environmental, social and climate risks. The result of screening will help to categorize each sub-project as Category C (no adverse impacts), Category B (only moderate risk activities). The environmental and social screening process is designed to align with national environmental assessment laws. The templates enable project implementing agencies to identify sub-projects required by national law to undergo general EIA or Detailed EIA. Screening of climate risks (mitigation and adaptation) is to be conducted by the national PIU Environment Specialist on the basis of information provided by sub-project proponents.

2) In-depth assessment and Environmental Management Plan (EMP) preparation: Where national law requires that a general EIA needs to be conducted, the required information is prepared and review by the national PIU Environment Specialist and submitted to Ministry of Environment and Tourism (MET) for review and determination in accordance with national procedures for general EIA. Where national law or the determination by MET requires a detailed EIA, the national PIU Environment Specialist will issue ToR for an in-depth environment and social impact assessment (ESIA) that meets both national regulatory requirements and international standards as set out in the ESMF. Any category B sub-project is required to undergo in-depth assessment and to produce environmental management plans (EMPs), whether or not this is required by national law. The WB's OP sets out requirements for stakeholder engagement in the scoping phase of the ESIA and in discussions on draft ESIA findings. National requirements for disclosure and consultation on ESIA findings and proposed EMPs are incorporated into the ESMF. Implementation and monitoring of EMPs is integrated into sub-project procedures by establishing the EMP within the sub-project contract documents so that the EMP will receive funding and supervision along with the other components. Generic guidance is given in the ESMF on EMPs for construction projects. Further guidance on EMPs for animalwelfare-related sub-project components and other topics should be developed during project implementation.

3) Monitoring, review and reporting: The ESMF provides for internal and external monitoring, and review of the ESMF. ***Internal monitoring*** by project implementation agencies aims to ensure that inputs and activities to implement E&S measures have been done; that mitigation measures are effectively and to ensure compliance with all relevant requirements. In the case of Category B projects, an ***independent monitoring expert*** will be hired to ascertain that the proposed mitigation measures are being implemented and that there is compliance to the terms and conditions for sub-project approval. The **ESMF review** will assess implementation of the ESMF by reviewing the first 5-10 approved sub-projects and recommend any additional measures for strengthening the management framework and implementation performance. In addition, a comprehensive review of ESMF application should be undertaken at mid-term to assess relevance and effectiveness of ESMF implementation.

4) Roles and responsibilities in ESMF implementation: The PIU will be staffed with a PIU Environment Specialist. The PIU will have primary responsibility for ensuring that the requirements of the ESMF are complied with, and for ensuring that annual budgets are available for specific activities required by the ESMF to be conducted. If there will be aimag level PIUs, they will support the preparation of annual plans, and documentation required by the ESMF for sub-

project screening, ESIA and EMPs, and will be involved in monitoring sub-project safeguard compliance. Sub-grantees and contractors will be responsible for implementation, monitoring, documentation and reporting of safeguard activities. The MET at national level and ADET at aimag level will be responsible for review and determination of general and detailed EIAs, and for monitoring EMP implementation where required by national law and WB OP. The PIU will report quarterly to the project steering committee on ESMF implementation. Specific roles of different actors in each procedure in all components of the ESMF are specified.

5) Considration to Ethnic Minority Groups: World Bank OP 4.10 identifies indigenous peoples as "a distinct, vulnerable social and cultural group possessing the following characteristics in varying degrees:

a. self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
b. collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
c. customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
d. an indigenous language, often different from the official language of the country or region."

The Indigenous People Policy is triggered because ethnic minorities are known to reside in Bayan-ulgii aimag, one of the project areas, and could potentially be impacted by the project. However, at this stage, it is still unclear whether project interventions will take place in soums where these minorities live and whether project has direct impact on them, although the project will actively seek opportunities to benefit these people by designing meaningful activities that support Project's PDO. The impact on IP and associated mitigation measures have been incorporated in the ESMF. When designing these activities these ethnic minority people will be consulted in culturally appropriate manner including using their language.

The ESMF includes guidance on involving ethnic minorities i.e. inclusion of IP in project activities through consultations during implementation; ensuring the provision of culturally appropriate project benefits by using their language in the provision of services; measuring their inclusion to the project benefits/services including tracking their usage of animal health services, local disclosures, feedback loops, etc. informing and guiding project implementation.

6) Pesticide Management Plan: is developed within this ESMF (annexed in **Annex 1**.) to define the necessary activities to mitigate and prevent potential risks and negative impacts of using and distributing of pesticides by the project target groups and provides guidance for conducting for all public and private entities involved in LCP or associated with the distribution and use of pesticides, particularly where there is inadequate experience and practice in using pesticides. The PMP is proposed for using within the implementation of LCP in the frame of Mongolian laws and legislation as a basis whereby government authorities, project involved stakeholders, farmers, those engaged in using of pesticides and any citizens concerned may judge whether their proposed activities constitute acceptable practices.

3. DESCRIPTION OF THE PROJECT COMPONENTS AND SUBCOMPONENTS

3.1 Summary of LCP Project design

15. The Project Development Objective (PDO) is defined as to "to improve livestock health, productivity, and commercialization of targeted value chains in project locations and to provide immediate and effective response in the event of an eligible crisis or emergency". The objective is aligned with selected national programs and policy reforms, such as Animal Health Program the

purposes of which are to comprehensively implement measures to minimize or completely eliminate occurrence of animal infectious diseases; maintain the infectious disease-free status internally and externally; provide the population with safe food and processing industries with good quality raw material, increase exporting opportunity of livestock sourced raw material and product; and Industrialization 21:100 National Program which aims to increase trade volume, boost economic growth and employment through introduction of innovative technology in provinces corresponding to their specific resources, conditions and potential. The evidence from project implementation is to systematically inform design and policy of larger national initiatives, such as the Parliament-approved State Policies on Food and Agriculture, and National agenda for Sustainable Development 2030, thereby building complementarity with World Bank supported Economic Management Support Operation.

16. The proposed key PDO/Outcome level indicators are:
    (a) Reduced prevalence of priority diseases in project intervention areas (percentage)
    (b) Increased yield of livestock products (meat and dairy) (percentage)
    (c) Increased value of livestock products (percentage)

3.2. Project Components

17. Mongolia's Ministry of Food, Agriculture, and Light Industry has identified the livestock sector's competitiveness as a development policy priority. The project is structured as an Investment Project Financing (IPF) with the following four components, financed with an IDA credit in the amount of US$30 million over five years.

Component 1: Animal Health Services (US$20 million)

15. This component aims to improve the quality of and access to veterinary services nationally and to contribute to the establishment of TAD-free zone(s) in specified areas. The proposed interventions will reduce animal diseases and provide better veterinary public health through strengthened veterinary services and improved program delivery. The project activities under this component will strengthen the Mongolian national veterinary services in line with international standards, finance activities that will contribute to the establishment of disease-free zones for FMD and PPR and improve the quality and safety of animals and animal products entering the value chain through improved management of animal health. The component will support animal identification and traceability from herders and producers to processors. All project activities under this component, including institutional and capacity building, disease surveillance and control and food safety, the digital livestock interventions, and participatory animal health risk management initiatives, will also strengthen climate adaptation mechanisms, enhancing the resilience of Mongolia's livestock system against adverse climate change events.

16. **Subcomponent 1.1: Institutional and Capacity Building.** The project will strengthen the institutional capabilities of the recently established GAVS for effective implementation of the Animal Health Law (2018). This will be achieved by supporting investments that will enhance the performance of the Mongolian Veterinary Services to be benchmarked against international standards. As a result, the GAVS will improve its ability nationally to effectively control animal diseases, promote animal welfare and the responsible use of antimicrobials, provide veterinary public health, and improve food safety. The project will support the GAVS in developing and executing a comprehensive human resource development plan and capacity-building programs for veterinary personnel, including paraprofessionals (in both the public and private sectors) and other technical staff such as scientists and laboratory technicians. This will include piloting of a Young Professionals Program for fresh veterinary graduates and an internship program for veterinary students in senior years for attracting young talent and shaping their technical knowledge and managerial skills to successfully drive, achieve, and sustain the GAVS initiatives. The project will support reviews by the OIE using its Performance of Veterinary Services (PVS) evaluation tool and

ensure that there is effective and systematic response as well as follow up on its recommendations. The Mongolia One Health plan will also be supported in bringing greater policy and program cohesion between humans and the animal sector.

17. **Subcomponent 1.2: Disease Surveillance and Control and Food Safety.** The project will support improving the delivery of risk-based disease surveillance and control programs for Transboundary Animal Disease (TAD)s, particularly Foot and Mouth Disease (FMD) and *Peste des Petits Ruminants or* aka Goat Plague (PPR) priority endemic diseases, and food safety in line with global and regional strategies. This will entail investments in developing national risk-based food safety supervision frameworks, epidemiological research, food risks assessments and food safety standards, effective immunization plans, improved disease surveillance methods, disease monitoring/surveys, and disease control activities, including risk communications with herders and producers. Nationally, veterinary drug quality control, disease diagnosis, and food safety laboratories networks will be strengthened, and their investigation capacity will be redefined with a greater hierarchy of diagnostic laboratory capabilities—central/reference laboratories, regional/aimag laboratories and 'inter-soum' laboratories provided for local field support. The project will also contribute to the establishment of 'high health' animal production compartments as per OIE guidelines. Operationally, disease surveillance and control activities and pilot initiatives will be focused on the project intervention areas.
18. **Subcomponent 1.3: Digital Livestock Interventions.** The project will pilot disruptive and digital technologies including big data, Internet of Things, sensors and smart devices, aerial logistics and surveillance (remote sensing and drones) tools for risk analytics, and livestock early warning systems for triggering risk management actions necessary for high health animal production systems, veterinary health services delivery, disease surveillance activities, and improved control of animal movements. The project will take a modular approach for building a comprehensive livestock information system to enhance data and evidence-based decision support systems for livestock programs in public and private sectors. This will entail developing/strengthening and integrating the animal health information system and laboratory information management systems (LIMSs) with animal/animal product traceability system for veterinary certification system (VCS), livestock movement control, and assurances for product quality and food safety. Based on the results of the ongoing pilot on animal identification and registration system (AIRS), a scale-up/integration road map will also be explored under the project. It will also institutionalize nomadic herding (transhumance) trails using digital tools such as the Geo-enabling Initiative for Monitoring and Supervision (GEMS) and ensure proper service delivery and feedback on services received by the poor herders.
19. **Subcomponent 1.4: Participatory Animal Health Risk Management Initiatives.** A community partnership in animal health risk management will be enhanced under the project. Community-based initiatives will be piloted that allow herder groups/associations to pool resources for improving delivery of quality veterinary services to herders/producers with greater compliance to disease surveillance and disease control programs. The already developed 'vulnerability and risk assessment tool' will also be used to support herders and primary producers to identify animal health risks and prioritize veterinary services delivery in the local areas. The project will ensure that women take leadership positions in this animal health risk community initiatives.

Component 2: Value Chain Commercialization (US$8 million)

20. The objective of this component is to improve livestock productivity and increase the volume of livestock products that meet market requirements on quality and food safety standards. The key strategy is promoting and supporting 'productive partnerships' between producers and processors/service providers based on the market needs and requirements. The project activities under this component, including extension, research, service delivery relating to animal breeding and related climate smart practices, and animal nutrition-related activities, will not only enhance herders and herder groups adaptation mechanisms to increased climate risks, but they also have

climate mitigation potential. The expected project outcomes, including improved livestock productivity and access to markets, will contribute to an increase in the livestock offtake rate. This will have implications for destocking of livestock (that is, herders will be encouraged to move from a quantity-centered to a quality-centered production system), which in turn contributes to GHG emission reduction and an improvement in pastureland that increases the land-based carbon sequestration.

21. **Subcomponent 2.1: Livestock Productivity.** This subcomponent will focus on the provision of technical, extension, and collaborative research with academic and research institutions. The project will strengthen policy-driven service delivery relating to animal breeding, animal nutrition, and high health production models in select aimags/soums. Making links between Component 1 and Subcomponent 2.2, it will support the following:
    (a) **Animal breeding services.** The project will support breed improvement of small ruminants and cattle through the creation of 'nucleus flocks' (elite herds of male or female sheep serving as genetic resource), 'male flocks' (male animals of indigenous breed with high genetic merit maintained in a high state of health), and artificial insemination units and through the capacity building of private breeding units/local breeders.
    (b) **Animal nutrition.** Deterioration in pastures and low levels of supplementary feeding cause severe malnutrition in animals, especially during the winter and spring seasons. The project will promote best practice models that foster year-round availability of animal nutrition, including growing fodder crops, hay making, and production of animal feed supplements. This activity will involve capacity building, trainings, and demonstrations for feed, fodder, and concentrates.
    (c) **High health production models.** The project will support semi-intensive and intensive production models in the meat and dairy sectors by establishing dairy clusters, feedlots, and high health compartments. These will be targeted in government-identified regions, mostly in the central north areas, suitable for fodder production and promotion of intensive and semi-intensive livestock farming.

22. **Subcomponent 2.2: Productive Partnerships.** The key strategy for value chain commercialization is promoting and supporting 'productive partnerships' between producers and processors/service providers based on the market needs and requirements. These partnerships are aimed at delivering high-quality animal health, livestock breeding, high health production and commercialization services to herders and intermediate aggregators/processors for ensuring quality supply of raw products to downstream value chain players. The project will encourage interventions related to mobilizing herders/herder organizations; improving breeding services delivery; organizing food and livestock processing clusters; improving the cost and product competitiveness of livestock and agriculture products, particularly milk and meat; increasing market access by herders/producers; introducing advanced technologies for intensive food production systems; and increasing domestic supply/exports of healthy and safe food products. The proposals from the private sector, large producer organizations, and public agencies will be selected through a transparent and competitive process and will be financed through performance-based incentives/contracts. The selection process will encourage productive partnerships in livestock production systems that adhere to climate-smart agriculture (CSA), thereby contributing to climate mitigation. Furthermore, the project gives priorities and incentives to women-led enterprises and herder organizations to establish project-financed productive partnerships. A joint review mechanism will be instituted under the project for systematic monitoring of outcomes from these engagements.

Component 3: Project Implementation Support (US$2 million)

23. This component will strengthen the project's implementation architecture. It will support the coordination of project activities, environmental and social safeguards, and the fiduciary functions of the Project Implementation Unit (PIU) under the guidance of MOFALI. The PIU will be staffed

and equipped to enable it to effectively carry out these activities. The component will finance incremental staff, consultants, operating costs, technical assistance (TA), training, monitoring and evaluation (M&E) activities, baseline and final impact assessments, information dissemination, and annual audits. Under this component, the project will ensure that at least half of the participants in M&E workshops, training events, seminars, and conferences will be women. Furthermore, the project aims that at least half of all project-funded professional positions such as PIU staff, young professionals, and technical service providers (TSPs) will be filled by women.

Component 4: Contingent Emergency Response Component (US$0 million)

24. Following an eligible crisis or emergency, the borrower may request the World Bank to reallocate project funds to support emergency response and reconstruction. The Contingent Emergency Response Component (CERC) would draw upon the uncommitted loan/credit/grant resources from other project components to cover emergency response. A 'CERC Project Implementation Manual' (C-PIM) will be prepared by MOFALI within three months from effectiveness. Triggers for the CERC will be clearly outlined in the C-PIM acceptable to the World Bank. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, and recovery.
25. The **Table 3.1** can display the components and activities applicable for ESMF proposed within Livestock Commercialisation Project.

Table 3.1 Components and activities applicable for ESMF proposed within LCP.

Components	Object	Main Activities	Potential activities may be suggested for implementing the main activities
Component 1	**Animal Health Services**	Improve the quality of and access to veterinary services nationally	1.1 Supply and distribute aseptic to local farmer/herders through soum level Veterinary Services
			1.2 Construct and operate livestock dipping facilities.
		Contribute to the establishment of TAD-free zone(s) in specified areas	1.3 Livestock disinfection activities spraying by liquor against the parasites
			1.4 Establish and build fencing for vaccinate the livestock
			1.5 Construct buldings or facilities for improving veterinary facilities and infrastructure
Subcomponent 1.1	**Institutional and capacity building**	Institutional development and capacity building	1.6 Study, survey and training
Subcomponent 1.2	**Disease Surveillance and Control, and Food Safety.**	Basic equipment and tools provided to labs and renovate buildings of labs	1.7 Install new equipment
			1.8 Renovate or construct buldings or facilities for improving laboratories and diagnostics infrastructure.
Subcomponent 1.3	**Digital Livestock Interventions.**	Pilot disruptive and digital technologies	N/A
Subcomponent 1.4	**Participatory Animal Health Risk Management Initiatives.**	Develop community partnership in animal health risk management	1.9 Advising and controlling on proper supplying, distributing and using of aseptics and medicine to local farmer/herders.
Component 2	**Value Chain Commercialization**	Promote improvement in pastureland	2.1 Establish and operate new wells Establish fencing the pastureland/farmland area
		Promote improvement of livestock productivity and access to markets	2.2 Establish and improve nucleus herds
			2.3 Introduce improved breed of livestock and provide herders with beef bulls
Subcomponent 2.1	**Livestock Productivity**	Promote best practice models that foster year-round availability of animal nutrition, including growing fodder crops, hay making, and	2.4 Plant fodder plants/forages.
			2.5 Fencing the hay making fields
			2.6 Distributing and using of pesticide and chemical fertilizers to local farmer/herders.

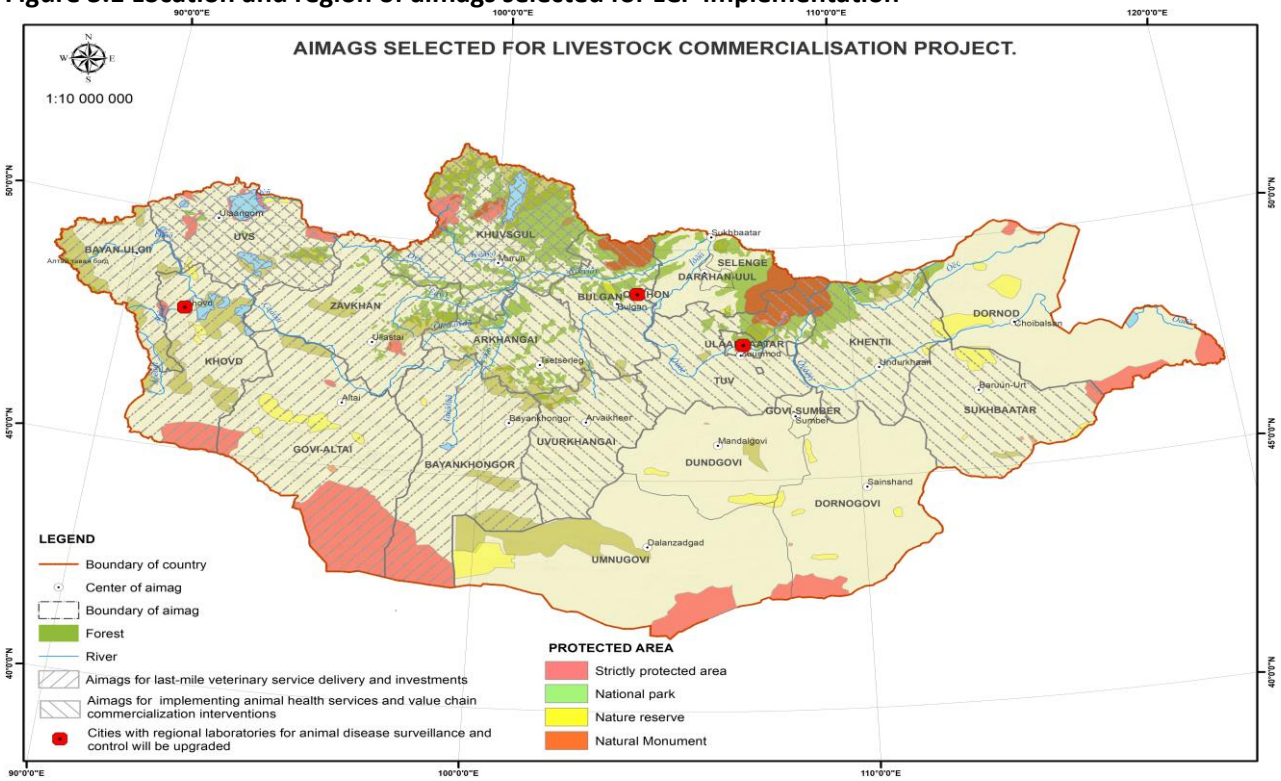
		production of animal feed supplements	2.7 Establishing of micro-scale processing units to make fodder products.
			2.8 Improve irrigation system and facilities
		Support semi-intensive and intensive production models in the meat and dairy sectors by establishing dairy clusters, feedlots, and high health compartments.	2.9 Operate semi-intensive dairy and meat farms
			2.10 Operate meat and dairy processing workshops
			2.11 Establish livestock feedlots facilities
			2.12 Establish livestock treatment facilities
Subcomponent 2.2	**Productive Partnership**	Improving breeding services delivery;	2.13 Establish nucleus herds of cattle and sheep to supply improved male animals to improve meat production.
		Organizing food and livestock processing clusters;	2.14 Establishing of micro-scale processing units to make meat products, and preserving meat.
			2.15 Introduce improved breed of livestock and provide herders with beef bulls, rams and improve artificial insemination (AI) capacity.
		Improving cost and product competitiveness of livestock and agriculture products, particularly milk and meat;	2.16 Operate small scale dairy factory
			2.17 Establishing of micro-scale processing units to make dairy products and preserving milk etc.
			2.18 Establish and operate slaughter house and meat storage
Component 3	**Project Implementation Support**	Support the coordination of project activities, environmental and social safeguards, and	N/A
		Fiduciary functions of the Project Implementation Unit (PIU) under the guidance of MOFALI	N/A
Component 4	**Contingent Emergency Response Component**	Draw upon the uncommitted loan/credit/grant resources from other project components to cover emergency response	**N/A**

3.3. Project Scope

26. The project will strengthen the institutional systems and governance of veterinary services at the national level by supporting (a) analytical studies and surveys, (b) strategy formulation and policy making, (c) development of national immunization plans and monitoring of rollout plans, (d) staff capacity building, (e) upgrade of trainings and extension systems, and (f) information systems. In addition, it will provide intensive support in **150 soums of 14 aimags** (including seven western aimags with a potential to be declared disease free zone) focused on last-mile veterinary service delivery and investments in animal disease surveillance, prevention, control and food safety. These aimags are **Arkhangai, Bayankhongor, Bayan-Ulgii, Bulgan, Gobi-Altai, Khentii, Khovd, Khuvsgul, Orkhon, Sukhbaatar, Tuv, Uvurkhangai, Uvs and Zavkhan.** The central and regional laboratories for animal disease surveillance and control will be upgraded as reference laboratories in **Ulaanbaatar, Erdenet, and Khovd.** (The **Figure 3.1** shows the location and region of project aimags.)

27. The project will implement value chain commercialization in conjunction with animal health interventions with strategic focus on meat and dairy sectors in selected soums of the eight aimags viz. **Arkhangai, Bulgan, Khentii, Khuvsgul, Uvurkhangai, Uvs, Sukhbaatar and Tuv.** These aimags were selected based on objective criteria such as (a) willingness of local governments to put in additional resources for project implementation; (b) size of healthy herds of cattle and small ruminants; (c) presence of good-quality institutions at the grassroots level nurtured under the Livestock and Agricultural Marketing Project (LAMP), SDC's Green Gold Project and various U.S. Agency for International Development (USAID) projects (GI, RASP, MORE, etc); (d) status of logistics and infrastructure development; and (e) potential for export-oriented value chains.

Figure 3.1 Location and region of aimags selected for LCP implementation



28. In total 14 aimags, 248 soums (150 soums out of these 248 will be involved in project) of Mongolia including 1102400 population or 30.62% of all population and 1035400 km^2 land or 66.3% of total land of Mongolia will be benefited and impacted by the LCP. The **Table 3.2** shows general information of project involved aimags.

Table 3.2 General information of project involved aimags

#	Project aimags	Number of soums	Population	Size of territory (km²)	Density of population (pers/km²)	Name of aimag center
1	Arkhangai*	19*	94,900	55,300	1.7	Tsetserleg
2	Bayan-Ulgii	13	101,200	45,700	2.2	Ulgii
3	Bayankhongor	20	83,800	116,000	0.7	Bayankhongor
4	Bulgan*	16*	60,800	48,700	1.2	Bulgan
5	Gobi-Altai	18	60,900	141,400	0.4	Altai
6	Khentee*	17*	71,200	80,300	0.9	Chinggiskhan
7	Khovd	17	87,800	76,100	1.2	Khovd
8	Khuvsgul*	24*	121,400	100,600	1.2	Murun
9	Орхон	2	78,400	840	93.3	Erdenet
10	Sukhbaatar*	13*	56,600	82,300	0.7	Baruun-Urt
11	Tuv*	27*	88,900	74,000	1.2	Zuunmod
12	Uvurkhangai*	19*	113,200	62,900	1.8	Arvaikheer
13	Uvs*	19*	81,000	69,600	1.2	Ulaangom
14	Zavkhan	24	80,700	82,500	1.0	Uliastai
14	**TOTAL**	**248**	**1,180,800**	**1,036,240**		

Remark: *-aimags and soums proposed to be included in Project Component 1 and 2.

3.4. Potential project impacts and risk categorization

29. Initial screening indicates that LCP is likely to generate positive impacts on the biophysical environment, but negative impacts on biophysical environment in project areas may arise from sub-project investments in livelihood improvement interventions in fodder and feed production and from construction of infrastructure to increase agro-processing industry and capacity. Potential negative impacts may be arising mainly from restrictions (if at all) on access to natural resources included in proposed disease-free zones and compartment zones, and their implementation and improper use of chemical fertilizers and pesticides. Labor conditions, occupational health and safety concerns are relevant to implementation of improving agricultural product processing sub-projects activities involving extension and construction of factories and farms etc. The project only includes small infrastructure, such as upgrading of production paths, construction of livestock processing factories and storages on existing basis, and improving existing laboratories with no need for land acquisition, because of all such these labs, processing factories have already possessed land and there are mostly local and national Government owned land are available in rural areas; and environmental and social impacts can be avoided or minimized through the application of standard mitigation measures. Therefore, the project is categorized as a category B project.

4. LEGAL, POLICY FRAMEWORK AND REGULATORY REQUIREMENTS

4.1 World Bank's environmental and social policy

30. The project will comply with World Bank's Safeguard Policies which among others include: Natural Habitats (OP 4.04), Forests (OP 4.36), Pest Management (OP 4.09), Physical Cultural Resources (OP 4.11), Safety of Dams (OP 4.37), and IFC's Environmental, Health and Safety Guidelines-EHS guidelines on Agribusiness/Food Production etc. The OP4.01 and OP4.09 are triggered for the project, as such an EMP including a PMP have to be prepared in accordance with the Bank's safeguards polices. More information on these policies can be found in the respective sections of websites of World Bank.
31. The World Bank Group's Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). The EHS Guidelines are provided in a General Set in four major categories (Environmental, Occupational Health and Safety, Community Health and Safety, Construction and Decommissioning.) These general guidelines including EHS guideline for Annual Crop Production, EHS guideline for Dairy production, EHS guideline for Mammalian Livestock Production, EHS guideline for Meat Processing are applicable to all sub-projects of LCP and supplemented by relevant industry sector specific EHS guidelines.

4.2 Mongolian National, Local Environmental Laws, Regulations and Standards applicable to the project.

4.2.1 Specific Environmental Regulatory and Policy Framework

32. Mongolia has enacted a comprehensive policy and legal framework for environmental assessment and management. It has policies, legislation and strategies in place to manage the protected estate, to satisfy its international obligations, and to protect the quality of the environment for the health and well-being of its citizens. The hierarchy of policies and legislative provisions for environmental management in Mongolia comprises five layers ranging from the Constitution to international treaties, and to environment and resources protection laws[2].
33. The main policy documents are the National Environmental Action Plan of 1996, the State Environmental Policy of 1997, the National Plan of Action to Combat Desertification, the Biodiversity Conservation Action Plan, and the National Plan of Action for Protected Areas, all

[2] UNDP. 2008. *Institutional Structures for Environmental Management in Mongolia*. Ulaanbaatar and Wellington.

developed under the Ministry of Environment and Tourism (MET) auspices, as well as the Mongolian Action Program for the 21st Century. The National Environmental Action Plan was updated in 2000 and the National Action Plan for Climate Change was added in the same year. Several program documents (e.g. National Water Program, National Forestry Program, Program of Protection of Air, Environmental Education, Special Protected Areas, and Protection of Ozone Layer) were also completed at the turn of the decade. State policy on Environmental Impact Assessment was in place in 1998. In addition, other guidance documents with important environmental repercussions were developed under the auspices of other ministries and these include the Roads Master Plan, the Power Sector Master Plan, the Tourism Master Plan, and the Renewable Energy Master Plan. Other documents, such as the annual Human Development Reports have increasingly incorporated environmental aspects.

34. A fundamental principle of the Mongolian state environmental policy is that economic development must be in harmony with the extraction and utilization of natural resources and that air, water and soil pollution will be controlled. In April 1996, Mongolia's National Council for Sustainable Development was established to manage and organize activities related to sustainable development in the country. The country's strategy is designed for environmentally friendly, economically stable and socially wealthy development, which emphasizes people as the determining factor for long-term sustainable development.

4.2.2 Mongolian Policy, Legal and Administrative Framework

35. The Government of Mongolia undertook a major environmental law reform in 1990 and 2012 including the law of land, protected areas, water, forest, wildlife, and native flora resources. The legislation base is extensive as evidenced by the following table of key environmental legislation as shown in **Table 4.1** and their applicability to the project.

Table 4.1: Key environmental legislation

No	Name of the Law	Year adopted and amended	Associated regulations
1	Law on Environmental Protection	1995 revised in 2006, 2008, 2012	4
2	Law on Land	June, 2002	n.a
3	Law on Land Cadaster and Mapping	Dec, 1999	n.a
4	Law on Land Fees	Apr,1997	n.a
5	Law on Land Possession	June, 2002	n.a
6	Law on implementation of regulations related to Land Possession Law	June, 2002	n.a
7	Law on Geodesy and Cartography	Oct,1997	n.a
8	Law on Special Protected Areas	Nov, 1994	16
9	Law on Buffer Zones	Oct,1997	n.a
10	Law on Water	Apr, 2004	n.a
11	Law on Water and Mineral Water Resource Fee	May, 1995, 2012	21
12	Law on Forests	March,1995	38
13	Law on Fees for Timber and Fuel-wood Harvesting	May, 1995	n.a
14	Law on Prevention of Steppe and Forest Fires	May,1996	n.a
15	Law on Reinvestment of Natural Resource Use Fees for Conservation	Jan, 2000	n.a
16	Law on Natural Plants	Apr,1995	3
17	Law on Natural Plant Use Fees	May, 1995	n.a
18	Law on Protection of Plants	Mar,1996	n.a
19	Law on Fauna	2000	n.a
20	Law on Air	Mar.,1995	n.a.
21	Law on Protection for Toxic Chemicals	Apr.,1995	18
22	Law on Environmental Impact Assessment	1998, revised in 2002	n.a
23	Law on Solid Waste	Nov.2003	n.a

No	Name of the Law	Year adopted and amended	Associated regulations
24	Law on prohibiting export and transportation of Hazardous Waste	Nov.2000	n.a
25	Law on Soil Protection and Desertification Prevention	2012	n.a
26	Law on Organic Food	2016	n.a
27	Law on Food,	2012	n.a
28	Law on Ensuring the Safety of Food Products	2012	n.a

36. Other Mongolian orders, regulations and guidelines related to water and wastewater are listed in the **Table 4.2. Tables 4.3** and **4.4** list key Mongolian orders for Hazardous waste and Hazardous chemicals respectively.

Table 4.2: Key orders, regulations and guidelines related to water and wastewater

Name of Guideline, Order or Regulation	Year Adopted
Regulation of Fees On Water Pollution in 1992.	1992
Regulation of River And Water Source Protection Zone in 1992.	1992
Regulation of Lining Septic Tanks For Waste Water in 1995.	1995
Regulation for Registering Water Resource Pollution, Water Scarcity, Rehabilitation in 1996.	1996
Regulation on Water Resource Protection From Pollution in 1997.	1997
Regulation of Water Spring and Its Protection in 1998.	1998
Regulation of Establishing Wells and Water Points and Repair	2005

Table 4.3: Key Mongolian Orders, Regulations and Guidelines Related to Hazardous Waste

Name of Guideline, Order or Regulation	Year Adopted
Guideline on Reporting and Recording of Storage and Disposal of Hazardous Wastes By Order No: 127 of MNET in July 1, 2003.	2003
Classification and Specification and Hazardous Level Of Wastes by Order No: 324/318/336 of Minister for Nature, Environment, and Tourism, Minster for Health, and Minister for Education, Culture and Science in 2006.	2006
"Regulation on Types of Landfill And Disposal Facilities and Centralized Waste Disposal Sites, Relevant Requirements and Specifications, and Procedures to be Conducted By Economic Entities and Individuals to Bury and Destroy Hazardous Wastes" by Order No: 404 of Minister for Nature, Environment and Tourism in 2006.	2006
Regulation on Issuing of Passport for Hazardous Wastes By Government Resolution No: 268 in 2006.	2006
Payment Calculation Methodology for Hazardous Wastes by MNET in 2006.	2006
Regulation of National Reporting and Inventory of Hazardous Wastes by MNET in 2009.	2009

Table 4.4: Key Orders, Regulations and Guidelines Related to Hazardous and Toxic Chemicals

Name of Guideline, Order or Regulation	Year Adopted
List of Products Containing Toxic and Hazardous Chemicals (Renewed In 2008) by Joint Order No: 126/171 by MNET and MOH on July 1, 2003.	2003
Methodology of "Calculating Waste Norms" by MNET, in 2006.	2006
Regulation on "Trans-Boundary Movement, Trade, Transportation, Export, and Import of Toxic and Hazardous Chemicals" by Joint Order No; 92/90 of Minister for Nature, Environment, and Tourism and Minister for Foreign Affairs on December 29, 2008.	2008
Guideline on "Methodology and Technology to Dispose, Storage, Transportation, Collection of Chemical Wastes" (2009)	2009
Regulation on "Use, Transportation and Import of Toxic and Hazardous Chemicals" (renewed in 2009)	2009
Guideline on "Transportation, Storage, Use, and Disposal of Toxic and Hazardous Chemicals and b) Guideline on Developing Risk Assessment of Toxic And Hazardous Chemicals" by Joint Order No:	2009

28/40/29 of Minister for Health, Minister for Environment, Nature, and Tourism, and Chairman of National Emergency Management Agency on February 3, 2009.	
Guideline on "Classification of Hazardous and Toxic Chemicals Was Approved in 2009.	2009

37. Following Mongolian laws listed in **Table 4.5** are possible to be applicable to the LCP project.

Table 4.5: Key Mongolian laws applicable to the project

#	Laws	Date of approval and ammendment	Applicable articles and paragraphs to project's ESMF	
			For Environmental safeguard	For Social safeguard
1	Law on Land	Approved in 2002.06.07 Amended in: 2015.07.08, 2015.06.26, 2015.06.19, 2015.02.12 2013.12.26, 2012.05.17 2010.07.01, 2009.12.17, 2009.07.16, 2009.07.09, 2006.12.22, 2005.07.01, 2005.01.27, 2004.04.22, 2003.06.12, 2003.01.02	4.1.2, 4.1.4, 4.1.5, paragraph 11-16, 18.1.3, 19.2.2, 20.1.4, 20.2.2, 20.2.6, 22.1.2, 22.2.1, 22.2.3, 23.2.10, 23.2.16, 24.1, 27.5, 31.3, 31.4, 33.4, 34.2, 34.4, 34.11-Government's and citizens' obligation,	4.1.6-Public participation in land management
2	Law on land ownership to Mongolian citizens	Approved in 2002.06.27 Amended in: 2012.05.18, 2011.02.10 2008.05.22, 2005.07.07 2005.06.23	5.1.6.1, 5.1.6.2, 6, 9.1.4, 9.1.5, 10.1.4, 12.1.4, 14.1.5, 27.1.1, 27.1.5, 27.1.8, 27.2.5, 27.2.6, 27.2.7, 27.2.8, 28.1.3, 29.6, 29.7, 30.1, 32 and 38, 39.1	5.1.1
3	Law on land use payment	Approved in 1997.04.24 Amended in: 2012.05.22, 2009.12.24 2006.12.08, 2005.07.01	paragraph 4 and 6.	
4	Law on cropland	Approved in 2004.04.22 Amended in: 2009.05.14, 2006.06.29	16.7, 17.2.2, 17.2.5	
5	Law on Protected Areas	Approved in 1994.11.15 Amended in: 1997.10.23 2014.07.01, 2014.05.15, 2008.12.19, 2006.12.22, 2004.04.22, 2003.01.02 2002.07.10, 2002.06.07,	5.1-5.2, paragraph 7-24, 25.2, 26.3-26.6, paragraph 27, 28.3, 29.3, paragraph 30-32, 33.1, 36.2-36.3, paragraph 37, 39, 40.1.2, 43.2-43.3	
6	Law on Protected Area Bufferzone	Approved in 1997.10.23 Amended in: Ongoing	3.1, 4.1, 5.1, 7.4, 8.2, 9.1	
7	Law on Water	Approved in 2012.05.17 Amended in: 2012.08.17	8.1.1-8.1.2, 10.1.24, 12.1.1, 13.1.3, 15, 17.1.6-17.1.9, 17.1.12, 17.2, 18.1.3, 19.1.3, 22- 25, 29 and 30, 32.5, 33.1.13-33.1.14	
8	Law on repayment for polluting the water	Approved in 2012.05.17	4.1, paragraph 5-8, 10.1.1	
9	Law on Water resources	Approved in 2007.07.05 Amended in: 2014.07.01		
10	Law on Construction	Approved in 2008.02.05 Amended in: 2015.07.02, 2014.05.15, 2011.01.20, 2009.04.23, 2008.02.05	4.1.3, 5.1.7, 6.1.2, paragraph 9-11, 13.5, 14.5.1, 15.4, 15.5, paragraph 16, 18, 20, 22.2	paragraph 8, 14.11
11	Law on Air	Approved in: 2012.05.17 Amended in:2015.01.23, 2013.12.12	All	

#	Laws	Date of approval and ammendment	Applicable articles and paragraphs to project's ESMF	
			For Environmental safeguard	For Social safeguard
12	Law on repayment for air pollution	Approved in: 2010.06.24 Amended in: 2012.05.17	All	
13	General law on administration	Approved in: 2015.06.19	28.1.1-28.1.2, 48.2.2, 49.3.3, 49.3.5, 56.3, 62.2, 73, 75.1, 79, 81.2, 86.2, 92.1, 96.1, 97.1.1, 98.1.2-98.1.3, 100.1, 101.2, 104	13.2-13.4, 26.1, 74.1-74.2
14	Citizen's law	Approved in: 2002.01.10 Amended in:2015.07.02, 2014.12.05, 2014.05.15, 2013.01.10, 2011.12.15, 2011.10.06,2010.04.23, 2009.07.09, 2005.07.07	9-13, 21, 56, 92-95, 101-103, 106, 108, 116-118, 128.1, 134-140, 146.1, 150-151, 189, 228-230, 443-444, 497-514,	All
15	Law on Use of sett-lement water supp-ly and sewagge water system	Approved in: 2011.10.06	4.1.1, 5.1.5, 7.1.2, paragraph 11 and 16, 17.3-17.4, 17.8, paragraph 18.	6.1.4, 21.2
16	Law on transferen-cy of information and right to get information	Approved in: 2011.06.16	7.1.5, 7.1.9	All
17	Law on public audition	Approved in: 2015.07.08	4.2.2, 6.4	All
18	Law on Mongolian administrative units and their organization and management	Approved in: 2006.12.15 Amended in: 2015.07.08, 2015.01.23 2013.07.05, 2012.12.20, 2012.09.14, 2010.10.29 2009.04.16, 2009.03.12 2008.05.06	paragraph 4, 12.1.7, 20.1.6-20.1.7, 20.1.9, 20.1.12, 28.1.3-28.1.9, 28.1.15, 29.1.1б, 29.1.5в, 31.1.1	17.1.8,18.1.2з, 18.1.2к, 18.1.2л, 22.1.12, 22.1.16,28.1.228.1.13,29.1.330.1.6,30.1.13
19	Law on Solid Waste	Approved in: Nov.2003	Paragraph 3, 8, 9, 11, 12, 22 Articles 7.2, 9.2, 9.3, 9.4, 11.2, 22.1, 22.2	
20	Law on Hygiene	Approved in: 04 Feb, 2016	Article 3.1, Paragraph 4, 5, 8,11, articles 13.1.3, 14.1.1, 14.1.2, 20.1.3,	

39. Green Building Concept[3]: A green building rating system was developed by Mongolia Green Building Council (MGBC) in 2014 by order of the Ministry of Environment, Green Development and Tourism of Mongolia (MEGDT). The draft system consists of ten main and 26 sub-criteria, covering the four thematic areas of energy, water, environment, and innovation (as shown in **Table 4.7**).

Table 4.7 Criteria of the MGBC's Green building rating system

Energy	Implementation of the requirements of standard criteria of the A, B, C heating/thermal categories specified in BND 23-02-09 - Mongolian Building Standard
	Usage of energy efficient equipment
	Usage of interior and exterior lighting of the building

[3] Source of information Design and Technology Options - Analysis for a Green Public Kindergarten in Mongolia February 2016 Prepared by Mongolian Green Building Council and Building Technologies LLC for Global Green Growth Institute and Ministry of Environment.

	Usage of renewable energy sources
Water saving	Water saving equipment installation
	Reuse of grey water futures
	Reuse of rain water
Environmental aspects	Location: External planning, playground, car parking, bike parking and greenery should be designed according to BND Connectivity to the public transport
	Building: Usage of resource saving building material Usage of Green marked building material
	Interior air quality: Internal air temperature, humidity and noise level according to BND Usage of green labeled material in Interior design.
	Environmental management: Usage of environmental management program and environmental monitoring plan during construction. Construction company or client has ISO 14001 environmental management standard Maximum natural lighting in design.
Innovation	Usage of innovative technology, idea and material not directly related to green building rating system, but incorporated into GBRS

(Source: Mongolia Green Building Council, 2014, report)

4.2.3 National Requirement for Environmental Assessment

40. The EIA requirements of Mongolia are regulated by the Law on Environmental Impact Assessment (1998, amended in 2002). The terms of the law apply to all new projects, as well as rehabilitation and expansion of existing industrial, service or construction activities and projects that related to use land and natural resources. The purpose of this law is to protect the environment, prevent ecological imbalance, ensure minimal adverse impacts on the environment from the use of natural resources, and regulate relations that may arise in connection with the assessment of environmental impacts of and approval decisions on regional and sectorial policies, development programs and plans and projects. **Table 4.6** lists the classification of projects that require General EIA.

Table 4.6: Classification of projects obligatory to General Environmental Impact Assessment (According to the Law on EIA)

No	Project type	Executor	
		Central Government Authority for Nature and Environment	**The Governors offices of Provinces and the Capital city**
1.	Mining	Exploration of all kind of minerals	Exploration of common minerals to be used within local area
2.	Heavy industry	All types	-
3.	Light and Food industry	Big industries owned by Government	Local SMEs
4.	Agriculture	Water reservoir Irrigation system Plantation of fallow	Other industries and services
5.	Infrastructure	Energy production more than 1 MW capacity Electricity transmission line more than 35 kV voltage Heat distribution pipes Hydro station Railway Airport Road international and inter cities	Energy production up to 1 MW capacity Electricity transmission line up to 35 KV voltage Heat distribution pipes local Road and communication local

		Communication international and inter cities	
6.	Service	Hotel, resort, sanatorium and other service organizations with capacity more than 50 bed day	Hotel, resort, sanatorium and other service organizations with capacity up to 5O bed day
7.	Other projects: Town planning Defensive and civil protection Water supply system Water treatment plant Solid waste disposal	Water supply, water treatment and solid waste disposal in urban areas with more than 10000 inhabitants State owned facilities for defence and civil protection	Water supply, water treatment solid waste disposal in urban areas with up to 10000 inhabitants Local facilities for defence and civil protection
8.	Bio diversity	Fisheries (big size) Population, use and other activities relative to animal and plants,	Hunting and forestry, tribe Fishery for local market
9.	Chemicals, radioactive substances and hazardous wastes	Treatment, use, storage, transport and disposal of chemicals, radioactive substances and hazardous wastes	
10.	Activities conducted in protected areas	Activities to be conducted in boundaries of special protected areas	Activities to be conducted at locally protected areas.

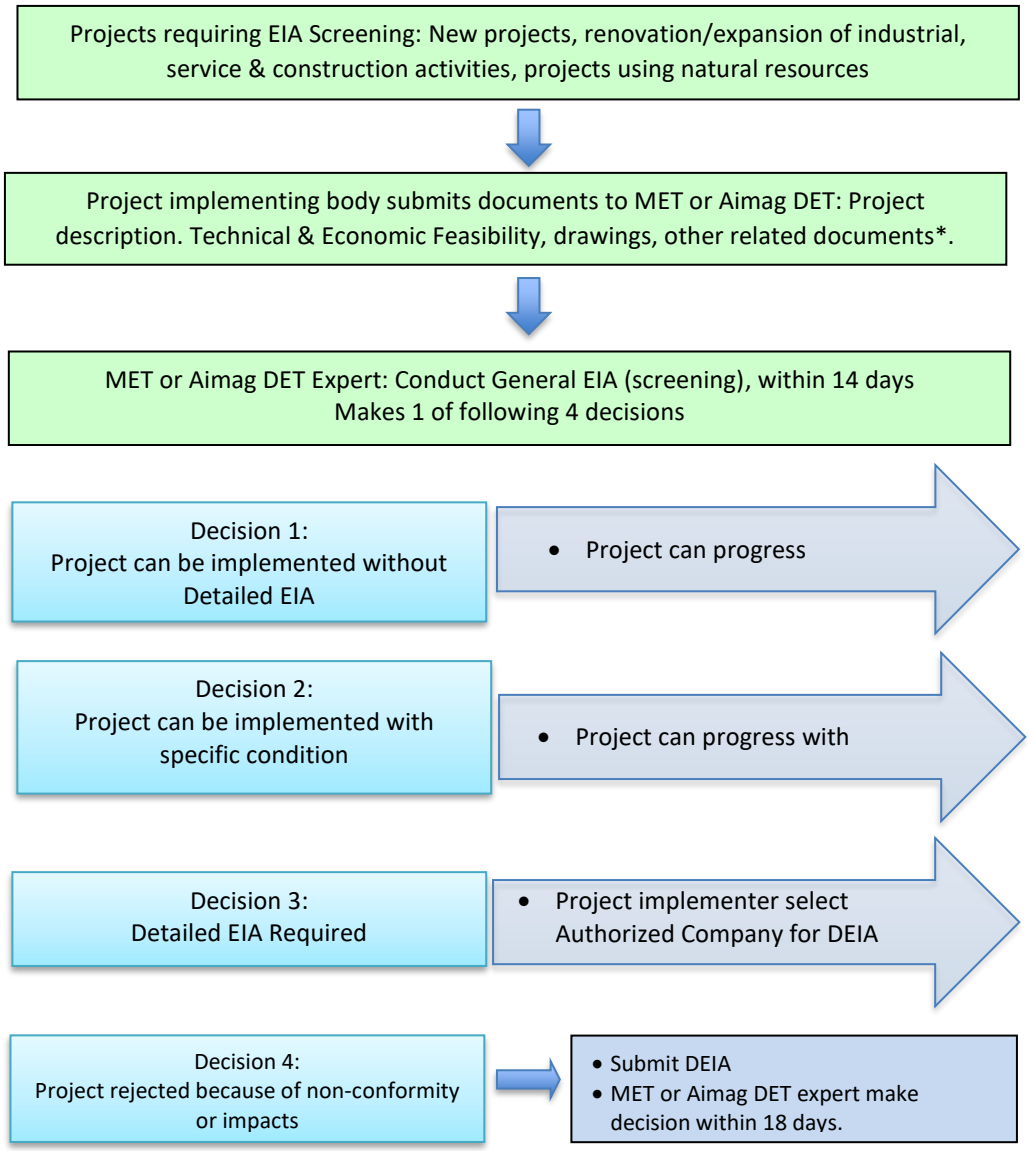
41. There are two types of EIAs defined in the Law on EIA:

(i) General EIA (screening) - to initiate a General EIA, the project implementer submits to MET (or Aimag government) a brief description of the project including feasibility study, technical details, drawings, and other information. The General EIA may lead to one of four conclusions: (i) no detailed EIA is necessary, (ii) the project may be completed pursuant to specific conditions, (iii) a Detailed EIA is necessary, or (iv) project cancellation. The General EIA is free and usually takes up to 12 days. **Figure 4.1** show the procedure of GEIA and DEIA

(ii) Detailed EIA – the scope is defined by the General EIA. The Detailed EIA report must be produced by a Mongolian company which is authorized by the MET by means of a special procedure. The developer of the Detailed EIA should submit it to the MET (or *Aimag* government). An expert of the organization who was involved in conducting General EIA should make a review of the Detailed EIA within 18 days and present it to MET (or *Aimag* government). Based on the conclusion of the expert, the MET (or *Aimag* government) takes a decision about approval or disapproval of the project.

(iii) The Detailed EIA must contain the following chapters: (i) Environmental baseline data; (ii) Project alternatives; (iii) Recommendations for minimizing, mitigation and elimination of impacts; (iv) Analysis of extent and distribution of adverse impacts and their consequences; (v) Risk assessment; (vi) Environmental Protection Plan; (vii) Environmental Monitoring Program; and (viii) Opinions of residents on whether the project should be implemented.

Figure 4.1. GEIA and DEIA procedure according to Mongolian Law on EIA.



Source: Adapted from Vol. 1 (2001) Compendium of Laws: A Mongolian Citizens Reference Book

42. The type and size of the planned activities define responsibility for the Ministry of Environment and Tourism (MET) or Aimag (provincial) government in making EIA.
43. The WB supported projects need to comply with both domestic and WB requirements. The WB requires that site specific EMPs need to be prepared for subprojects, but not just for the preparation of general EIA or detailed EIA following the domestic requirement since they can't meet WB requirements due to the gaps between WB and Mongolian requirements. This issue needs to be clarified later in the screening and preparation of safeguard documents for the subprojects identified during the LCP implementation.

4.2.4. National Structure for Environmental Monitoring

44. The establishment of a baseline for environmental monitoring is to determine trends in the quality of ambient air, water, ambient noise and soil and how that quality is affected by the release of contaminants, other anthropogenic activities, and/or by waste treatment operations (impact monitoring). Environment monitoring needs to be carried out to estimate nutrient or pollutant fluxes discharged in atmosphere or ground waters or lakes or to the land across project and nearby areas. Monitoring is done to determine the quality of the ambient Environment before start of any kind of project related activities, as it provides a means of comparison with impact monitoring. It will be

also used simply to check whether any unexpected change is occurring in otherwise pristine conditions.

45. The National Agency for Meteorology, Hydrology and Environmental Monitoring (NAMHEM) is responsible for environmental monitoring of water, air, acid deposition, soil, environmental radiation, dust-deposition and Sulphur gases to control the environmental quality. The laboratories in main cities make permanent measurements on air, water, soil quality and radiation level, meanwhile, control waste sources of pollution from such power plants and vehicles; carries necessary monitoring activities on environmental assessment; control industry wastes in cooperation with other environmental controlling organizations. **Table 4.7** shows the types and responsibility of NAMHEM and its *Aimag* level Departments of Hydrology, Meteorology and Environmental Monitoring for environmental monitoring.

Table 4.7: Responsibilities of NAMHEM for Environmental Monitoring in Mongolia

Monitoring types	Site
Air quality in urban area /SO2, NOx, CO, O3, HC, PM10, PM2.5/	35 points
Acid rain /NH4, SO2, HCI, HNO3, NH3/	2 points
Greenhouse gas monitoring	1 laboratory
Sand /yellow/ dust storm observation /To define dust PM10, PM 2.5 dispersion in horizontal and vertical direction/	9 stations
Water quality	
Water quality /91 rivers, 16 lakes pH, EC, O2, etc./	188 points
Gray water monitoring /5 in Ulaanbaatar city and 28 in the countryside/	33 water cleaning facility
Soil quality in urban areas	340 points
Environmental radiation monitoring	35 points

Source: Introduction on National Agency for Meteorology and Environmental Monitoring, MET, 2016

4.3. Mongolian Multilateral Environmental Agreements (MEAs)

46. The health of Mongolia's natural ecosystems and populations of wild species is of both national and global importance. The country forms an important part of the global ecosystem in the ecological transition zone in Central Asia, where the great Siberian taiga, the Central Asian steppe, the high Altai Mountains, and the Gobi Desert converge. In recognition of its global responsibilities, Mongolia has acceded to a number of international environmental conventions and the key ones are tabulated below under four clusters in **Table 4.8.**

47. Each of these conventions places obligations on signatory governments ranging from the provision of a legislative basis for implementation, to adherence to the requirements and conditions of each convention, to monitoring implementation performance on a regular basis, to reporting on a regular basis and to the conference of parties.

Table 4.8 International Environmental Conventions Signed by Mongolia

No	Convention	Year of Accession
A	Nature conservation	
1	Convention on the Protection of Wetlands of International Importance-Ramsar Convention on Wetlands	1998
2	CITES (Convention on International Trade in Endangered Species of Fauna and Flora)	1996
3	CBD (Convention on Biological Diversity)	1993
B	Hazardous material	
1	Stockholm Convention on Persistent Organic Pollutants (POPs)	2004
2	Basel Convention on the Control of Trans-boundary Movement of Hazardous Waste and Their Disposal	1997

3	Rotterdam Convention on Prior Informed Consent (PIC) for certain Hazardous Chemicals and Pesticides in International Trade	2000
C	Atmospheric emissions	
1	UNFCCC (United Nations Framework Convention on Climate Change)	1994
2	Kyoto Protocol	1999
3	UNCCD (United Nations Convention to Combat Desertification)	1996
4	Montreal Protocol (on Ozone Depleting Substances)	1996
5	Vienna Convention for the Protection of the Ozone Layer	1996
D	World Heritage	
1	World Heritage Convention	1990

4.4. Gap Analysis between International and National requirements for ESMF

48. There are some gaps identified between international and national environmental and social requirements and key findings of analysis of gaps between international and national requirements are presented in **Table 4.9** highlighting gaps identified and measures through which the ESMF can close those gaps.

Table 4.9: Environmental and Social Policy gap analysis and gap-filling measures

Topic	Gaps identified (reference to international standard)	Gap-filling measures according to International standards
Scope of environmental assessment	Mongolian EIA law covers human health & environment only (WB OP 4.01, 1.1; WB Op. 4.11, 4.1)	EIA shall include natural environment, human health & safety; social impacts (involuntary resettlement, indigenous peoples, and physical cultural resources); and trans boundary and global environmental aspects.
	Only certain types of activity in protected area buffer zones are subject to EIA (WB OP 4.01, 1.2)	All sub-projects shall be appraised.
Public participation in E&SIA	EIA Law does not require public participation in general EIAs (WB OP 4.01, 1.3).	ESMF shall ensure key stakeholders are meaningfully consulted and their views taken into account before submission of general EIAs.
	Regulations on public participation in detailed EIAs give only general guidance on public participation	ESMF shall ensure key stakeholders are meaningfully consulted and their views taken into account.
Public notification and disclosure	EIA Law provisions on public notification and disclosure are incomplete (WB OP 4.01, 1.4)	ESMF and sub-projects EMP shall specify procedures for public notification and disclosure of project plans and E&SIAs in line with international standards.
Reporting	EIA Law only requires reporting on EMPs pursuant to detailed EIAs (WB OP 4.01, 1.5)	Status of all EMPs and monitoring results shall be reported and disclosed.
Capacity for E&S management	National law has no capacity requirements (WB 4.01 p.1.6)	ESMF and sub-projects EMP shall include capacity building activities
Land conversion	National law has no provisions to mitigate conversion or degradation of natural habitats outside designated areas (e.g. protected areas, buffer zones, conservation forests) (WB Op. 4.04, 2.1)	All sub-projects with potential to convert or degrade natural habitats shall have mitigation measures designed, implemented and monitored.

Topic	Gaps identified (reference to international standard)	Gap-filling measures according to International standards
Involuntary Resettlement	National law has no provisions to avoid or minimize resettlement (WB Op. 4.12 3.1, VGGT)	WB will not support any sub-project activities that may result in physical and economic displacement impact.
Indigenous peoples	National law does not formally define indigenous peoples or vulnerable ethnic minorities, and does not require preparation of indigenous peoples plans. (WB OP 4.10)	The impact on IP and associated mitigation measures have been incorporated in the ESMF. The project will undertake consultation and mobilization of ethnic minority groups to ensure their participation in project activities using culturally appropriate means.
OHS	Soil erosion, air quality, solid waste disposal, OHS, and community health and safety measures are regulated at a general level.	Specific measures shall be contained in the template for construction ESMPs
	National law does not require that businesses monitor or support OHS compliance by sub-contractors	PS2 requirements in paras 24-29 shall be transposed into a template for construction ESMPs

49. The Project will not support any sub-project activities that potentially trigger WB OP 4.12. All sub-project proposals that may result in physical and economic displacement impact, on other's land and property shall be disqualified at the screening stage.
50. The major applicable Mongolian national legislation on environmental safeguards include Law on Environmental Protection, Law on Environmental Impact Assessment ('EIA Law') and associated Regulation on Environmental Impact Assessment, Regulation on Ensuring Public Participation in EIA, Guideline for Environmental Impact Assessment, Regulation on Strategic and Cumulative EIA, Guideline for Conducting Strategic and Cumulative Impact Assessment, Regulation on Environmental Management Plan Preparation, Verification and Reporting and Regulation on Monitoring the designated Accounts of Environmental Restoration Bonds. Other relevant laws include the Forest Law and Law on Water Resources. A draft law that proposes to integrate legislation on protected areas and their buffer zones is under discussion by a working group set up by the responsible ministry. If new legislation is passed during LCP implementation period, the ESMF should be reviewed, and (if necessary) revised.
51. The scope of environmental assessment in the EIA law is limited to human health and environmental impacts, but social impacts are considered in Regulations for Public Participation in EIAs. For general EIAs, it is required local administrative agencies make information on the general EIA results publicly accessible, and decisions must be made public on the environment agency's website. For detailed EIAs, public participation is required in identifying, estimating and evaluating impacts, and public consultation on the detailed results (not a non-technical summary) are required at *bagh* level over a 15-day period and/or through *bagh* or *soum* citizen representative khural meetings. Public participation is required in elaboration of Environmental Management Plans (EMPs) pursuant to detailed EIAs, and affected persons shall be informed annually on implementation of these EMPs. Given that the requirements for public participation set out in formal regulation is general, the ESMF shall provide further guidance on stakeholder participation to ensure information disclosure, such as non-technical summaries, meaningful consultation and participation in decision-making as required in international standards.
52. **Laws related to potential project social impacts:** Mongolia has no national law specific to land acquisition and resettlement. The Mongolian Land Law defines ownership and possession rights to specific categories of land, and allows *soum* governors to sign land use contracts with herder groups. The vast majority of herders using pasture in protected areas or buffer zones have no formally titled land rights, although some may have contracts for limited-term use rights for winter-spring camps. Customary land use is recognized as a consideration in land management planning, but customary rights have no formal status in national law. Mongolia has no current law applicable

to expropriation of land under customary use by the state, and the project is most likely to affect assets not covered by current law (i.e. customary land use). A draft Law on Land Acquisition for Unavoidable Public Need has been prepared in line with World Bank standards, but not yet been passed. If passed into law, the ESMF may need to be revised. At the present stage, the project should follow World Bank standards and the UN Basic Principles in defining people eligible for compensation for restricted access to natural resources or physical displacement, including persons with no formal title as potentially eligible persons. National law on compensation for withdrawal of land rights currently applies only to those with ownership or possession rights, and specifies compensation for lost assets only. The project shall follow World Bank standards and the UN Basic Principles to include persons with limited-term use rights or no titled rights as potentially eligible for compensation and livelihood support measures, and shall compensate for the full costs of physical displacement and implement measures to ensure that livelihoods are maintained or restored to at least the level prior to implementation of the restriction or displacement activity. According to the UN Basic Principles the project should ensure free legal advice for people affected by the displacement. World Bank requirements for resettlement planning, monitoring of social impacts and public disclosure shall be followed, as these are not required in current national law. In line with the VGGT, procedures shall be put in place to ensure gender-inclusive resettlement processes.

53. **Laws relating to physical cultural resources:** Relevant laws include the Law on Protected Area and the Law on Cultural Heritage. The Law on Protected Area specifies permitted and prohibited activities in different zones in national protected areas of different status and the roles and responsibilities of different levels of government in granting permissions for land use. The Law on Cultural Heritage has initiated a process of registration of tangible culture and specifies roles and responsibilities for the protection of tangible culture. The project should support stakeholders in the identification, registration and protection of physical cultural resources.
54. **Laws relating to ethnic minorities:** Mongolia's constitution states that "no person shall be discriminated against on the basis of ethnic origin, language, race, age, sex, social origin and status, property, occupation and position, religion, opinion and education". However, there is no other specific legislation on indigenous peoples because the majority Khalkh population together with ethnic minorities are considered indigenous. National education and language policies have generally tended to promote Mongolian language, and Khalkh Mongolian is the official language of government business. The project shall ensure inclusion of indigenous people and ethnic minoroties in project activities through free and informed consultations during implementation through provision of culturally appropriate project benefits by using their languages in the provision of services and measuring their inclusion to the project benefits/services including tracking their usage of animal health services, local disclosures, feedback loops, etc. informing and guiding the implementation of the project.
55. **Labor conditions & OHS:** Mongolian Labor Law (1999) and Law on Occupational Safety and Hygiene (2015) implement the ILO core labor standards, and establish rights and responsibilities for ensuring health and safety in the workplace. However, because national laws apply to all employers, there is no legal obligation to ensure that labor and OHS requirements are met by sub-contractors. Specific measures to mitigate OHS related risks are not set out in national law, although some are set out in national standards and regulations. The ESMF shall therefore contain provisions to ensure that sub-contractors are subject to the same labor and OHS requirements, and to ensure that appropriate mitigation options are designed in sub-project ESMPs.

5. ENVIRONMENTAL AND SOCIAL BASELINES

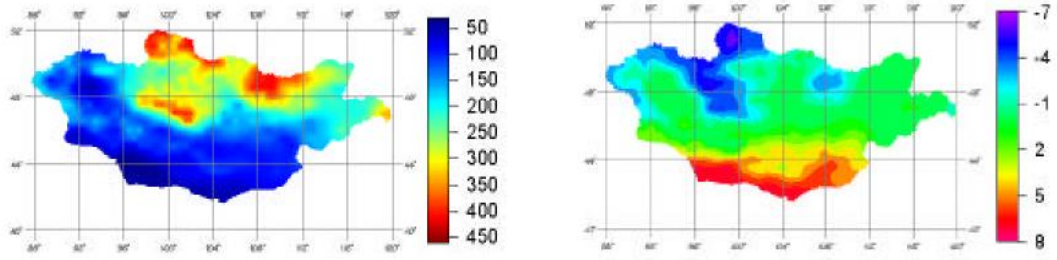
5.1 Environmental Baselines

56. Mongolia is a landlocked country in Northern Asia with a surface area of 1.56 million square kilometres and about three million inhabitants, of whom 2.2 million live in urban areas.[4] Population density in rural areas thus averages 0.5 inhabitants per square kilometre, which reflects also the dominance of mobile pastoralism as the main rural livelihood throughout the country. Administratively, Mongolia is divided into Ulaanbaatar and 21 aimags (provinces). Aimags are further divided into *soums* (counties) and *baghs* (villages).

57. **The topography** of Mongolia consists mainly of a plateau with an elevation ranging from 914 to 1524 m broken by mountain ranges in the north and west. The country has an average elevation of 1,580 metres. The Altai Mountains stretch across the western and the southwestern regions of the country, and Khuiten Peak in far western Mongolia is the highest point (4,375 metres). The east and the south are characterized by plains and depressions. The landscape includes one of Asia's largest freshwater lakes (Lake Khuvsgul), many salt lakes, marshes, sand dunes, rolling grasslands, alpine forests, and permanent mountain glaciers. Northern and western Mongolia are seismically active zones, with frequent earthquakes and many hot springs and extinct volcanoes.

58. **Climate:**[5] Mongolia has a severe continental climate due to its long distance from oceans, the high mountains in the north and west, and high average elevation above sea level. Average annual temperature is below 2°C above 45° latitude, and below -4°C in the northwest of the country, while in the south Gobi, the average temperature is higher than 6°C (Figure 6.1). Average winter temperatures range between -8°C and -32°C, while summer temperature range between 6°C and 24°C. Annual total precipitation ranges between 50 mm in the southern Gobi to 450 mm in the north. Annual mean precipitation is 300-400 mm in the northern and western areas, 250-300 mm in the Altai and central-northern forest steppe zones, and 150-200 mm in the eastern steppe zone. Potential evapotranspiration is above 500 mm across most of the country.

Figure 5.1: Average annual temperature and precipitation, Mongolia



Av. annual precipitation, mm

Av. annual temperature, ºC

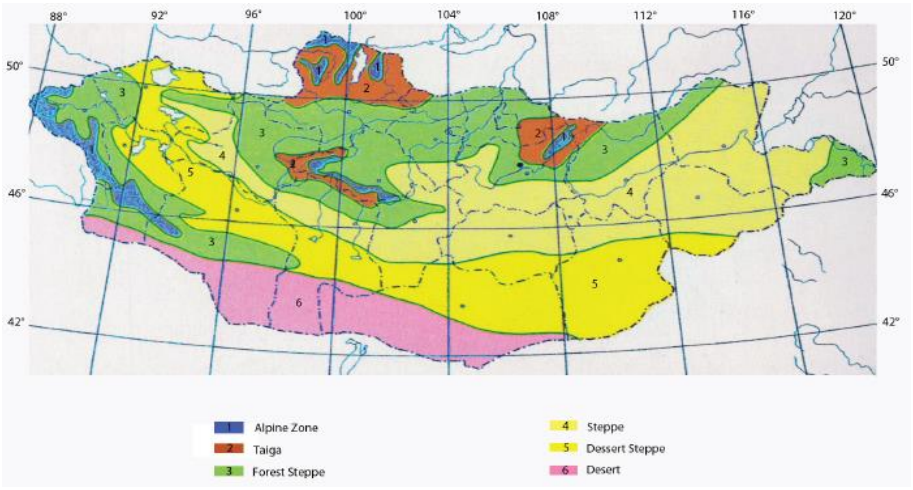
Source: Mongolia's Initial National Communication to UNFCCC, 2001

59. Vegetation: Mongolia's vegetation can be classified into five ecological zones that generally follow a north to south gradient: the high mountain, forest steppe, steppe, desert steppe, and desert zones **(Figure 5.2)**. Forests cover 9.2% of the land area, mostly in the northern taiga and forest steppe zones. The forest steppe and steppe zones comprise over half of the land area (30% and 20% respectively) and have the highest concentration of people and livestock, mainly due to the relatively high biomass productivity (600–1,800 kg/ha). The desert steppe and desert zones occupy approximately 37% of land area with lower productivity (30–400 kg/ha).

Figure 5.2: Ecological zones of Mongolia

[4] World Bank databank

[5] Dagvadorj et al. (2010) Mongolia: assessment report on climate change 2009. Ministry of Nature, Environment and Tourism.



Source: Green Gold and Mongolia Society for Range Management (2009) Livelihood study of herders in Mongolia. SDC, Mongolia

60. Ecosystem and biodiversity: Located between the Russian Federation and the People's Republic of China, in the heart of Central Asia, Mongolia spans across the Siberian taiga, Eurasian steppes and the Gobi deserts of Central Asia, and is situated in the watersheds of the Arctic, Pacific, and Central Asian Internal Drainage basins. Mongolia is of global significance because of its location at the convergence of the Siberian taiga and the Central Asian steppe and deserts that form a rich diversity due to the transitional ecosystems that occur nowhere else and unique assemblage of species. Therefore, it hosts a range of globally important biodiversity, including parts of two WWF Global 35 priority eco-regions (the Amur-Heilong in Eastern Mongolia and the Altai-Sayan in Western Mongolia), as well as 2 UNESCO natural World Heritage Sites, 11 Ramsar sites, 70 Important Bird Areas (IBA) and habitat of globally endangered mammals like wild horse/Takhi (*Equus ferus przewalskii*), Wild Bactrian camel (*Camelus ferus*), Asiatic wild ass (*Equus hemionus*), Gobi bear/Mazaalai (*Ursus arctos gobiensis*), Saiga antelope (*Saiga tatarica mongolica*) and others.

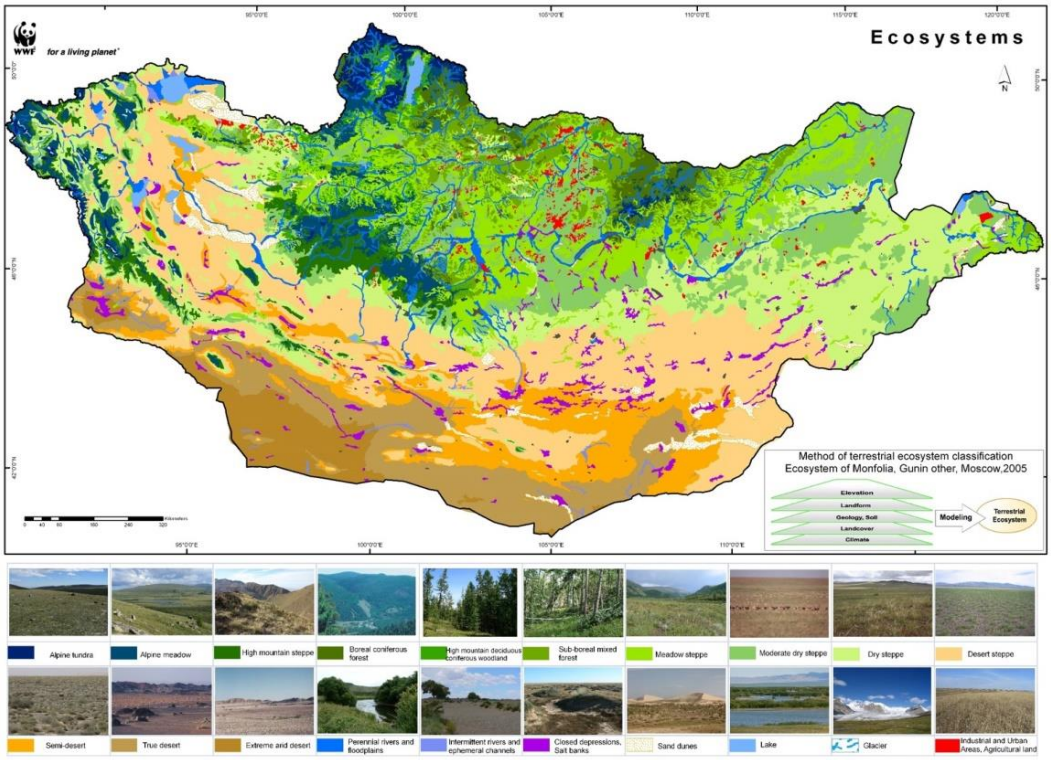
61. Biodiversity was an integral feature of Mongolia's intact ecosystems until the middle of the 20th century. Pasture-based livestock husbandry was a subsistence economic activity functioning in a semi-natural ecosystem integrated with the seasonal climate regime and distinct landscape patterns. In fact, it was a reference point or basic line for biodiversity, which could be sustained across this geographic domain in accordance with the associated climate variability (Batjargal. Z and Shiirevdamba. Ts 2016).

62. Mongolia contains 16 ecosystem types within its borders, which have been consolidated into four eco-regions, namely the Daurian steppe (28.2% of total area), Khangai (16.4% of total area), Central Asian Gobi Desert (16.4% of total area), and the Altai-Sayan (23.1% of total area) (Figure 6.3), in order to increase integration between national conservation and development policies and plans (Chimed-Ochir B. 2010). These eco-regions with their unique assemblage of ecosystems comprise a variety of fauna and flora species, which consist of 138 species of mammal, 79 species of fish including subspecies (Mendsaikhan B. 2017), 22 species of reptile, 6 species of amphibian, 476 species of bird, over 13 thousand species of insect and 516 species of mollusk, 3127 species of vascular plants, 1574 species of algae, 495 species of moss, 838 species of fungus (Government of Mongolia, 2015). Totally 110 species of fauna and 192 species of flora were deemed to be nationally endangered and registered into the Mongolian Red Book as either critically endangered.

63. However, due to climate change and negative human activities, 72.3 percent of the total territory has deteriorated; soil nutrients have been lost; desertification has become an increasing threat; over 70 percent of pastureland has been overgrazed; plant growing rates and compositions have been reduced; hundreds of rivers, streams, natural springs, lakes, and ponds have dried up; the forest resource has decreased by 2 million ha; and about 300 species of fauna and flora are threatened with extinction. Therefore, the need to upgrade conservation management to

international standards has become a priority. Additionally, the human right to live in healthy and safe environments must be ensured; untouched environmental conditions and ecological balance must be preserved for future generations; and sustainable development through maintaining balance between social and economic progress and environment must be pursued.

Figure 5.3: Ecosystem types of Mongolia



Source: WWF program office in Mongolia, 2010

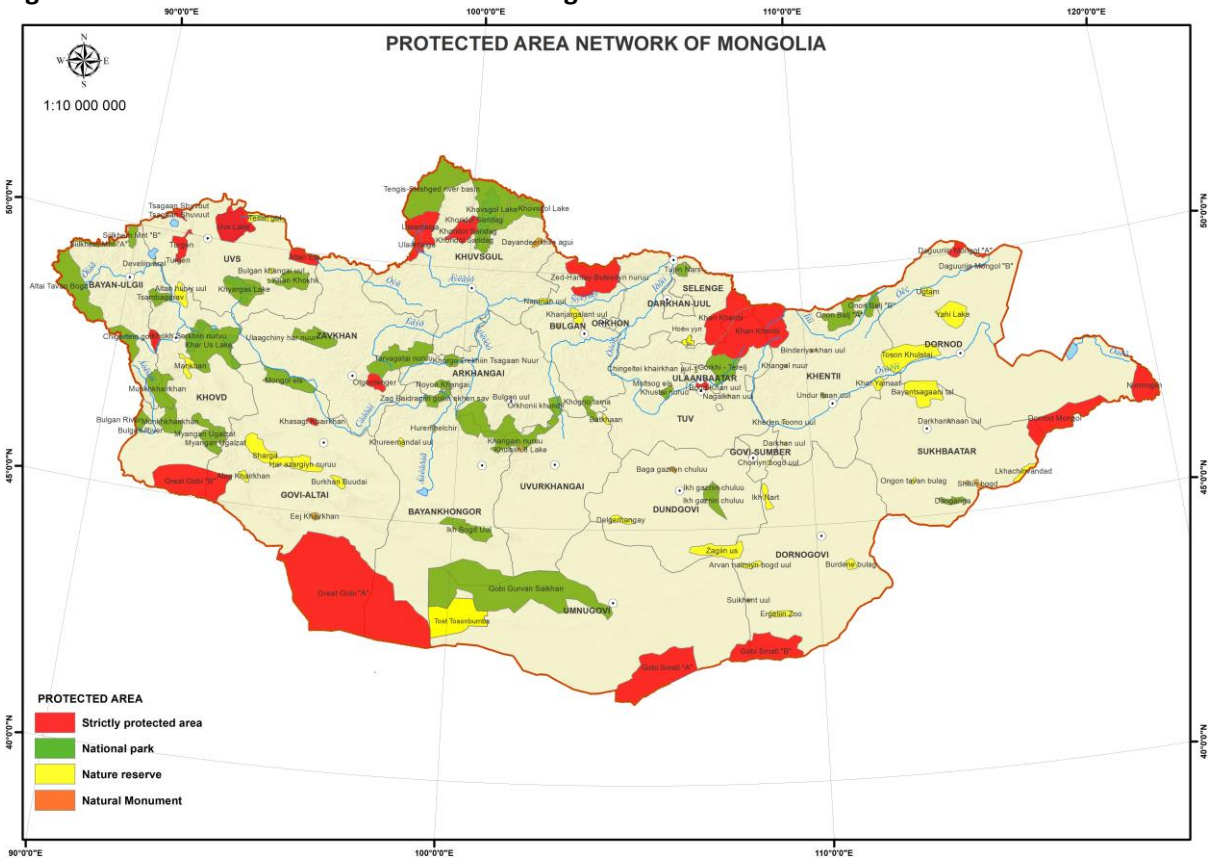
64. Ecologically sensitive areas: Mongolia's Protected Area (PA) network and ecologically important areas are included in ecologically sensitive areas. The Protected Area network consists of 99 protected areas covering 17.4% (27.2 million ha) of the country's territory. The number of protected areas has increased since the Parliament adopted the National Programme on Protected Areas (1998) that set the goal of establishing a protected area system covering 30% of the national territory. In 2015, the protected areas included 20 Strictly Protected Areas (12.4 million ha), 32 National Parks (11.7 million ha), 34 Nature Reserves (2.9 million ha), 13 National Cultural and Historical Monuments (0.13 million ha).
65. In addition, there are 911 locally protected areas covering 16.3 million ha and 10.4% of the total territory of Mongolia. The total size of the state and local protected areas has reached 44.3 million ha,[6] which is 28.3% of the total territory (Government of Mongolia 2015). However, capacities and resources for protected area management have not kept pace with the expansion of PAs, and most protected areas suffer from inadequate resources to conserve important species and habitats they are supposed to protect.[7]
66. In accordance with the Law on Protected Areas, all Specially Protected Areas and National Parks may have a Buffer Zone (BZ). A separate Law on Buffer Zones regulates the establishment and management of Buffer Zones. It aims to reduce, mitigate and prevent the actual and/or potential adverse impacts experienced in their respective PA by way of (i) increasing local communities' participation in the conservation of protected sites, by (ii) providing livelihood means to local

[6] https://www.cbd.int/doc/world/mn/mn-nbsap-v2-en.pdf;
http://www.eic.mn/spalocal/localspa_stat_en.php?ltype=1

[7] http://www.mn.undp.org/content/mongolia/en/home/operations/projects/environment_and_energy/SPAN.html

communities and (iii) by ensuring the appropriate use of natural resources. Currently the Government actively advocates the establishment of Buffer Zones around SPAs and NPs. If properly managed the LPAs will in principal offer a good protection and they will also provide for an expansion zone of the Protected Areas. (Please refer to the lists of all protected areas in Mongolia in the **Table-5.1**).

Figure 5.4 Location of Protected Areas of Mongolia.



Source: Institute of Geo-ecology and geography, 2019.

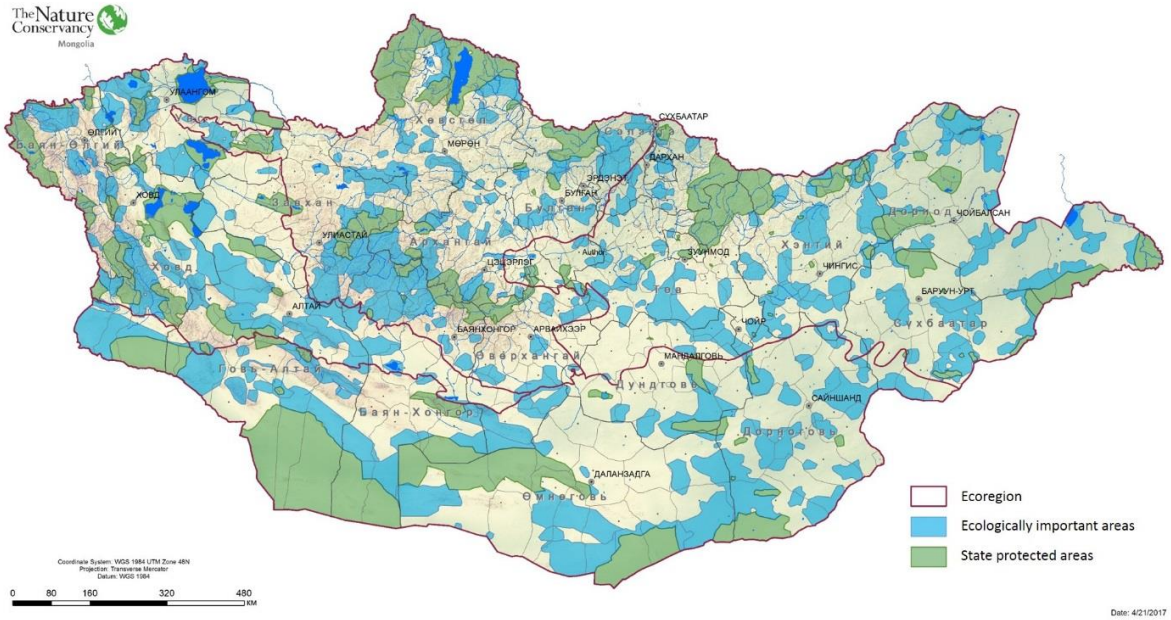
Table 5.1 Protected Areas of Mongolia

№	Names of PA	Name of Provinces which PA locates	Classification	Size (ha)
1	Great Gobi /B/	Baynkhongor	SPA	927111.8222
2	Alag Khairkhan	Gobi-Altai	NP	36723.16831
3	Great Gobi /A/	Gobi-Altai, Baynkhongor	SPA	4633299.775
4	Eej Khairkhan	Gobi-Altai	NM	23095.9647
5	Khukh Serkhi Nuruu	Bayan-Ulgii, Khovd	SPA	75749.75203
6	ChiGertein river valley	Bayan-Ulgii	NP	167190.6466
7	Bogdkhan mountain	Tuv	SPA	41322.27316
8	Khasagt Khairkhan	Gobi-Altai	SPA	26760.57436
9	Mongol Els	Gobi-Altai	NP	271313.4184
10	Numrug	Dornod	SPA	320982.1815
11	Dornod Mongol	Dornod	SPA	589905.6506
12	Mongol Daguur /A/		SPA	92880.45414
13	Mongol Daguur /B/		SPA	15273.1854
14	Yahi Lake		NR	251217.9575
15	Ugtam		NR	46022.85092
16	Toson Khulstai	Dornod, Khentii	NR	458509.7875

17	Uvs lake	Uvs	SPA	441223.2166
18	Tsagaan Shuwuut		SPA	25537.7004
19	Turgen mountain		SPA	130473.9754
20	Tes river		NR	
21	Khan Khukhii	Uvs	NP	221598.2789
22	Hyargas lake		NP	341301.7869
23	Altan els		SPA	150244.2014
24	OtgontenGer mountain	Zankhan	SPA	90498.66441
25	Ulaagchin Khar lake	Zankhan	NP	259403.3884
26	Tsambagarav	Bayan-Ulgii	NP	113749.2134
27	Altai Tavan Bogd		NP	656106.3865
28	Siilhem Nuruu /A/		NP	69935.4433
29	Siilhem Nuruu /B/		NP	77942.5287
30	Devel aral		NR	10618.72285
31	Khangain nuruu	Arkhangai and Baynkhongor	NP	906604.5447
32	Khorgo-Terkh Tsagaan lake	Arkhangai	NP	76893.00337
33	Noyon Khangai		NP	56657.98638
34	Onon-Balj /A/	Khentii	NP	294079.7835
35	Onon-Balj /B/		NP	106386.9926
36	Khugnu Tarna	Bulgan and Uvurkhangai	NP	84143.05686
37	Dariganga	Sukhbaatar	NP	64547.60536
38	Shiliin Bogd		NM	18136.91995
39	Khorgiin khundii		NM	6104.313042
40	Khustain nuruu	Tuv	NP	48400.56794
41	Gobi Gurvan Saikhan	Umnugobi	NP	2697170.845
42	Khan Khentii	Tuv, Selenge and Khentii	SPA	1748103.891
43	Undurkhaan uul	Khentii	NP	8820.0
44	Binderya uul		NM	5736.92
45	Khangal nuur		NM	3913.0
46	Gorhi-Terelj	Tuv	NP	291838.556
47	Nagalkhaan mountain		NR	1860.721221
48	Khar us lake	Khovd	NP	852997.2452
49	Mankhan		NR	82807.37429
50	Tarvagatain nuruu	Zankhan	NP	547629.8987
51	Little Gobi /A/	Umnugobi	SPA	1147812.066
52	Little Gobi /B/	Dornogobi and Umnugobi	SPA	682617.3514
53	Ikh bogd mountain	Baynkhongor	NP	262855.8119
54	Zag Baidgar river		NP	116308.5428
55	Tujiin nars	Selenge	NP	70804.71976
56	Orkhon river valley	Arkhangai and Uvurkhangai	NP	92717.98585
57	Khuisiin naiman lake	Arkhangai	NM	11149.06413
58	Ikh gazar chuluu	Dundgobi	NR	175906.1387
59	Khuvsgul	Khuvsgul	NP	1175602.174
60	Dayan deerkhi cave		NM	31277.20524
61	Ulaan taiga	Khuvsgul	SPA	431694.4634
62	Khoridol Saridag		SPA	226672.0417
63	Tengis-Shishged		NP	875711.2729
64	Zed-Khantai-Buteeliin-nuruu	Bulgan	SPA	604265.563
65	Myangan Ugalzat	Khovd	NP	303775.0681
66	Bulgan river- Ikh Ongog	Khovd	NP	92743.66388
67	Munkhkhairkhan mountain		NP	506096.7014
68	Ikh Nart	Dornogobi	NR	66752.0
69	Khar Ymaat	Dornod	NR	50691.0

67. Additionally, some research has been conducted with support of The Nature Conservancy Mongolia in 2017 to further expand the PA network and identify areas that need to be protected, and as a result, 216 ecological and biodiversity important areas **(Figure 5.5)** have been identified at country level. However, important areas for ecosystems and biodiversity are not always protected due to the issues of mining, infrastructure and land use being put at the forefront. Following figure can show the positions of ecologically important areas in Mongolia.

Figure 5.5. Ecologically important areas of Mongolia



Source: by TNC Mongolia, 2017

68. **Physical Cultural resources/ Cultural Relics Sites:** Mongolia is rich in physical cultural resources. The list of important heritage, cultural and religious sites of Mongolia and its provinces revised in 1994, 1998 and 2008. In this list, total of 460 objects were registered and out of them 175 have to be under State protection and 285 have to be under provincial protection.

Table 5.2 Number of heritage, cultural and religious sites in Mongolia

#	Name of Provinces	Number of heritage, cultural and religious sites	
		Under State protection	Under Provincial protection
1	Arkhangai*	14	24
2	Bayn-Ulgii*	16	13
3	Baynkhongor*	10	10
4	Bulgan*	10	25
5	Gobi-Altai*	8	29
6	Gobisumber	0	2
7	Darkhan Uul	3	2
8	Dornogobi	5	8
9	Dornod	3	8
10	Dundgobi	7	16
11	Zavkhan*	6	5
12	Orkhon*	0	1
13	Uvurkhangai*	9	26
14	Umnugobi	8	15
15	Sukhbaatar*	8	4
16	Selenge	2	5

#	Name of Provinces	Number of heritage, cultural and religious sites	
		Under State protection	Under Provincial protection
17	Tuv*	15	6
18	Uvs*	5	8
19	Khovd	9	8
20	Khuvsgul*	9	26
21	Khentee*	13	23
22	Ulaanbaatar	15	11
	TOTAL	175	285

Source: "Guideline for registration of cultural heritages" by MECSS and Centre for Cultural Heritages of Mongolia, 2014.
*- Project involved aimags

5.2. Current Environmental Conditions and Major Problems

5.2.1 General Conditions

69. The country's environment resources offer great potential for expanding economic opportunities in mining, forestry, livestock husbandry and agriculture. However, many areas of concern are emerging highlighting the need for integrating comprehensive policies of sustainable development into the national development strategy and most importantly, ensuring effective implementation considering both the economic development and environmental conservation. The priority issues recognized are as follows:

70. **Air quality** is a significant environmental problem in big cities and aimag centers of Mongolia. Primary sources of air pollution thermal power plants, small and medium sized heating boilers, traditional Gers and wooden houses, and over 40,000 automobiles. Topography and meteorology exacerbated ambient air quality conditions in the country, and particularly in Ulaanbaatar. As a result, ambient pollutant concentrations often remained for days or weeks at a time to exceed Mongolian and other international ambient air quality standards. Burning of coal and woods in the households in urban cities has been identified as major sources of air pollution, which affects ambient air quality and human health.

71. **Energy:** During the winter season, three large diesel power plants in Ulaanbaatar release 4.5 million cubic meters of gaseous pollutants, 4.14 tonnes of particulate matter, and 6.76 kilograms of carbon monoxide into the air every hour. The energy sector accounts for around 64% of Mongolia's greenhouse gas emissions. More than 250 steam boilers burn over 400,000 tonnes of coal every year. Gers and wooden houses with manual heating (in which 48% of the city population lives), use over 200,000 tons of coal and more than 160,000 cubic meters of fuel wood each year. For the cold seasons, the atmospheric content of carbon monoxide exceeds the permissible norm by 2-4 times.

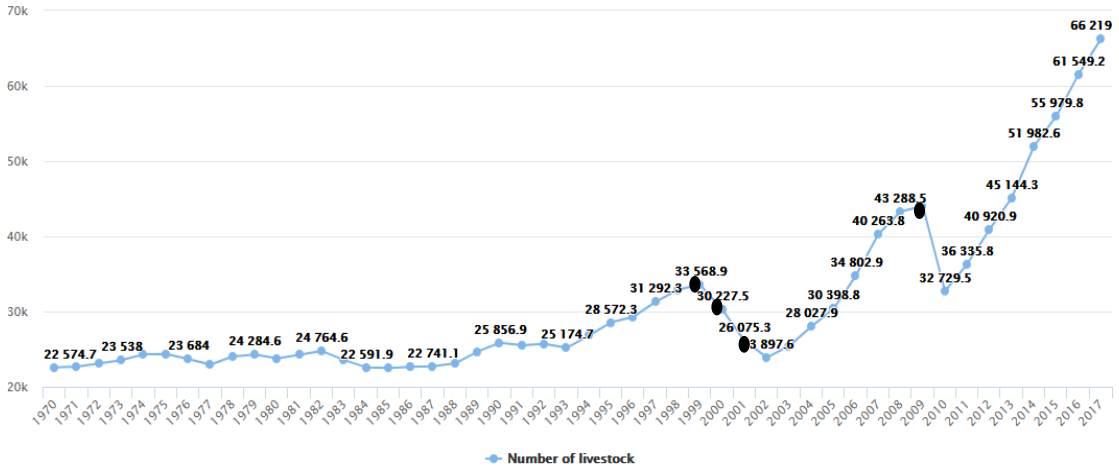
72. **Transportation:** Transportation is a major source of air pollution in urban cities and countryside. The number of motor vehicles has increased vary rapidly in big cities and settlements in a short period of time. In 1995, it was estimated that over 60% of the vehicles emitted pollutants exceeded the maximum allowable limits.

73. In Mongolia, dirt roads are 90 percent of the entire road network while asphalt and enhanced dirt roads do not exceed 10 percent. Dirt roads are one of the factors contributing to environmental deterioration and pollution, as well as desertification.

74. During the recent two decades, the number of cars that used unregulated, dirt roads increased in all part of Mongolia, particularly, in pilot landscapes. On top of that, the use of motorized transport, like motorcycle in herding practices instead of horse and camel is becoming common in Mongolia. All these newly emerging factors are leading to not only making dust increasing air pollution but also disturbing wild life habitat, forcing wild animals to migrate further in search for better habitats.

75. **Industry**: Industrial activities are also one of the major sources of air pollution in Mongolia. As estimated approximately one fourth of greenhouse gas emission is emitted from industrial activities.
76. **Water Shortage and Pollution:** Water shortage is one of Mongolia's major socio-economic and ecological problems. Though adequate in the north it is clearly a constraint on development in the south and particularly serious in urban areas including Ulaanbaatar, where water supplies are pumped from groundwater.
77. Little care has been taken over water supply and use. Water supply in pasture areas was improved over the period 1960/90 by construction of many wells to provide water to more than 60 percent of the rangeland, but only 40% of the existing 48,000 wells are currently functioning. Most wells drilled during the Socialist time are out of production.
78. Effluent from factories, tanneries, processing plants, households, waste disposal sites and road runoff has polluted the main rivers where people and industry are concentrated, particularly the Tuul, Yuro, Selenge and Orkhon Rivers. Of 102 centralized wastewater treatment plants built only 35 were in operation in 2002.
79. The pollution problem is due not just to domestic waste effluent, but also to the high levels of chromium used in the tannery process.
80. Even there are 5,500 rivers, 9,600 streams, 300 hot springs, 4,000 lakes and 30,000 wells registered in Mongolia, 3,000 rivers and streams had dried up by year 2000 and 1,200 wells are no longer in use because of depletion, deterioration of facilities or abandonment after the nomad's migration to the city. As a consequence, the use of water resources is limited, causing water shortage.
81. Land Degradation: The change in traditional ways of livestock breeding, over cultivation of land, overuse of nature resources and other types of pressure on ecosystems combined with climate change are leading to degradation of species habitats, shrinking of the home range, fragmenting of habitat, and decreasing of their resources. Causes of land degradation in Mongolia can be divided into two categories: human- induced and natural causes.
82. Natural causes include droughts with frequency of 2-3 years, natural drying, deficit in soil moisture, very thin layer of fertile soil, specifics of mechanical composition of soils, and strong wind in spring and autumn and dust storms.
83. Human causes include effects raised from rapid development of farmland, mining industry, changes in traditional livestock husbandry, and overgrazing, specially around settlement areas and water points.
84. The livestock production sector in Mongolia has reached a crossroads. The absence of policy or market-based mechanisms to control livestock numbers and a lack of awareness about rangeland degradation has led to increasing herd sizes. National livestock numbers as of 2017, at 66.2 million, are unprecedented in the historical record (**Figure 5.6**). Increasing livestock numbers beyond the capacity of rangeland to support them can lead to acute limitations of forage and persistent rangeland degradation.

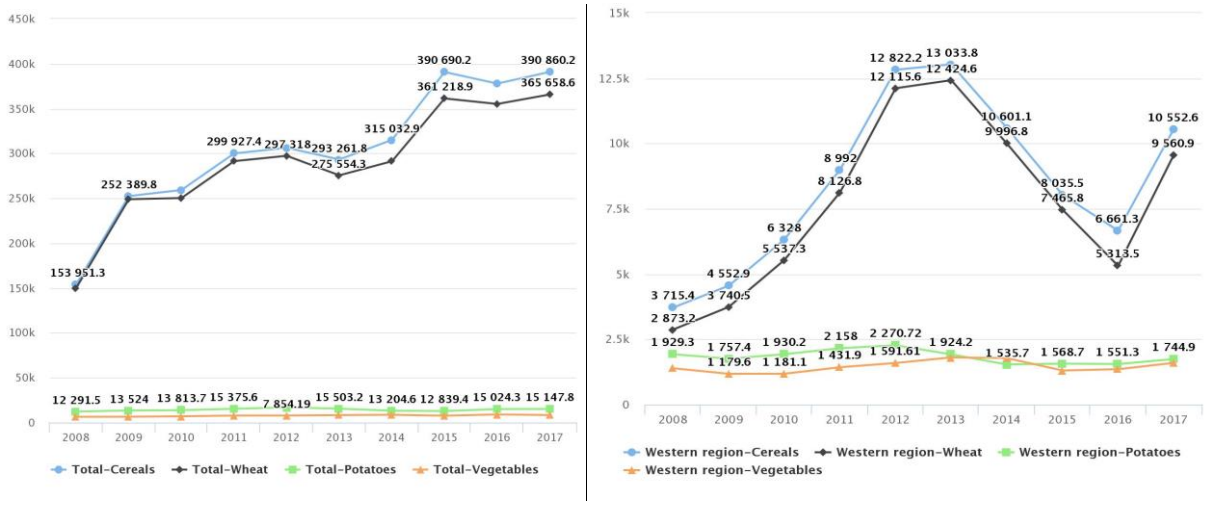
Figure 5.6. Total number of livestock (1970-2017)



85. Degradation ultimately reduces livestock production capacity and increases the vulnerability of herders to dzud and droughts. Catastrophic losses, associated with dzud and unprecedented livestock numbers, have already been observed in recent years. Such losses and longer-term rangeland degradation can negatively affect herder livelihoods, Gross Domestic Product, and the food security of the country (MFALI and SDC 2015).

86. Farmland degradation in Mongolia is one of the serious issues, which should be urgently tackled. The majority of the territory of Mongolia is in the zones with high risk for crop production featuring harsh climatic conditions. Agricultural land occupied 73.8 percent of the total land reserves of Mongolia of which only 0.5 percent or 780,000 ha (as of 2017) are used for crop productions (www.1212.mn) **(Figure 5.7)**. In comparison with 1990s when the size of the rotation plots made up 1.2 million ha, it reduced as much as twice with inability of full utilization of these plots upon dissolution of state farms during the transition to the market economy, degradation and decline in fertility and turning the land into steppes as the main reasons. Studies show that around 40 thousand ha of cropland had been degraded or abandoned in Mongolia because of slow action on transferring farmlands to individuals and economic entities for their long-term use or possession.

Figure 5.7 Sown areas for cereals and wheat in Mongolia (by ha)



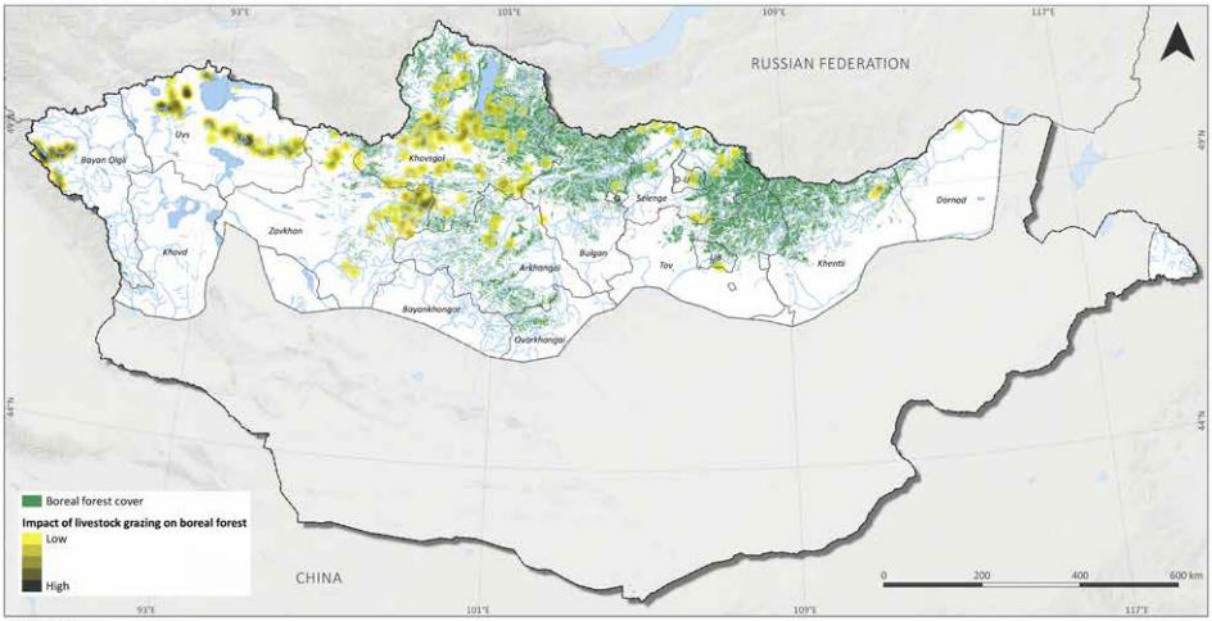
87. Producing over 50% of the country's total exports, mining is one of the rapidly growing and leading industrial activity in Mongolia. Mining is causing substantial soil destruction. No proper rehabilitation measures are being taken by enterprises during or after mining.

88. Moreover, pasture or land degradation directly and severely affects the rural population as herders depend heavily on pasturelands, deriving their food sustenance and cash income almost entirely from their livestock. Control of livestock numbers and better management of grazing is thus a fundamental precondition for effective rangeland management (MOFALI and SDC 2015).
89. **Solid Waste Nuisance:** In Mongolia, solid wastes are disposed in the open air near the cities, towns and soum centers. These wastes are scattered about and the disposition for soil to be polluted is becoming remarkable. Particularly, there is a big gap between city enlargement and city planning projects in Ulaanbaatar, Erdenet and Darkhan cities. Moreover, it doesn't have the good city planning project. There is much household garbage (33.8%), paper (18.9%), and plastics (15.2%) in summer. Ashes occupy no less than 60.2% in winter.
90. In Mongolia, there are no proper wastes treatment facilities. Therefore, the wastes are thrown away across the township. Particularly, Ulaanbaatar city has the serious wastes problem. Now, the proprietary company of public establishment private management and civilian enterprises which were entrusted from the municipal government prefecture are carrying out drawing in and disposal of the wastes of cities.
91. Solid wastes generated from factories, commercial establishment, and construction sites are collected by third party agencies. However, the solid wastes generated so much is over a wastes collection trader's interested collection capacity.
92. Soil Contamination: In Mongolia, the soil pollution raises due to widespread drainage of chemicals from the waste oil from cars and mining process, employment of agricultural chemicals, etc. Utilization of coal is the biggest causality of air pollution. Soil is polluted due to coal handling as well as scattering of ashes on the ground.
93. The number of cars has increased dramatically in recent years in Mongolia. Petrol stations within the city and near by main roads have risen to about 800 in numbers. Furthermore, there are backlog appliances of coal oil and small car garages numbering hundreds. Many of them are located in the place where drainage arrangements are not fixed. They throw away used oil in the drains leading to oil contaminating the soil. In addition, various medicines, such as disinfectant, insecticide, and agricultural chemicals, medical wastes, architecture scrap woods, etc. are increasing being used to spur productivity and economic growth.
94. In Mongolia, gold, coal, cupper, iron and other mineral resources mines are being exploited by 120 business corporations. These gold ores have high level of Mercury contamination which contributes as a material factor to widespread soil pollution. Moreover, leaching of chemicals happen during heavy rains from various unscientifically designed waste disposal sites and sewage disposal plants.
95. The GoM has provided immense amounts of loans and benefits to support crop production as the statistics show that the donations given to agriculture (wheat and meat) fluctuated around 4.7% in the total amount of government donations in 2007 to 2013. As a result of this policy of the Government, the investment in crop production has been increasing continuously including import of nitrous fertilizer having been growing by 10 thousand tons per year in 3 years (NRSO 2015). As some researchers have pointed out, there are cases of excessive residue of chemical fertilizers and pesticides in the environment and in the products due to loose regulation in the utilization of these chemicals. The agriculture programmes and policy papers issued since 2000 have strongly focused on increasing crop production while the financial support provided by the state have been ignoring the issues of ecological balance, soil fertility, economical use of water resources and this situation threatens the soil and water resources together with the biodiversity.
96. **Deforestation:** The total remaining forest covers 10.4 million hectares in the north, 2.0 million hectares *Saxual* forest and 3.6 million hectares of depleted forest, mainly near transport corridors. Statistics on deforestation are confusing but the causes are known to include legal and illegal unsustainable logging, wildfire, insect and disease infestation, animal grazing, and climate change.
97. Through the 1960s to 1990 average official harvest figures were approximately 1,500-2,000 million cubic meter per annum, very roughly 50% round-wood and 50% fuel-wood. In 2002, official figures recorded a harvest of 620 million m^3, almost all fuel-wood. Other issues in forest management are

the many forest fires and problems of disease control. The periodic infestations in the coniferous forests are natural disasters with serious local impacts.

98. Grazing also contributes directly and indirectly to deforestation and forest degradation in Mongolia. Both the southern Saxaul forests and the northern boreal forests are also widely used for grazing (sometimes seasonal), with approximately 35-40% of total livestock population of Mongolia grazing in and near forest areas in Mongolia. Dr. Emerton and Enkhtsetseg (2013) estimate that the role of forests in supporting grazing is worth more than MNT 34.5 billion (US$ 24.70 million) a year, making up 5% of the value of livestock production in soums with boreal forests.
99. Grazing can interact with other pressures on forests. For example, overgrazing results in damage to young trees and saplings, and can particularly hinder forest regeneration. The Multipurpose National Forest Inventory (2014-2016) found that 14.7% and 32% of forests experienced moderate grazing pressure in the Altai and Khangai regions, and 20.4% and 2.3% of forests suffered from intensive grazing pressure, respectively **(Figure 5.8)**.

Figure 5.8 **Pressure on boreal forests from livestock grazing** (by UN-REDD Program 2017)



100. Desertification: Mongolia is a country, which experiences serious drought and desertification. More than 40% of the territory is composed of arid and desert areas. There are estimates that 90% of Mongolia's territory is vulnerable to desertification and about 70% is already degraded to varying extents.
101. Desertification is characterized by (i) desertification of vegetation cover, (ii) desiccation of wetland ecosystems and (iii) increase of sand area. Causes of desertification can be divided into natural causes and anthropogenic causes.
102. Among the major cases are mentioned climatic variations which may lead to natural disasters that, through interaction with human factors, will lead to accelerated degradation at local level. For instance, desertification in the Gobi ecological zone is reported as being caused primarily by increasing aridity of climate and grazing impacts associated with livestock. The anthropogenic causes are overgrazing, wind and water erosion of cultivated soils and abandoned farmlands, intentional burning and vehicle tracks.
103. Loss of biodiversity: Growing population coupled with urbanization, economic development, and an increasing per capita demand for natural resources, have put enormous pressure on land and natural resources. At the same time, the recent transition from a centrally controlled economy to a free market economy has opened the country's natural resources to free enterprise and market forces. Increasing economic activity such as mining, land cultivation and crop farming, and the production of wild and domestic animal products for internal consumption and export, have

resulted in the disturbance hitherto undisturbed natural areas and the loss of wildlife habitat. Inadequately controlled or illegal hunting, and predator eradication programs also contribute to pressures on wildlife and on the natural balance in many areas.

104. **Climate change:** During the last 50 years or so, the average annual temperature in Mongolia has increased by 0.7°C. This increase in the average temperature has resulted in a variety of changes including serious impacts on the growth of natural and cultivated plants. The annual growing season in Mongolia lasts for only about 120 days which is not sufficient for the stable growth of plants, and if the growing season becomes shorter, many plant species will be threatened with extinction and this condition will pose a threat to the survival of many herbivores.

5.3 Social Baseline

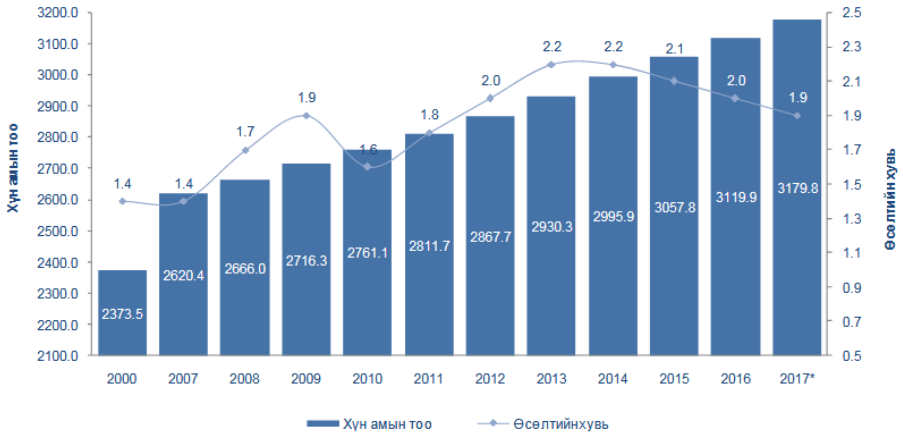
105. Social participation and gender equality are central to the Livestock Commercialization (LCP) Project's overarching goal. LCP can achieve its goals only if it simultaneously works towards gender equality and supports the diverse roles of women and vulnerable groups in agriculture and rural development.

106. The purpose of this document is to provide LCP with a framework for guiding project implementation and to maximize project interventions to achieve social participation and gender mainstreaming as herder productivity is increased and their links to markets are enhanced. As envisioned, this would be done by LCP through development of selected value chains, raising livestock productivity and quality through promoting animal health and animal breeding and genetic improvement. For assessing results; it calls on the whole PIU (Project Implementation Unit) and the various project stakeholders to drive, administer and contribute to these efforts.

107. The strategy specifies LCP's goal and objectives related to social participation, gender mainstreaming and delineates an accountability structure for ensuring strategy oversight and achievement of results. This structure includes specifications of the roles and responsibilities for coordinating and supporting implementation of the strategy, ultimately reaching the desired PDOs.

108. **Population:** Mongolia is one of the most sparsely populated countries in the world, as of 2017 with a population of 3,177,899 with an average growth rate of 1.9%. Approximately 67,5% (2,146,716) of the total population lives in cities, out of which about 68% (1,462,973) is accounted for by the capital Ulaanbaatar. Population density in rural areas thus averages 0.5 inhabitants per square kilometer, which reflects also the dominance of mobile pastoralism as the main rural livelihood throughout the country. Last years, the migration from rural area to urban is increasing, the average number of population migrated in the past 10 years is estimated at around 20,000 per year which cause the expansion of population of Ulaanbaatar. At present Ulaanbaatar accounts for 40% of the total population of Mongolia. The projected urban population of 2030 is 1.87 million or 1.7 times larger than the population in 2008.

Figure 5.9. Population growth rate



109. **Indigenous people, ethnic and minority groups:** Mongolia does not have an official indigenous people's policy. The majority of Mongolian population is Khalkh Mongols, identified as indigenous people. Nowadays, Mongolia has nearly 30 ethnic groups, and some mongolized ethnic minorities as Tuvans (Monchoogo), Tureg, Uriankhais, Khotons, Sartuuls, Tsaatans (reindeer herders), Khamnigans and Khotgoid, Sartuul, Khoshuud, Ozbek, Kharchin, Tsakhar and others.

110. Ethnic groups are scarce in most provinces, although they do concentrate in some with Khovd being a home to the greatest number of ethnic minoroties. According to most recent Population Census, most of mebers of ethnic minorities live in rural areas rather than in the cities. For example, Eljigen (88.4%), Tsaatan (87.9%), Darkhat (71.9%), Khotgoid (71.1%), Tuva (67.2%), Ozbek (66.2%), Dariganga (53.6%), Uzemchin (50.4%), Zakhchin (48.6%), Uriankhai (48.3%), Torguut (46.1%), Barga (45.1%), Khoton (44.5%), Buryat (42.0%), or almost 42.0-88.4% of the ethnic group population, live in countryside and are generally engaged in animal husbandry and livestock breeding.

111. Although, all the ethnic groups in Mongolia speak Mongolian (dominat Khalkh dialect), they have some distinctive specifics in their language, traditions and culture, however comprising a unity of community of Mongol people.

112. Among the project-involved aimags, Bayan-Ulgii, Khovd and Khuvsgul aimags have sizable numbers of ethnic groups such as Khazakh, Tuvans (Monchoogo), Uriankhais, Sartuuls, Zakhchin, Oold, Myngad, Khoton, Durved, Ozbek and Tsaatan (Ewenki) etc.

113. The largest representative of Turkic ethnicity residing in Mongolia is the Kazakh populace. In 1940, some tribes of Kazakh sought refuge in Mongolia and Mongolian Government allowed them permanent residence in Bayan-Ulgii aimag. Now, Bayan-Olgii aimag has population of 93,000 people, and 93.0% of them are Kazakhs and 7% are Tuvans, Uriankhais and Durvud. Also, dense Kazakh population lives in Khovd soum (whole population), Uyench soum (2 baghs), Bulgan soum (40% of population) of Khovd aimag. The Tsaatan (Evenki) ethnic minorities are living in northern soums of Khuvsgul aimag like Tsagaannuur, Renchinlkhumbe and Ulaan-Uul soums, Tuvans (Monchoogo) ethnic groups live in two bags of Tsengel soum of Bayan-Ulgii aimag.

114. The Kazakhs are not indigenous to the Bayan-Ulgii aimag while Tuvans, Uriankhais and Durvud ethnic groups living in Bayan-Ulgii aimag are indigenous and disadvantaged minority groups, because they are not fluent in Kazakh language, Also, there are reportedly a few hundred Tuvans, Uriankhais and Durvud, and Tsaatan as numerical minorities in Bayan-Ulgii and Khuvsgul aimags, they are not likely to be effectively represented in existing governance structures. They are therefore disadvantaged in participation in stakeholder engagement activities.

115. **Gender:** In the 20 years that Mongolia has lived through a transition to market economy, her economy has grown 20 times2 and the GDP per capita in 2016 was 8.4 times that of 2000. In 2005, the year the Asian Development Bank (ADB) undertook its Country Gender Assessment, the economic growth rate showed 7.3% (Figure 1.) and the long-term vision of a development generated by the fruits of mining was optimistic. It was in 2011, the peak year of Mongolia's economic growth, the Law on the Promotion of Gender Equality was passed, with its Article 5 defining the principle of gender equality as "men and women shall have opportunities and conditions to enjoy and to equally participate in political, economic, social, cultural, family and other relations, and to equally participate in social life and equally access the beneits of development and social wealth."

116. The World Economic Forum's gender gap indicator for economic participation and opportunity which placed Mongolia 21st in 2006 with a score of 0.704 and moved up to the 20th place in 2018 with a score of 0.780, is the only one from among four indicators for economic, education, health and political performance that has shown some progress. The country has seen overall reduction in poverty, whose rates went down from the urban 30.34% and rural 43.4% in 2003 to the corresponding 27.1% and 30.34% in 2016. Albeit Mongolia survived the Asian economic crisis of 2008-2009 and showed a growth of 17.3% in 2011, this rate declined to 5% in 2018, owing to economic downturn and the price slump on the mineral raw materials market. Alongside the

increased poverty in rural areas, the accelerated poverty rate has been observed in the capital city in recent years. And female headed households are poorer in urban areas while in rural areas the poorer ones are single father households.

117. Acknowledging the need and value of addressing social exclusion and gender inequality, the SDG Agenda 2030 has committed to "ensuring that no one is left behind" in the effort to help countries promote inclusive growth and achieve the SDGs. The 17 SDG goals recognize that ending poverty must go together with strategies that build economic growth and addresses a range of social needs, while tackling climate change and environmental protection. A standalone goal on gender equality and women and girls' empowerment (SDG#5) has been created, and gender equality targets are integrated throughout the other goals. The SDG 2030 has also put the spotlight on the importance of "data revolution" in order to collect disaggregated data (by sex, age, etc.) and use it for evidence-based decision making. Mongolia has adopted the Sustainable Development Vision that largely align with SDGs.

118. As of 2005, the mining, extractive industry, agriculture and the forestry, fisheries and hunting sector used to contribute equal shares in the country's economic growth while by 2017 the shares of agriculture and the forestry, fisheries and hunting sector had shrunk nearly two-fold. In the period since 2005, the processing industry has shown practically no growth and the contribution of the wholesale and retail trade as well as car and motorcycle maintenance services which in the peak years was on par with the mining, has been gradually slipping down in the past 7 years.

119. This lack of progress in the development of the processing industry and the paradox of the ever-increasing livestock and the diminishing economic value of agricultural produce all mean that the opportunity for individuals and households to meaningfully partake in economic development shows no improvement. This finding is further corroborated by an upward trend for the informal sector population which has grown to 219.8 thousand in 2018 from the 159.7 thousand of 2016.

120. Hence arises a pressing need to revisit the economic growth model and prioritize the development of sectors other than mining, which employs less than 5% of the workforce. An IMF research shows the pertinence of economic diversification to productive employment and elimination of inequalities in the access of the benefits of such employment by men, women and population groups. Increasing the opportunities and establishing clear processes for people's participation including equal participation of men and women in policy and decision-making in the economic sector are issues that still want resolution.

121. Among the efforts undertaken by the Government in cooperation with international partners to strengthen capacity for gender-responsive budgeting (GRB), an important place belongs to the Gender Strategy for Organizations and Agencies under the Authority of the Minister of Finance adopted in 2016 for a period up to 2024. The implementation of this Strategy's Objective Three aimed at introducing gender-responsive budgeting methodology in the budgetary process requires political commitment as well as engagement and support of broad partnerships for gender equality.

122. **Female and male employment:** Mongolia's statistics show that women's labor force participation has been declining since 2006 to fall from 64.8% to 53.4% in 2018. This indicates that the economic crisis has had a greater impact on women's employment particularly, women's workforce participation in urban areas, namely in the capital city (44.8%) as compared with that of rural women (60.5%) in 2018 (ADB 2018). While workforce participation of women and men aged 15 and above has grown by 27% since 2005, women's participation suffered a steep 9% drop in 2008 and 2009. The number of men in salaried employment saw a steady, if somewhat incremental increase over the past 13 years. According to NSO, Mongolian women earn 19.6% less salary than men in same positions as of 2019. Also, women are often engaged in less paid professions and irrespective of their individual competencies, women tend to occupy lower ranks than men in the job hierarchy both in the public and private sectors. In addition, women are engaged in household and care duties twice more than men which result in worse economic outcome from them.

123. According to the World Economic Forum assessment, as of 2018, women prevail among professional and technical workers with a ratio of 1.82. With regard to managerial posts, women have made some progress and account for 38.9% as against the 35% in 2005. But the fact that they still make up a minority group among executives in the traditionally female-dominated fields such as education and health, testifies to the persisting vertical gender segregation in the labor market.

124. Statistics show that unemployment among young women is to be primarily attributed to childbirth and childcare, following which they again join workforce at approximately 35 years of age. The number of women who become economically inactive owing to the need to take care of their children, grew in the period of 2012-2016 which coincides with a sharp increase in birth rates since 2005. However, the limited availability of childcare services leaves no other choice for young women except as to look after their children up to and often beyond the early school age, which results in a widespread phenomenon of prolonged female career disruptions. This calls for a heightened attention to the issues of improving social protection for young women engaged in childcare and creating opportunities for them to catch up at work after the rather long breaks.

125. The unemployment rate for men older than 50 years of age is high but any further analysis is hampered by the lack of data on the age-specific causes of unemployment. In the period since the start of transition to the market economy, there have been no adequate policies and programs aimed at facilitating people older than 40 including the retired population to acquire new skills fitting their age and physical capacity and supporting their re-oriented employment. The benefits of a senior citizens employment program run by the Ministry of Labor and Social Protection are being accessed by a small number of retirees with tertiary education

126. Regarding herder families, the cooperation among families gave rise to a residential group known as “khot ail”. The *khot ail* can be characterized as a socio-economic unit within which the member households cooperated in everyday herding tasks. In particular, they took turns pasturing the herds of the whole group on a day-today basis.

127. Within a given area, bounded geographically and characterized by relatively uniform environmental conditions, neighbouring *neg usniihan* with similar livestock husbandry practices and technology constituted a *neg nutgiinhan* (people of the same area). There were 2000 *neg nutgiinhan* over the whole country.

128. Most decisions of local social and economic importance were taken more or less independently at the level of these traditional *neg nutgiinhan* units. Each had its own local centre, usually with a temple, storage facilities, and perhaps a few small buildings. A range of activities was organized at the centre, including religious and ritual or cultural functions, public education, the coordination of local and long-distance transport, and the sale of handicrafts and other marketing activities. It therefore played an important role in the social and economic lives of herders. It is now known that at least 700, and perhaps as many as 1300, temples and served as centres of *neg nutgiinhan* throughout Mongolia (FAO 2016).

129. Both the *neg nutgiinhan* and the *khot ail* were eroded as institutions with the major drive towards collectivization. The *neg nutgiinhan* were abandoned or undermined through the destruction of the temples and *jas*[3] at their centres, and the *khot ail* was undermined by a gradual change in the division of labour under collectivization.

130. The current distribution of livestock by ecological zone can be classified as rational, optimal, and irrational (Bazargür, 1978). Animals distributed rationally by ecological zone are normally highly productive and yield products with very low costs or levels of input. The distribution of indigenous Mongolian breeds in the areas for which they are ecologically best adapted is a good example of this pattern. Livestock development in Mongolia is concerned with intensifying production and increasing specialization where appropriate.

131. The gap between rich and poor herders has increased and the incidence of poverty among herding communities is becoming more acute. Because of economic constraints for transportation and labor required to make seasonal movements and to market their products, poor herders must stay close to urban centers where pasture quality has declined. This means

they are experiencing ever increasing vulnerability to insecurity and risks. There are many young herders and newcomers among the rural poor, and availability of spring and winter camps is extremely limited for them compared to older, established and more financially secure herding households (Centre for Policy Research, 2012).

132. **Poverty:** The Mongolian Statistical Yearbook 2009 provides background data on poverty levels within the City. The Poverty Headcount Index is a widely-used poverty measure, giving the percentage of the population whose consumption is below the poverty line. For Ulaanbaatar, this rate is 36.7% in 2009, which compares to 38.7% nationally. This increases to over 49% in rural areas, showing that relatively speaking, Ulaanbaatar is wealthier than the rural areas. This translates to an average household income of nearly 455,000 MNT in urban areas, and 332,000 MNT in rural areas.

Table 5.3 Poverty level of Mongolia by region.

	National	Western	Khangai	Central	Eastern	Ulaanbaatar
Poverty headcount[8]	29.6	36.0	33.6	26.8	43.9	24.8
Poverty gap[9]	7.7	9.7	8.2	7.0	12.5	6.4
Severity[10]	2.9	3.7	2.9	2.7	4.8	2.5
Population share (%)	100.0	13.6	18.4	15.5	7.2	45.2
Population ('000)	3063.6	393.6	585.7	492.0	211.4	1380.4
Share in poor (%)	100.0	16.5	20.9	14.1	10.7	37.8
Poor ('000)	7.5	150.1	189.6	127.6	97.1	343.1
Household size	3.5	3.9	3.3	3.1	3.4	3.6
Dependency ratio (%)	41.7	42.8	41.6	41.7	41.3	41.4
Children (% HH size)	25.5	27.7	24.1	24.1	25.8	26.0
Age of household head	45.7	46.0	46.1	45.7	45.1	45.5
Male-headed HH	75.2	82.2	77.1	74.6	76.3	72.5
Urbanization (%)	67.8	33.4	40.8	48.8	41.6	100.0

Source: NSO, 2018

133. Poverty is also higher in rural areas than in urban areas. The following **Table 5.4** gives overview of selected key development indicators gives a first indication of the poverty situation in Mongolia:

Table 5.4 Key Development Indicators in Mongolia

Key Development Indicators	Measure	Year
Total population	2.7 million	2010
% under 15	27.3	2010
Population Distribution (% Rural)	36.7	2010
Human Development Index (HDI)	0.653	2011
HDI Rank. out of 187 countries	110	2011
Gini Coefficient	36.5	2000-2011
Total Health Expenditure (% of GDP) (USA 15.4%. Germany 9.1%. Russia 5.4%)	3.0	2010
Government spending on health as % of total Government expenditure	8.7	2010
Gross National Income (GNI) per Capita USD	2,247	2010
GDP per Capita. USD	3,522	2009
Literacy rate (15+)	97.8%	2010
Multi-dimensional poverty index	0.065	2005
% population with improved drinking water access	51	2011
Life Expectancy at Birth	68.5	2011

[8] Poverty headcount is the share of the population whose consumption is below the poverty line.

[9] Poverty gap is the average consumption shortfall of the population relative to the poverty line.

[10] Severity is the distribution of the consumption among the poor population.

Key Development Indicators	Measure	Year
Infant Mortality Rate (<5)	19.4 per 1.000 live births	2010
Maternal Mortality Rate	45.5 per 10.000 live births	2010

Sources: UNDP 2011. WHO CHIPS 2011. Health indicators. 2010. Human Development report. 2011. WHO / UNICEF (2012)

134. The analysis of the first Living Standard Measurement Survey (LSMS) in 1996 provided a profile of the poor and identified the most vulnerable groups in the country. More than 800,000 people or 36 % of the population were reported as poor. The assessment showed that female-headed households had a higher incidence of poverty as do unemployed and rural households owning less than 15 animals.
135. Urban poverty is marginally higher than rural poverty particularly in provincial capitals that have been hard hit by the closing of state enterprises. These observations are most probably still valid, although no new data exist. Income comes from different sources and varies according to location as shown in **Tabe 5.5**

Table 5.5 Monthly Average Income per Household (by sources of income and by location)

Types of income	National average (%)	Capital city (%)	Aimag centers (%)	Soum centers (%)	Rural areas (%)
Income Total	100.0	100.0	100.0	100.0	100.0
Monetary Income Total	91.5	97.0	94.6	89.4	70.9
Wages and salaries	48.5	57.0	52.5	49.3	13.8
Pensions. allowances and compensation*	20.0	18.3	22.2	20.5	22.1
Income from livestock products	5.3	0.2	1.9	5.7	26.6
Income from crop products	0.5	0.0	0.3	2.4	0.8
Income from nonagricultural production and services	10.7	14.0	11.2	5.9	3.4
Other income	6.5	7.5	6.5	5.6	4.2
Food and nonfood products received from others free of charge	3.1	2.8	2.9	1.4	5.7
Food consumption from own business	5.4	0.2	2.5	9.2	23.4

(Source: NSO 2012)

136. Private transfers by family members living in the capital or abroad provide a significant source of income in poor households accounting for nearly 20 % of total income. Without these private transfers the poverty rate would increase to 46 % of the population.
137. The survey found that there was a strong correlation between unemployment and poverty with 58 % of the unemployed being poor. Unemployment was a particularly difficult problem in both the urban and rural areas. In addition to the 100,000 already unemployed the civil service reform will create another 30,000 unemployed in public service sector. In addition, over 25,000 people enter the labor market annually finishing their education. Among the rural poor 35 % of the very poor and 14 % of the poor were unemployed. Among the urban poor, the situation was even worse with 55 % of the very poor and 34 % of the poor being unemployed.
138. Mongolia is experiencing a growing difference between the living conditions of rich and poor herders, about 37 % of livestock-owning households struggle to subsist.
139. **Education:** The educational system of Mongolia is composed of nursery, kindergarten, primary school, secondary school and university facilities. Every Soum has at least one nursery school and kindergarten. There are often also privately-run nursery building and facilities (for children over the age of 3). Each Soum centre has building with boarding facilities, where children from the more remote herder families are accommodated. Primary and secondary schooling used to be for 10 years, but was extended to 11 years. The school year of 2008-2009 marked the beginning of the 12-year system. In Mongolia, the school year begins in September. Pupils who want to complete secondary school often need to attend building in the Aimag centres. Generally, men and women

in rural areas have attended school up to year 8 and can read and write. 84% of the 35,228 pupils, who went to school in rural areas and stayed in dormitories, come from herder families (2009). Girls and boys have equal access to building, vocational training and other state services.

140. The situation changed when the economic downturn of the 1990s put pressure on the financial stability of families and strained the school budgets. This led to an increasing number of children being taken out of school and put to work helping their families. The introduction of free market economy put more than 36% of the Mongolian population below the poverty line by 1995. At one point, more than 15% of rural children were being put to work, mostly with herding. Furthermore, over 8% of urban children were working instead of attending school.
141. There is a serious gender disparity at colleges and universities of Mongolia as well as in professional orientation, which are become upsetting indicators in terms of gender. In 2016 the gross enrolment ratio of female and male students was 1.4, which was higher than in the industrialized countries that promote higher education for women. Although this abnormality is being associated with the importance given by parents to girl's education, it is actually linked to the growing number of higher educational institutions and the overriding interest to provide training in business and law, social and humanitarian disciplines that are not only cheap but also attract a high rate of enrolment.
142. Women studying at colleges and universities are in the majority in such disciplines as education (females 20%, males 7%), health (females 11%, males 3%), and humanitarian (females 10% and males 6%). Whereas the men are predominantly studying in engineering (males 23% and females 8%) and services (males 12% and females 3%). The average lifespan of the Mongolian population and the potential employment duration is getting longer, people aged 40 and above have less chance of acquiring and converting to new profession and skills. There is an urgent need to develop gender-sensitivity in the lifelong learning system.
143. As part of the educational reform of 1995 courses and degrees were transformed to a Bachelor/Masters system based on the system used in the USA. The development of competitive private education providers was encouraged by the introduction of university fees with such success that Mongolia was considered a worldwide model. The new opportunities were taken up on a large scale, not only by Mongolian institutions, but also by foreign universities with bases in Russia, China and the USA, among other countries. More than 100 private universities have been established up to date. The most important funding source for the universities is university fees, which reach astronomical proportions particularly for prospective students at the lower end of the income scale. On the other hand, there are scholarship opportunities for poorer students. In the 2001/2002 academic year, the State paid the study fees for about 5% of the circa 90,000 students and over one-third of students received State loans. However, the internationalization of tertiary education has largely remained a one-way road. Preferred target countries of Mongolian students are the USA and Germany. In Mongolia itself, foreign students and visiting scientists come mostly from East Asia.
144. A total of approximately 210,000 students were registered in 2010 with the country's universities, higher educational institutions, colleges, technical and vocational building. One peculiarity of Mongolian education is the disproportionate involvement of women. This inequality starts with the first day of school and widens with the increasing length of education such that the proportion of women university graduates reaches 63% (2009).
145. Among the population aged 10 and above the percentage of people with at least primary education is 92.5% (2010), with an increase of 4.6% compared to 2000. The percentage of males with higher education has increased twice between the two censuses, whereas the same figure has increased 2.8 times among females. Literacy level among population aged 15 and above is 98.3%, which has increased by 0.5% since 2000.
146. **Health Care:** During the Socialist Period health services were publicly funded, but despite achievements in facilities and improved health status, the system was inefficient. In the mid-1990s, the health sector reform focused on improving primary health care and disease prevention. This,

along with economic development, contributed to improvements in health status over the last 15 years.

147. Within the framework of health, the most critical gender issue is the gap between female and male average life expectancy. At the global level, women on an average live 4.3 years longer than men, in 2018, this figure for Mongolia was 9.67 years, compared to 4.19 years in 1992. But the average life expectancy of men dropped suddenly in the years from 1995 to 1998, which was the negative impact of the transition to a free market economy. However, after 2000, average life expectancy has been growing consistently, while gender inequality has been increasing (Asian Development Bank, 2018).
148. The leading causes of mortality are non-communicable diseases (cardiovascular diseases and neoplasms) and external causes (injuries and poisonings). Respiratory and digestive system diseases are the main causes of morbidity, along with external causes (injuries and poisonings) in urban areas and urinary tract diseases in rural settings.
149. The health system is decentralized to the level of the Aimag. The majority of health services are delivered by the public sector.
150. Mongolia has more than twice the average number of hospitals of EU countries and other transition countries, although the numbers have been declining since 1998. At the same time there has been a decline in the number of in-patient beds, though Mongolia still has a high number of beds at 68.1 per 10,000 inhabitants in 2011.
151. However, there are more and more reports that the quality of health services is deteriorating. Thousands of people who urgently require medical care are at risk not to get adequate care. According to doctor's reports there is a general lack of functioning an aesthesia devices and medication. There is also a lack of medical information, e.g. in 2008, in average only 12 % of women were aware and had a correct understanding about transmission modes of HIV/AIDS and only 22% had at least a basic understanding of transmission modes of HIV/AIDS.
152. The deteriorating state of the national health care system has clear negative impacts on the health situation of the population. Infant mortality, for example, has not only increased in several regions (Western, Khangai and Eastern) but also in the national average.
153. Also, infectious diseases are spreading/increasing: In the first 11 months of 2012 the total number of cases reached 39,301, an increase by 873 cases or 2.3% compared to same period of the previous year. The increase in the number of infectious disease cases was mainly due to increases of 7,408 (9.3 times the previous figure) in mumps and 466 (11.8%) in syphilis - although there were decreases of 6,228 (49.4%) in viral hepatitis.
154. To improve the situation, the government has established a National Quality Program and a National Program on Improving Hospital Quality Management (2008-2013), but as yet there are no reports about the extent to which these plans have been implemented and no actual evidence whether they have actually enhanced quality.
155. The State funding of primary health care aims to provide access for everyone. Vulnerable groups are exempt from co-payments (mothers, children under 5 years, the elderly and youth). However, there is still an urban-rural disparity in access. Provision of services favours urban and non-poor areas. Rural areas suffer from a shortage of health workers. These days, when someone has a medical emergency, they are more likely to seek contact to the next urban centre.
156. About half of the employees work in service industry. Agriculture has a large share of employment, accounting for 27.1% of all employment in the labour market. Between 1996 and 2015, the gender gap in labour force participation rates increased from 4.8 percent to 12.6 percent and the female labour participation has declined in comparison with male participation (NSO 2018).
157. About 56.1% of the total unemployed people in Mongolia are youth between 18 to 35 years old. Many young Mongolians experience a lengthy period of unemployment before finding a job and this period is over 12 months in most cases[i]. When jobs are available, they are usually underpaid, resulting in brain drain of middle-skilled laborers and some portion of skilled laborers who immigrate to countries with better working conditions and higher wages, like South Korea and Japan.

158. Young people who do work are often concentrated in the informal economy, especially in rural areas. In aimags and soums outside Ulaanbaatar, only 6% of working youth hold jobs in the formal economy. The rest usually work in animal husbandry (68%) or in non-wage family jobs (20%), where conditions are poor and prospects for upward mobility and escape from poverty are very limited. The other end of the job quality spectrum is youth in the capital Ulaanbaatar city centre, where three-quarters of employed youth enjoy high wage jobs and almost two-thirds hold jobs in the formal economy (Pathways for Prosperity Commission, 2019).
159. The Government of Mongolia has placed a high priority on achieving the Sustainable Development Goal 2030. Some of the major achievements in moving towards this goal are the high coverage of antenatal care (87.7%) and delivery by skilled birth attendants (99.8%). However, providing maternal services to a mobile and migrant population is a challenge and the infant mortality rate stays high, especially in remote areas – where the herders live.
160. There are international NGOs like "Nomadicare" which recognize that the nomadic lifestyle is at risk due to its extreme remoteness, compounded by the lack of infrastructure like roads, electricity, and water. If nomads get sick and need to go to a provincial hospital with adequate diagnostic and treatment capacity, it can be many hours away. To support their cultural survival, nomads need effective health care close to their homes. Nomadicare works on this problem.

6. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

6.1. Potential Environmental and Social Impacts

161. According to the result of reviewing project documents and results of interviewing with local Government officials, herders and representatives of main stakeholders/ beneficiaries of the project, they were explaining that following site specific activities would be suggested and implemented within the LCP through sub-projects and these activities will generate positive impacts on the biophysical environment, but negative impacts may arise from construction and renovation of facilities. Following impacts identification matrix in the **Table 6.1** can show the positive and negative impacts arise from those activities.

Table 6.1 LCP impact identification matrix

Components	Sub-projects or activities might be implemented within LCP	Biophysical environment				Socio-economic conditions			Physical cultural resources	Labour conditions, occupational health and safety	
		Wildlife	Hydrology	Vegetation & soils	Climate resilience	Liveihood resilience	Access to natural resources	Indigenous peoples		Labour conditions	Occupational health and safety
Component 1	1.1 Supply and distribute aseptic to local farmer/herders through soum level Veterinary Services					+				/-	/-
	1.2 Construct and operate livestock dipping facilities.	+	-	-	-	+					
	1.3 Livestock disinfection activities spraying by liquor against the parasites	+	-	-	+	+/-	-	+/-			
	1.4 Establish and build fencing for vaccinate the livestock	-	+	+	+	+/-	-	+/-	+		
	1.5 Construct buldings or facilities for improving veterinary facilities and infrastructure	+		+	+						
	1.6 Study, survey and training										
	1.7 Install new equipment	+	+	+	+	+/-	-	+/-	+		

	1.8 Renovate or construct buldings or facilities for improving laboratories and diagnostics infrastructure.	+	+	+	+	+					
	1.9 Advising and controlling on proper supplying, distributing and using of aseptics and medicine to local farmer/herders.	-	-	-	-	+/-		+/-		+/-	+/-
Component 1	2.1 Establish and operate new wells Establish fencing the pastureland/farmland area	+	+	+	+						
	2.2 Establish and improve nucleus herds	+/-	+/-	+/-	+/-	+		+/-	+	+/-	+/-
	2.3 Introduce improved breed of livestock and provide herders with beef bulls	+	+	+	+						
	2.4 Planting fodder plants/forages.	**+**	**+**	**+**	**+**	**+**	**+**	**+**	**+/-**	**+**	**+/-**
	2.5 Fencing the hay making fields	-	+	+	+	+	-	-		-	-
	2.6 Distributing and using of pesticide and chemical fertilizers to local farmer/herders.	-	-	+/-	+/-	+/-		+/-			-
	2.7 Establishing of micro-scale processing units to make fodder products.	+	+/-	+	+	+	-	+/-		+	+/-
	2.8 Improve irrigation system and facilities	+	+/-	+	+	+	-	+/-		+/-	+/-
	2.9 Operate semi-intensive dairy and meat farms	**+/-**	**+/-**	**+**	**+/-**	**+**	**+**	**+**		**+**	**+/-**
	2.10 Operate meat and dairy processing workshops	**+/-**	**+/-**	**+**	**+/-**	**+**	**+**	**+**		**+**	**+/-**
	2.11 Establish livestock feedlots facilities	+	+	+	+	+	+/-	+/-		+	+
	2.12 Establish livestock treatment facilities	+	-	+	+	+	+/-	+/-		+	+
	2.13 Establish nucleus herds of cattle and sheep to supply improved male animals to improve meat production.	-	-	-	+/-	+	+/-			+	+/-
	2.14 Establishing of micro-scale processing units to make meat products, and preserving meat.	**+/-**	**+/-**	**+**	**+/-**	**+**	**+**	**+**		**+**	**+/-**
	2.15 Introduce improved breed of livestock and provide herders with beef bulls, rams and improve artificial insemination (AI) capacity.	-	-	-	+/-	+	+/-	+		+	+/-
	2.16 Operate small scale dairy factory	**+/-**	**+/-**	**+**	**+/-**	**+**	**+**	**+**		**+**	**+/-**
	2.17 Establishing of micro-scale processing units to make dairy products and preserving milk etc.	**+/-**	**+/-**	**+**	**+/-**	**+**	**+**	**+**		**+**	**+/-**
	2.18 Establish and operate slaughter house and meat storage	+	-	-	+	+		+		+	+/-

(+) : Positive impact, (-) : Negative impact

162. Currently, there is no enough practice in using of pesticide and chemical fertilizers such as nitrogen fertilizers to increase the yield of cropping in project proposed soums and all farmers/vegetable growers in soums involved in field survey use goat and sheep manure as a fertilizer for improving the soil quality and yield of crop production.
163. MOFALI and some bigest agricultural companies such as “Gachuurt” LLC and other companies operating in Selenge, Bulgan, Khentee, Khovd and Tuv aimags are importing pesticide and chemical fertilizers from Russia and China. This influences rural individual farmers to use chemical fertilizers for increasing yield of cropping and some farmers are buying chemical fertilizers. Therefore, LCP needs to include some specific activities concerning to improve project farmers’ knowledge on impact of pesticide and chemical fertilizers, how to properly use them, and build capacity to local Environmental Inspectors, Land managers and Agricultural Officers and improve their skill and methodology on how to control and monitor the distribution, storage and use of pesticides and chemical fertilizers at local soum level.
164. Currently, crop companies, entities and vegetable growers in project soums do not use pesticides for vegetable production, but it may be induced by the local farmers to intensify cropping of fodder

and forages. Therefore, following potential impacts may be arised within project supported cropping activities.

- Environmental, air and water pollution caused by lacking of proper contain of pesticides
- There is a high-probability of wrong usage of chemical substances and pesticide for herders and local people involved in a project because their knowledge, conception and experience are not enough about how to use, contain and transport properly these substances.
- Lack of material and equipment to measure the proper lowest quantity of pesticide for vegetable and plant, detrimental effects are possible to human health
- Potential impacts of pesticides and chemical fertilizers which may be induced by the project due to improper usage of pesticide because of lack of knowledge about usage standard and norms.

165. The project activities during construction phase will involve construction of small processing factory buildings, veterinary facilities, establishing TAD free zones, compartment zones livestock sheds, dairy farm building, processing units, livestock dipping facility, pastureland fencing which will involve excavation for building and equipment foundations, concreting, civil works and erection of equipment, clearing of area including transplanting trees wherever required, and restoring top soil in surrounding areas within the project object premises. During the operation phase, most of the construction phase impacts will get stabilized and the impacts will be restricted only to the operation and maintenance of the buildings and facilities.

166. During the operational phase of LCP, following key impacts would be arise from improper operation and maintenance of established facilities and management of services:

- There are no specific storages for keeping pesticides, fertilizers and abstergent, and the delivering place was just open area and no separation from ground. In the result of this, it can be negatively impact to the environment making air, soil and water pollution.
- Due to improper technology used for cropping, the soil could be eroded and is it possible that the types of plant cover, soil mono-cellular matters, worms and micro-organisms could be in a danger of extinct.
- Negative effects on soil and increasing of erosion in the case of plough up virgin soil for agriculture and cropping.
- Decreasing of pasture land and loosing of hay making area, changing the native or natural features of the environment
- Increasing garbage related to animal excreta/dung, and manure around the intensive farms which influence to contribute increasing of methane gas emission.
- Chemical substance and fertilizer in a soil are detrimental effects to human and animal health
- Pollution of soil and surface water from the waste water generated by processing factories/units
- Changing of micro-climate due to improper usage of water resources for irrigation
- Impact on water resources from improvement of water supply (e.g. the digging of shallow/drilling wells for irrigation of fodder production and vegetable plots);
- Pasture degradation, soil and environmental pollution around the well due to unorganized usage of the well and intensive forms of livestock production
- Raise conflict between well users and other neighbouring herders
- Inefficient use of water resources for meat and dairy processing
- Increase of soil and surface water pollution from improper use of aseptic
- The wastewater generated by meat and dairy processing operations may include acids or bases (exhibited as low or high pH), soluble organic chemicals causing depletion of dissolved oxygen, suspended solids, nutrients (phosphorus, nitrogen), heavy metals (e.g. cadmium, chromium, copper, lead, mercury, nickel, zinc), cyanide, toxic organic chemicals, oily materials, and volatile materials.
- Increase in solid waste

- Raising of conflict between project involved herders and non project herders if improperly organize pasture management and fencing of hay making areas
- Water pollution related to livestock dipping facility

6.3. Mitigation Measures Against Environmental and Social Impacts

167. The mitigation measures to solve the impacts of the project activities on various environmental and social attributes are discussed in following subsequent sections.

6.3.1 Mitigation Measures Against the Impact on Physical Resources

Impact on Topography

168. During the construction of the buildings/facilities, the most prominent impact on the surface topography will be due to the excavation for foundations, removing of cover soil and the trees (if any) and erection of buildings. The impact will be irreversible, as the present feature of the site as well as the land use will change due to construction of new buildings for the sub-projects.

169. The construction phase involves site preparation, clearing of existing vegetation and some earthworks for leveling the surface. These activities may cause some negative impacts such as:
    - Change in Landscape;
    - Emission of Dust;
    - Associated noise; and
    - Improper management of construction debris and solid waste may pose risk to the neighboring households and entities/institutions.

No topographical changes are envisaged during the operation phase of the sub-projects.

Impact on Climate

170. The increasing number of intensified cattle farms will produce more animal excreta/dungs which can contribute to green gas emission specifically emit methane gas and impact on climate change and ozone layer deflection. Therefore, the sub-projects have to include some measurement to compost/re-use or to disposal these excreta in the project planning.
171. Design and construction of facilities and buildings should consider “climate proofing design” since the occurrence of earthquakes is gradually increasing in Mongolia. Earthquake resistant design should be incorporated in design consideration of the building. Alternative solutions and final designs should be subject to expert and community consultation. However, the overall impact on the climate conditions from the proposed sub-projects both during operation phases will not be significant.

6.3.2 Mitigation Measures Against the Impact on Environmental Resources

Impact on Air Quality

172. During the construction phase, the activity would involve excavation for the erection, movement of transporting vehicles carrying the construction materials etc. along the access road. All these activities would give rise to emission of dust particles thereby affecting air quality marginally at the site which although will be transitory in nature. Though the emissions are temporary and not expected to contribute significantly to the ambient air quality and will be within prescribed limits for industrial regions by National Ambient Air Quality Standards, necessary measures are to be taken.
173. The air quality in the sub-project areas may slightly deteriorate for the time being during construction mostly due to dust emission. Dust produced will potentially negatively affect the following:
    - Residents and general public; and

- Adjoining apartment dwellers and other buildings in the vicinity;
- Community areas – gardens, tourism and recreational areas etc;
- Pastureland;
- Construction workers;

174. Regular sprinkling of water on open surface and dust emitting grounds should be done regularly until paving is done during dry season and keeping all soil, sand, and aggregate piles covered (whether on the site, or on trucks) to minimize the air pollution during the construction stage. If there is any complain of dust emission from residents and neighbors, should be given proper attention.

The construction of buildings/facilities will not have any negative impact on the air quality of the region during the operation phase.

Impact on Noise Levels

175. During the construction phase, the major sources of noise pollution are movement of vehicles transporting the construction material and equipment within and outside the construction site. Most of the access roads along the location are wide enough and can be used to bring construction material without obstructing the neighborhood roads. The major work of the construction is expected to be carried out during the day time however the movement of trucks and concreting may happen in the night to avoid congestion in the area in the day time. There, residents living nearby will be exposed to noise generated during day and night during the construction phase.
176. Construction works may cause objectionable noise nuisance to workers, residents or olders. Soum administration and residents must be notified in writing on the date of commencement of construction work at least half month in advance. Following measures will help to keep noise and vibration in acceptable level during construction phase.
177. Contractor shall equip their heavy construction equipment and plants with exhaust silencers to limit the engine noise not to exceed 75 db(A) (compacters/rollers, loaders and cranes) and regularly maintain all construction vehicles and machinery that should meet the Mongolian National Standards for Noise Emission.
178. Contractor shall preferably limit working time for activities that create noise within normal waking hours of the public except for construction site near public sensitive receptors. Construction related activities closer to sensitive receptors have to be scheduled in coordination with the residents and relevant authorities.
179. Contractor and its suppliers of construction materials should strictly implement noise control regulations stipulated for Noise pollution for all construction vehicles and equipment. All machines will be fitted with noise reduction devices. Mongolian standards currently establish a maximum environmental noise goal for residential receptors of 60 decibels (A-weighted) (dB(A)) during the daytime and 45dB(A) during the night time, with night being defined as between 22:00 PM - 06:00 AM hours. Depending on noise attenuation and proximity to the construction works, 24 hour a day construction may breach the National Standard for Noise (MNS 4585:2007). World Bank EHS guidelines 2007 for noise limits will apply as they are more stringent than the Mongolian noise standards.
180. For managing noise nuisance, construction works should be limited to daytime hours and all employees likely to be exposed to ear noise must use ear protectors. However, the noise impacts will be local limited to the premises and very short term. Loud noise may disturb the local resident apartment dwellers during normal hours of waking as well. Due consideration must be given by the Construction Company in consultation with local residents. Noise barriers may be installed by the Construction company to ensure residents are not inconvenienced.
181. During the operation phase of sub-projects, the ambient noise level has to meet the World Bank EHS guidelines for residential areas (55 dB(A) during daytime and 45 dB(A) during night time).

Impact on Surface Water Quality

182. The construction and operation of the meat processing factories, livestock dipping facilities will have impact on the surface and ground water quality in the area. This can be mitigated by planning of EMP and establishing proper small-scale waste waster treatment facility according to national standard. Contamination of water bodies, if any in that area, may result due to spilling of construction materials and surface runoff from the construction site adjoining the water body. There may be increase in the turbidity levels temporarily where the surface runoff during construction meets the drainage of the area. This can be avoided by careful selection of the raw material and waste material storage at the construction site.

183. Proposed activities will create temporary impacts to the existing drainage system in the area including in earthen and line drains. Thus, it will create temporary inundation closer to the above locations during rainy season. Stagnation of water will create direct impact on public health. Thus, incorporation of following measures will minimize anticipated impact due to obstruction of natural flow paths and existing drainage:

- Provisions of temporary drainage facilities to the particular locations if existing drains are obstructed due to construction activities.
- Maintenance of all drainage paths by avoiding blockages at all times.
- Contractor should minimize excavation of drainage systems in the sub-project affected areas.
- If any sub-project is situated in immediate vicinity of the water body/river, adequate reinforcement of embankment will be done to ensure no surface runoff gets discharged into the water body/river.

184. Care shall be taken to locate the temporary construction worker sheds away from the drainage/water bodies. Adequate drinking water facilities, sanitary facilities and drainage for any building/facilities and in the temporary sheds of the construction workers should be provided to avoid the surface water pollution. Provision of adequate washing and toilet facilities should be made obligatory. This should from an integral component in the planning stage before commencement of construction activity of sub-projects.

Impact on Ground Water Quality

185. Ground water pollution can take place, if chemical substances and oily waste get leached by precipitation of water and percolate to the ground water table. For sub-project building/facilities' construction activity, no chemical substance or oil is used hence there is no impact on ground water quality. The silt discharge from the earth work around water bodies, oil, grease and fuel release from the construction vehicles/equipment and spoil from construction and other construction related activities such as raw sewerage from worker accommodation sites will mix with runoff water. This situation will increase during the rainy season and have a critical impact on surface and ground water. Thus, following measures will be required in order to prevent deterioration of water from the construction and construction related activities:

- All construction vehicles and equipment should be maintained in proper conditions without any leakages,
- Contractors shall use silt traps and erosion control measures where the construction is carried out in close proximity to the water bodies to avoid entering of cement particles, rock, rubbles and waste water to the surrounding drains,
- Construction activities requiring digging should be preferably done in the dry season,
- Waste oil should be collected properly and disposed to the approved location.

Impact on Soil and Geology

186. Project activities including excavation, cut and fill operations, removal of trees and green cover vegetation etc. will enhance the soil erosion during the rainy season. The excavation activity and land clearance in the erosion prone areas have been minimized. Leveling and stabilization of

construction sites will be done after completion of construction activity. Also, increased acceleration of surface runoff will damage the topsoil. The impacts associated with excessive erosion and other civil works can be avoided or minimized by following mitigation measures:

- Effort should be taken to minimize removal of trees and green cover vegetation.
- Minimize obstruction or destruction to natural drainage pattern of the surrounding area.
- Proper treatment of clearing and filling areas against flow acceleration.
- Contractors shall restrict cut and fill operation around sharp/deep slope areas.
- Topsoil, which is removed during construction, must be stored separately for future utilization.

Impact on Ecological Resources

187. Since building/facilities are constructed in government lands, there is no displacement of people or animals. It is also not causing any disturbance to the life of people and local animals and bird movement. There is no dynamic equipment and moving machinery causing noise pollution, water and air pollution. There is no national wildlife park, bird sanctuary, and wetland in the location of the proposed buildings/facilities. The ecological impacts are briefly described in the following sections.

Effect on Flora and Fauna

188. Each of project-involved aimags have at least one or two of the declared environmentally sensitive areas or protected areas. It is not expected that any flora and fauna that are rare, endangered, endemic or threatened will be affected if any sub-project will be followed the requirements of Law on Protected Areas, and the selection criertia of the subprojects. Also, noise, vibration and emission from construction vehicles, equipment will occur during construction and pre-construction stages in temporary manner. The impacts related to above activities are temporary and can be mitigated through following measures:

- Strict attention on worker force regarding disturbance to surrounding areas.
- Selection of approved locations for material storage yards and labor camps away from the environmental sensitive or populated areas.
- Avoid entering of construction waste (cement particles, rock, rubbles and waste water) and sanitary waste to the surrounding water bodies.

Impact on Terrestrial Ecology

189. There are some sub-projects may be implemented in protected areas such as nature reserve and local protected areas which allows to carry out livestock husbandry and agricultural activities according to laws. Therefore, such sub-projects' impacts should be evaluated by GEIA during initial periods of the construction phase and impacts would be minimized through adoption of mitigation measures included in EMP.

Removal of Trees

190. The construction works along the location involves land clearance, cutting, filling and leveling that may cause loss of trees. The local government or individuals own all these trees privately. The exact number of trees affected will be known during the final location survey and construction. This will be an irreversible impact. However, any tree that will be cut may be transplanted depending on its type and its suitability for transplantation within the sub-project premises. This will minimize the tree loss.

191. It is highly recommended to establish a tree-replanting program, which should be undertaken e.g. where two trees will be planted when a single tree is cut. This was accepted and supported by city, Soum and Aimag Governments concerned. The construction company would be responsible for replantation of trees cut from the construction area within the sub-project premises.

Effect on Local Road Network

192. Iron bars, concrete materials, piling equipment, etc. will be transported through the local road network to the project site. Transporting of large quantities of materials using heavy vehicles could exceed the carrying capacity of the road. This would lead to physical damages to local road network. Thus, it will be necessary to obtain consent from the Road and transportation authorities to use local/national highway roads prior to transportation.

193. The Construction Company should properly maintain all road sections, install road signs warning of children crossing etc. which will be utilized for the construction related activities. In presence of multiple sub-project sites in the vicinity of construction area, the Construction company will ensure free and safe access roads to each sub-project and install appropriate road safety signs as necessary in the area.

Effect on Visual Aesthetics

194. The sub-project site has some grass and scrub vegetation that will be affected due to the land development. But with completion of the building/facilities and replanting of new vegetation and trees around the building, the building site should recover the visual aesthetics.

Disposal of Debris

195. As a result of construction related activities, spoil and debris will be generated during the construction stage. Improper disposal of the debris will have an impact on the surrounding ecology, public health and scenic beauty. Following measures will minimize the impacts associated with disposal of debris:

- Spoil materials (soil, sand, rock etc.) generated from construction activities shall be used wherever possible for site leveling, back-filling etc. Any dismantled and demolished structural materials, if any, should be dumped in accordance to government norms.
- Preparation of Disposal Management Plan for the project and selection of the disposal site by excluding locations, which are closer to residential, commercial and public sensitive areas, is necessary by the construction company. Prior approval should be obtained for linked facilities such dumping grounds / land fill sites from relevant local authorities.
- Dumped materials will interfere with the drainage pattern of the area, any water bodies, agricultural lands, marshlands and down slope or any environmental sensitive areas if not planned properly.
- During operation phase, there is no requirement for disposal of debris.

Wild Life

196. For selecting the sub-project locations, no wild life locations should not be included as far as possible during the field visits. Distance between National Park or Protected Areas and sub-project site should be defined and impact mitigation activities have to planned before approving the sub-project.

Impact on Aquatic Ecology

197. No significant impacts on aquatic ecology of the river are envisaged and will not have any impact due to sub-project activities.

6.3.2 Mitigation Measures Against the Impact on Human Environment

Traffic and Transport

198. During the construction phase, traffic disturbance needs to be minimized by avoiding heavy traffic hours, ensuring proper access roads and avoiding road blockage. Increase in vehicular traffic in the area is likely to be experience during construction phase of the building/facilities because of trucks ferrying in off construction material and carrying waste material from site. Following are the impacts likely to occur due to increased traffic:

- Increased number of vehicles on local roads will result in increased wear and tear of local roads thus reducing lifespan of affected roads.
- Pedestrians and cyclists using local roads will have to exercise more care with increase of vehicular traffic on the said roads.
- There will be an increase of exhaust emission from vehicles, which will pollute local atmospheric air.

199. The Construction Company may have to carry the construction material into the site at night or during least congestion period. So, the traffic related congestion and air pollution would be least affected in this case.

Health and Safety

200. Health and safety impacts will be in terms of risk of accidents and exposure to electric shock at the construction site. The construction company will provide necessary training regarding safety aspects to the personnel working at the project site. The workers should wear PPE (Personal Protective Equipment), safety goggles, and other necessaries during construction period and during the maintenance work. First aid facilities will be made available with the labor gangs and doctors called in from nearby towns when necessary. Article 16 of the National Constitution of Mongolia states that every employee has the right to "suitable conditions of work". The government adopted a National Program for Occupational Safety and Health Improvement in 2001 and national standards are also adopted such as the National Standard on Occupational Health and Safety MNS 5002:2000.

201. In addition, when construction work takes place in a public environment, safety measures are often lacking to protect the public. Project activities may create accidental damage to general public and the construction workers. Therefore, Construction Company should take necessary action to enhance personal safety during the construction through following measures:
    - Organize awareness programs relevant to personal safety of the workers and general public in the area;
    - Installation of warning signs to particular locations such as transverse points of local road network by sub-project site;
    - Provide protective safety belts, footwear, helmets, goggles, eye-shields and clothes to workers depending on their duty; and
    - Arrangement of proper first aid unit and transport facilities to take injured people to the hospitals.

202. Health and safety issues due to construction activities will be an issue for workers, students, teachers and others. Accident can happen occur during earth cutting, casting, construction works and installation of heavy machinery if care is not taken in their operation.

203. The whole work site will have to be fenced off and marked, so as to prevent the access of children and neighbors to the construction site. When land clearing is complete, the work area is finished, and facilities are in place, all of the above impacts and risks will be neutralized

Sanitation Hazard & Drinking Water

204. The health of the project personnel, construction workers and laborers at the site could be impacted if arrangement of sanitation and drinking water is not ensured adequately and properly. The project activities shall make higher demand on the local utilities and service facilities particularly construction and drinking water, health and sanitary facilities.

Emergency response during construction

205. The Construction Company must train its project personnel, construction workers and laborers, officials and staff of local administration to have knowledge of sufficient emergency response systems put in place. Fire safety management training and mock drill should be practiced periodically and emergency equipment and facilities like fire extinguisher/water hose, first aid etc. must be available to manage fire hazard or any medical emergency.

Temporary Outage of the Electricity

206. Temporary disconnection of power supply will occur during the construction activities. Thus, general public and the apartment dwellers, who live in the vicinity of the sub-project area, will face inconvenience for short periods of time. Thus, following measures will have to be taken:
    - Advance notice to the public about the time and the duration of the utility disruption, and
    - Restore the utilities immediately to overcome public inconvenience.

6.3.3 Mitigation Measures Against the Impact on Indigenous Peoples and Ethnic Minorities

207. The Indigenous People Policy is triggered because ethnic minorities are known to reside in three of the project aimags, viz. Bayan-Ulgii, Khuvsgul and Khovd, and could potentially be impacted by the project. However, at this stage, it is still unclear whether project interventions will take place in soums where these minorities live and whether project has direct impact on them, although the project will actively seek opportunities to benefit these people by designing meaningful activities that support Project's PDO. Specific safeguards instruments are not required as the impact on IP and associated mitigation measures have been incorporated in the ESMF. When designing these activities these ethnic minority people will be consulted in culturally appropriate manner including using their language.

208. Mongolia has nearly 30 ethnic groups, and some mongolized ethnic minorities including those of of proto-Turkic and Tungusic origins such as Kazakhs, Tuvans (Monchoogo), Tureg Uriankhais, Khotons, Sartuuls, Tsaatans (reindeer herders), Khamnigans and Khotgoid, Sartuul, Khoshuud, Ozbek, Kharchin, Tsakhar and others. Although, all the ethnic groups in Mongolia speak the dominant Mongolian language, they have some distinctive specifics in their language (dialects and accents), traditions and culture, comprising a unity of community of Mongol people. Ethnic groups are scarce in most provinces, although they do concentrate in some provinces. Khovd province accomodates the highest number of ethnic groups.

209. The largest representative of Turkic ethnicity residing in Mongolia is the Kazakh populace. In 1940, several tribes of Kazakhs sought refuge in Mongolia and Mongolian Government allowed them permanent residence in Bayan-Ulgii aimag. Now, Bayan-Olgii aimag has population of 93000 people, and 93.0% of them are Kazakhs and 7% are Tuvans, Uriankhais and Durvud. Furthermore, significant Kazakh population lives in Khovd soum (whole population), Uyench soum (2 baghs), Bulgan soum (40% of population) of Khovd aimag. The Tsaatan (Evenki) ethnic minorities dwell in northern soums of Khuvsgul aimag like Tsagaannuur, Renchinlkhumbe and Ulaan-Uul, Tuvans (Monchoogo) ethnic groups live in two bags of Tsengel soum of Bayan-Ulgii aimag.

210. The Kazakhs are not indigenous to Mongolia and Bayan-Ulgii province in particular, while Tuvans, Uriankhais and Durvud ethnic groups living in Bayan-Ulgii aimag are indigenous and disadvantaged minority groups, because of language constraints. Also, there are reportedly a few hundred Tuvans, Uriankhais and Durvud, and Tsaatan as numerical minorities in Bayan-Ulgii and Khuvsgul aimags, they are not likely to be effectively represented in existing governance structures. They are therefore disadvantaged in participation in stakeholder engagement activities.

211. The ESMF includes guidance on involving ethnic minorities i.e. inclusion of IP in project activities through consultations during implementation; ensuring the provision of culturally appropriate project benefits by using their language in the provision of services; measuring their inclusion to the project benefits/services including tracking their usage of animal health services, local disclosures, feedback loops, etc. informing and guiding project implementation

6.3.4 Mitigation Measures Against the Impact on Socio Economics

6.3.4.1 Impact on Agriculture and mitigation measures

212. No land acquisition is envisaged for the sub-projects. However, it is necessary to carry out detailed Socio-economic Survey to define the location and boundary of disease-free zones and compartment zones to clarify no need for land acquisition or involuntary resettlement in those areas.
213. The agricultural land which is used nowadays, influenced by many years' old mechanical soil processing technology (regularly balk-ploughing, to harrow by weeding harrow, hubbing etc.) and soil humus powder layer are moved by wind and water getting eroded.
214. All agricultural lands have lack of forest belt which would protect land from wind and water erosion, be cause of local farmers do not take specific measures to protect soil from wind erosion. Specially, most of project target aimag/soums are located in gobi-desert and steppe zone, there are high possibility that agricultural land of this region has less nutritious soil. Therefore, it required to make detailed analize of soil, to determine soil erosion category and soil humus level, nitrogen, phosphorous and potassium level and to take step-by-step measures of soil rehabilitation and protection from erosion.
215. Most cropping plots cover soil with light sandy mechanical structure, those soil have high probability on erosion. Therefore, it is important to establish field-protecting forest-belt around the cropping plots, use rotational cropping methods and stack straw bale, and utilize organic fertilizers like as sheep and goat manure systematically.
216. It is required to establish or improve existing irrigation system in order to protect agricultural land from dry wind, to enhance growth rate of agricultural plants, as well as to reduce soil erosion.
217. Also, it is required to determine soil nutritious parameters ones in every 3-4 years by specialized organizations and get recommendations. Most of agricultural lands soil affected to erosion intermediately or heavely and less supply of nutricious, so scientists recommend to use nitrogen fertilizer (34-35%-nitrogen content $КН_41ЧЮ_3$), phosphorous fertilizer (42-45%-content of phosphorous - $Ca(H_2P0_4)_2$), and potassium fertilizer (60%-content of potassium-КС1) by required norm. But, the capacity of pesticide management in rural Mongolia is inadequate. Therefore, it is important that LCP needs to promote the use of biological or environmental control methods, instead of reliance on synthetic chemical pesticides and does not need to support procurement of synthetic chemical pesticides. If project local stakeholders may be induced to use them in the project area, relevant requirements of the Pest Management (OP4.09) are applicable: e.g. (i) criteria for pesticide selection and use; and (ii) the World Bank requires that any pesticides will be used for project supported activities be manufactured, packaged, labeled, handled, stored, disposed of, and applied according to standards acceptable to the Bank.
218. The Bank does not finance formulated pesticide products that fall in WHO classes IA, IB and II listed in WHO pesticide category 2009 version, or formulations of products in Class U, II, III if (a) the country lacks restrictions on their distribution and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly. (A Pest Management Plan is prepared and included in this ESMF as Annex-1.)
219. Project aimags' ADFALI authorities are responsible for receiving and delivering of pesticide against grasshopper and chemical fertilizers, which will be used in those aimags, but they do not have appropriate storage facilities. Currently some ADFALIs store pesticide, chemical fertilizers and disinfection substances in car garages, normal rooms or in open fences and deliver it to soums. In used garage, do not have ventilation and other safety system, no temperature and humidity measurement unite, floor is made by concrete. Chemical substances stored on floor, no any segregation wall between substances, any sign and tags.
220. In chemical substances warehouses, substances should be stored in separate from floorboards with separate signs. Warehouse windows must be protected from direct sunlight. In warehouses ventilation and other safety system should be installed. Should be ready to use distinguisher,

sand, foam for fire. Shower facility should be connected into drainage system and clothing room should be available. Additionally, first aid kits should be available in case of emergency. Chemical substances should be located in distance from heating system, and boards should be separated. Chemical substance warehouse should be located more than 200 m from town and planted trees and bushes in surrounding area.

221. Proper storage and use of fertilizers are important for increasing crop yield, mitigating environmental pollution. Therefore, specific warehouse should be established in far from settlement, forest, river, spring side, with capacity depending on entities' fertilizer needs. Factory packed fertilizer should be stored on special wooden pallet protecting from rain and humid and until 2 m high from the floor. Widely used in our country fertilizers like Nitrogenous fertilizer (c^HTpa-NH_4N0_3) in 2 м, Phosphorous fertilizer (Double superphosphate-$Ca(H_2P0_4)_2$) in 1.75 м, Potassium fertilizer (Potassium chloride- KCl) also in 1.75 m high above floor level. (Please refer to Pesticide Management Plan in **Annex-1**.)

222. According to "Chapter 13.7 of Mongolian law on Hazardous Chemical Substances (2006)", "Guidelines on export, import, transboundary transportation, production and sale of hazardous chemical substances" (annex of joint ministerial order of Ministry of Nature, Environment and Tourism and Ministry of Foreign Affairs from 29 Dec 2008, # 92/90, item 3.1.1.5), "Guidelines on registration of chemical substances use and disbursement" (Annex 1 of #45 order of Ministry of Nature and Environment from 2000), will be organized measures for chemical substances use, disbursement and hazardous waste storage, disposal and registration.

223. During storage and disposal of chemical hazardous wastes, should follow guideline on "Guideline on registration and information of hazardous waste storage and disposal" (Order # 127 of Ministry of Nature, Environment and Tourism from 1 July 2003).

224. As stated on those legal documents, any entities importing hazardous chemical substances should submit report on chemical substances use and disbursement, to Ministry of Nature, Environment and Tourism by 25 January of next year, and report on hazardous waste storage and disposal to local governors' office, within 25th November of each year.

6.3.4.2. Impact on Pastureland and mitigation measures

225. There will be impact on grazing pressures, pasture degradation caused overconcentration of households and livestock around/near wells, veterinary facilities, milk processing units which may be established within sub-projects; Therefore, improving the pasture use system to introduce rotational use of pasture and support activities to protect and recover pastureland, introduce mechanisms for keeping proper numbers and structures of livestock in a herd, promote and encourage sustainable management of pastures are important to mitigate negative impacts.

226. 'Sub-project activities related to support breed improvement through establishing 'male flocks' and 'nuclleus flocks' covering herder households in particular area may be impact grazing pressure and pasture degradation. Therefore, to mitigate potential risk of overgrazing and pasture degradation, the project-involved soums should support the participatory definition of geographic Pasture Units of this flocks and their approval by the Soum administration, and the establishment, registration and training of herders included in Pasture Users Groups (PUG). The attribution of user and/or possession rights to the Groups would be part of the registration process.

227. Each PUG would draw up a Pasture Management Plan and annual activity plans in a participatory manner, ensuring involvement of poor households and women as well as local government Land Officers. Plans would be approved by the Soum administration and integrated in the Soum Land Use plans. The PUG would implement approved plans with technical and management support by Soum Government. Participatroy monitoring on a 6-month basis would be undertaken.

228. An essential part of the Pasture management plans would be seasonal rotation of grazing and resting of pastures to increase the productivity and quality of natural pastures. The process would be based on traditional cycles of seasonal use and resting of natural pasture. The project would

provide short-term technical assistance to formulate environmental awareness training materials and develop ecologically based pasture management guidelines with simple pasture monitoring indicators for staff and herder training. Members of PUGs would be trained and advised in the application of the guidelines in the implementation of their pasture management plans.

229. Access to water for livestock is essential to enable the utilization of pasture and an even distribution of water points is desirable for uniform pasture utilization and management.

230. The conservation of summer pasture for winter utilization in the form of standing hay or harvested hay is an essential part of winter preparation and disaster preparedness. The project aimag and soums would promote the designation and rehabilitation of hayfields by protection from grazing. The use of animal manure as fertilizer will be encouraged to improve hayfield productivity. Reserve pastures areas will be identified in the PUG pasture management plan and protected by "social fencing" through agreement of pasture users.

231. The disease-free zones and compartment zones have to have Management Plan which should include conservation objectives and outcomes, principles of collaborative natural resource management, community participation in pasture management, improve risk management capabilities against drought and Dzud and roles and responsibilities of stakeholders etc.

6.3.4.3. Impact on Employment, Settlement and Cultural sites, and mitigation measures

Impact on Local Employment

232. According to the reports from the Cabinet Office of Mongolia, the projects being implemented in rural area have positive impact on the local employment as these projects organize extensive capacity building activities and trainings for local herders and farmers. Construction of buildings/facilities will generate local employment, as number of unskilled laborers (both men and women) will be required at the time of construction activities. Local employment during this period will increase socio-economic standards.

233. As statistics show, employment of women is relatively less than men due to the nature of the sector. However, donor-funded projects specifically seem to have created positive impact on women competitiveness in rural area through their gender-interventions of the projects (NSO 2018).

Resettlement and Rehabilitation

234. For the construction of buildings/facilities, no land acquisition is required, hence there is no resettlement and rehabilitation involved in the project.

Cultural sites

235. The project will not affect any sites or locations of archaeological, historical or cultural importance. Neither will it affect recognized or registered national/provincial objects of cultural heritage and religious sites in project aimags under State and Provincial protection (**Please refer to Table 5.2**) as defined by the policy, since during the preparation of the subprojects, such sites will be screened out and excluded from the project. However, chance findings during construction work may occur and relevant clauses for chance findings will be included in all bidding documents and construction contracts under the project.

6.3.4.4 Waste management issues

Solid Waste Disposal

236. The solid waste generation will be at the location of the construction site which will include metal scraps, wooden packing material etc. Wooden waste and metal scrap will be collected and disposed of in compliance with applicable regulations and rules.

Sanitary Waste Disposal

237. The labor camps at the construction sites, meat, dairy and other processing units, laboratories will be will be near settlement area which may use some community or public facilities for solid waste, water and sanitation. Adequate drinking water facilities, sanitary facilities and drainage should be provided in above facilities to avoid the surface water pollution.

238. There should be proper solid waste disposal procedure to enhance sanitation of workers. Thus, possibilities of infecting water borne diseases or vector borne diseases (Parasitic infections) will be eliminated by adopting proper solid waste disposal procedure. Unacceptable solid waste disposal practices such as open dumping of solid waste and poor sanitation facilities will lead to pollution of surrounding environment, contamination of water bodies and increase adverse impact to the general public inhabited in the area. Surrounding of labor camps, garbage disposal sites and material storage yards provide favorable habitats for diseases. Improper dumping of spoil materials and solid wastes may cause environmental degradation of the school area and students, teachers and neighboring people will face problems like: bad smell, aesthetically unpleasant environment, diseases etc.

239. Thus, following measures are needed to protect and enhance the quality of environment during the construction stage:

- A better way to overcome garbage disposal as mentioned above by reducing or avoiding the construction of labor camps, thus the selection of majority of skilled and unskilled workers from the project influence area will be a proper measure in this regard.
- Proper sanitation system should be provided and at the same time, regular, proper and safe disposal of human waste should be ensured. Contractors and workers should obey appropriate means of waste removal and sanitation measures. Adequate number of toilets and bathrooms should be made for the workers, and proper disposal system (septic tank) of sewage waste should be implemented for sanitation purpose and the workers should be aware to use those facilities. Contractor/owner of processing units should provide adequate facilities to manage its wastes in accordance with the guidance given by the Mongolian law on Solid Waste and Law on Construction, and related regulations.
- Provision of the solid waste disposal, sanitation and sewage facilities at all site during the construction and operation phases to avoid or minimize health hazards and environmental pollution.
- Contractor should handle and manage waste generated from the construction/labor camps without contamination to natural environment and it will reduce risk to general public who stay close to sites. Also, Construction Company should be responsible to enhance the quality of environment.
- Adequate supply of water should be provided to the urinals, toilets and wash rooms of the workers' accommodation
- Contractor should provide garbage bins to all worker's accommodation and construction sites, for dumping wastes regularly in a hygienic manner in the area.

Liquid Waste Disposal

240. There will be no oil or chemical waste generated during the construction of Buildings/facilities, hence no mitigation is required.

Hazardous Waste Disposal

241. During the construction generation of any hazardous waste generation is not expected. During the operational period, asbestos, batteries, and solar panels (if used), wasted chemicals would constitute waste material that needs to be disposed of as per Mongolian law on Solid Waste and regulations and guidelines related to Hazardous Wastes.

6.3.4.5 Occupational Health and Safety

242. The IFC and WB's Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). The Environmental, Health and Safety Guidelines for Dairy Processing, Meat processing, Mammalian Livestock Production and Annual Crop production will be applied for occupational safety framework of the Livestock Commercialization Project.

243. These industry sector EHS guidelines are designed to be used together with the General EHS Guidelines document, which provides guidance to users on common EHS issues potentially applicable to all industry sectors. For complex projects, use of multiple industry-sector guidelines may be necessary. A complete list of industry-sector guidelines can be found at: www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines

244. During the operation phase of the project the Occupational Health and Safety hazards will be associated with above sectors of production and the Table 6.2 can explain the hazards and recommendations for mitigation measures need to be handled according to above EHS Guidelines.

Table 6.2 Occupational Health and Safety hazards and recommendations for mitigation measures

Production sectors	Occupational health/safety hazards	Recommendations and Measures for Occupational health and safety controls
Annual Crop production	Physical hazards	Occupational safety and health impacts and controls relating to equipment and vehicle operation and repair are discussed in the General EHS Guidelines.
	Confined space entry	Occupational health and safety hazards associated with confined spaces on farms (e.g.manure pits, silos, grain bins, water tanks, or inadequately ventilated buildings) include the risk of asphyxiation, primarily due to the accumulation of methane. Entry to all confined spaces should be restricted and should be subject to permitted supervision by properly trained persons as described in the General EHS Guidelines.
	Chemical hazards	• Train personnel to apply pesticides and ensure that personnel have received the necessary certifications, or equivalent training where such certifications are not required; • Respect post-treatment intervals to avoid operator exposure during reentry to crops with residues of pesticides; • Respect preharvest intervals to avoid operator exposure to pesticide residues on products during harvesting; • Ensure hygiene practices are followed (in accordance to FAO and PMP) to avoid exposure of family members to pesticides residues. • Use local air extraction devices at dust-generating equipment, such as tipping pits, elevators, open conveyors, hoppers, silos, dryers, and scales; • Equip threshing machines with a cab and ventilator;• Store only dry grain (and dry, well-cured forages and hay) to reduce microorganism growth.
	Risk of fire and explosion	Grain storage elevators present a risk of explosion given the presence of powdered grain and the potential for explosive atmospheres. Potential ignition sources for the grain dust may include the mechanical malfunction or deterioration of concentrators, including seizing of roller bearings. Among the recommended methods for prevention of explosions in grain storage facilities are the prevention of accumulation of grain dust through maintenance and repair of dust control systems and the maintenance of grain elevator equipment.
Mammalian Livestock Production	Exposure to physical hazards	The following management measures specific to mammalian livestock production may reduce the risk of accidents and injuries: • Ensure that all underground manure storage tanks and lagoons are properly covered and fenced off at a sufficient height; • Store liquid manure (e.g. in barn pits, pumping stations, storage tanks, and application tankers) to minimize release of dangerous gases (e.g hydrogen sulfide); • Design pens, gates, and chutes to facilitate movement of livestock and reduce the need for farm workers to enter pens; • Instruct staff in correct livestock care, to reduce the incidence of bites and kicks.
	Exposure to chemical hazards	• Train personnel to apply pesticides and ensure that personnelhavereceivedthenecessarycertifications,[27] or equivalent training where such certifications are not required; • Respect post-treatment intervals to avoid operator exposure during reentry to crops with residues of pesticides;

		• Respect preharvest intervals to avoid operator exposure to pesticide residues on products during harvesting; • Ensure hygiene practices are followed (in accordance to FAO and PMP) to avoid exposure of family members to pesticides residues.
	Exposure to biological agents	Management measures that can be taken to avoid the negative consequences of worker exposure to biological agents include the following: • Inform workers of potential risks of exposure to biological agents and provide training in recognizing and mitigating those risks; • Provide personal protective equipment to reduce contact with materials potentially containing pathogens; • Ensure that those who have developed allergic reactions to biological agents are not working with these substances.
	Confined spaces	Occupational health and safety impacts associated with confined spaces associated with mammalian livestock operations (e.g. manure pits, silos, grain bins, water tanks, or inadequately ventilated buildings) are common to most industries, and their prevention and control are discussed in the General EHS Guidelines.
Meat processing	Physical hazards	• Providing workers with training in the proper use of cutting equipment (including the proper use of machine safety devices) and personal protective equipment (PPE) such as metallic gloves and leather aprons for cutting activities; • Ensuring that ritual slaughter is carried out by individuals who have received the correct training and have subsequently been approved to slaughter animals; • Designing a proper slaughterhouse floor that is slip-proof when wet. • Training workers in proper live animal handling methods including the use of structures and equipment for handling and restraining animals; • Designing appropriate pen / lairage / livestock yards such that the animals can be calmly moved into the facility, and which allows for escape routes for the workers; • Conducting stunning of cattle in a controlled setting (e.g. stun-box).
	Biological hazards	• Avoiding dust and aerosol generating activities (e.g. use of compressed air or high pressure water for cleaning) and where they cannot be avoided providing proper ventilation of enclosed or semi-enclosed areas to reduce or eliminate exposure to dust and aerosols; • Providing workers with PPE that is appropriate for the activity (e.g. protective clothing, gloves and masks) for workers in intestine and stomach cleaning operations; • Ensuring physical segregation of work and welfare facilities to maintain worker personal hygiene; • Designing holding areas for detained animals and high-risk materials to avoid direct contact with workers and ensuring that all waste materials, including those from rejected animals, are removed daily.
	Chemical hazards	• Take precautions (as described in the General EHS Guidelines) when handling and storing detergents and disinfectants. Chemicals should not be stored or transported with food or beverages, and should be secured in a locked and clearly identified area; • Prevent seasonal and other temporary workers from working with chemicals until they have been fully trained; • Provide respiratory protection and impermeable clothing for use during disinfection of pens and lairage areas.
	Exposure to heat, cold and radiation	Workers may be exposed to fluctuating internal climatic conditions, including heat and radiation from scalding, singers, brushing, black scrapers, and flame off, and cold from refrigerated rooms. Recommendations for the management of these hazards can be found in the General EHS Guidelines.
	Exposure to sources of noise	Occupational noise and vibration exposure sources include electrical stunning of pigs, electric saws, steam, condensers, ventilation, banging of equipment, and pressurized air equipment. Recommendations for the management of noise and vibration hazards can be found in the General EHS Guidelines.
Milk processing	Physical hazards	• Maintain walking and working surfaces clean and dry and provide workers with antislip footwear; • Provide workers with training in the proper use of equipment (including the proper use of machine safety devices) and personal protective equipment (PPE), such as hearing protection; • Ensure that the process layout reduces opportunities for process activities to cross paths, thus avoiding collisions and falls; • Demarcate transport corridors and working areas and ensure the proper placement of handrails on platforms, ladders, and stairs; • Ground all electrical equipment and installations in wet rooms.

	Biological hazards	• Avoid dust- and aerosol-generating activities (e.g. use of compressed air or high-pressure water for cleaning) and, where they cannot be avoided, provide proper ventilation of enclosed or semi-enclosed areas to reduce or eliminate exposure to dust and aerosols; • Install exhaust ventilation equipped with filters and / or cyclones, at sources of dust; • Provide workers with PPE that is appropriate for the process activity; • Ensure physical segregation of work and welfare facilities to maintain worker personal hygiene; • Avoid direct contact with non-conforming dairy products.
	Chemical hazards	• Exposure to chemicals (including gases and vapors) typically involves chemical-handling activities related to cleaning operations and disinfection of process areas, in addition to the maintenance of heating (thermal oils) and cooling systems (ammonia). Recommended measures to prevent and control exposure to chemicals are discussed in the General EHS Guidelines.
	Exposure to heat, cold, and radiation	Workers at dairy processing facilities may be exposed to heat from process activities and to cold in refrigeration areas and rooms. Recommendations for the management of exposure to heat and cold are presented in the General EHS Guidelines.

Woker Safety during the Construction and Operation

245. To prevent accidents and exposure to electricity shocks during constructions and operations, the Construction companies or owners or management of dairy and meat processing factories/units should regularly provide training to workers and need to follow Mongolian national OHS standards, which requires basic protections such as necessary protective equipment. Please refer to WBG EHS Guidelines for annual crop production, livestock production, diary processing and meat processing industries and above **Table 6.2** for preventing accident and exposure during the operation period of meat and dairy processing units.

Community Health and Safety

246. Community health and safety issues associated with the construction and decommissioning of livestock production facilities are similar to those of other large projects and are addressed in the General EHS Guidelines. Community health and safety hazards specific to mammalian livestock operations include the potential spread of animal diseases already addressed in this document as well as the following food safety issues.

Food Safety Impacts and Management

247. Routine treatment of animals with antibiotics may result in antibiotic-resistant microorganisms in the intestinal tract of treated animals. Potential routes for infection of humans are the consumption of contaminated meat or water or of food contaminated by manure. People living near the farm may also be at risk of infection. Residues of feed additives and contaminants may also be present in meat and dairy products.

248. Measures to mitigate environmental and occupational safety and health also will reduce potential risks to the community. Additional management measures that can be taken to prevent any detrimental effects on the community include the following:

- Banned chemical and biological substances in mammalian livestock production should not be used;
- Avoid application of solid or liquid manure directly onto grazing areas or edible crops .

249. Concerning risks to community health and safety from the ingestion of hazardous substances in beef, milk, and pork, the FAO/WHO Codex Alimentarius provides guidance on veterinary drug residues (such as growth hormones) and pesticide residues and provides official Codex standards for dairy and meat products, such as cheese and ham. For example, the Codex contains 147 maximum residue limits (MRLs) for veterinary drugs in cattle tissue (including milk), as well as MRLs for pesticide residues in cattle and pig tissue. The following actions should be taken at the system level to ensure the proper use of veterinary drugs:

- Facilities involved in livestock production should use a veterinary service on an annual

or more frequent basis to review and assess the health of the stock and employees' competence and training. With the assistance of the veterinary service, facilities should develop a Veterinary Health Plan to include the following aspects:

- Summary of major diseases present and potentially present;
- Disease prevention strategies;
- Treatments to be administered for regularly encountered conditions;
- Recommended vaccination protocols;
- Recommended parasite controls; and
- Medication recommendations for feed or water. If antibiotics are recommended, the following measures should be considered:
- Apply approved over-the-counter antibiotics in strict accordance with the manufacturer's instructions to ensure responsible and correct use;
- Apply approved antibiotics that are purchased and utilized on prescription under the guidance of a qualified professional; Make a contingency plan covering how
- antibiotics should be applied following the identification of disease outbreaks;
- Store antibiotics in their original packaging, in a dedicated location that:
    - ✓ Can be locked and is properly identified with signs, with access limited to authorized persons
    - ✓ Can contain spills and avoid uncontrolled release of antibiotics into the surrounding environment
    - ✓ Provides for storage of containers on pallets or other platforms to facilitate the visual detection of leaks
- Avoid stockpiles of waste antibiotics by adopting a "first-in, first-out" principle so that they do not exceed their expiration date. Any expired antibiotics should be disposed of in compliance with national regulations.

Animal Diseases

250. Animal disease-causing agents can spread rapidly, especially in intensive livestock operations. Animal diseases can enter a facility with new animals, on equipment, and on people. Some diseases can weaken or kill large numbers of animals at an infected facility. In some cases, the only remedy available to an operation is to sacrifice an entire group of animals to prevent the spread of the disease to other parts of the facility or to other facilities. The procedures to protect against the spread of animal diseases will depend on the type of animal at a facility, the way the diseases of concern spread to and infect animals, and the vulnerability of the animals to each specific disease.

251. The key to developing adequate disease-prevention procedures is to find accurate information about animal diseases and how to prevent them. Some of the recommended general types of management methods to reduce the potential for the spread of animal pathogens include the following:

- Control farm animals, equipment, personnel, and wild or domestic animals entering the facility (e.g. quarantine periods for new animals, washing and disinfecting crates, disinfection and coverage of shoes before entry into livestock zones, providing protective clothing to personnel, and closing holes in buildings to keep out wild animals);
- Vehicles that go from farm to farm (e.g. transport of veterinarians, farm suppliers, buyers, etc.) should be subject to special precautions such as limiting their operation to special areas with biosecurity measures, spraying of tires and treating parking areas with disinfectants;
- Sanitize animal housing areas; Identify and segregate sick animals[25] and develop management procedures for adequate removal and disposal of dead animals).

6.3.4.6 Environmental Impact Mitigation Measures during Operation of meat, dairy processing

252. If operating according to the design, the meat, dairy processing units, veterinary facilities, intensive livestock farms and laboratories will not cause environmental impacts, although some, such as odor, are inevitable. However, in order for the site operation to be effective, the management of processing units, labs are expected to develop appropriate operation and maintenance (O&M) procedures to ensure the budget for O&M is available and that the staffs are knowledgeable about the role they need to play in O&M. The O&M procedures will cover all operational aspects of the site including:
    - All stages of wastewater treatment
    - Sludge/dung management
    - Site maintenance including a preventative maintenance program
    - Environmental analysis (effluent, sludge, water analysis)
    - Solid waste management (containment, storage, transport, disposal) and
    - Other aspects appropriate to the site operation.

6.3.4.7 Measures to improve Animalwelfare in Livestock Operations

253. The animal welfare will be recognized in importance in commercial livestock operations within the LCP. National and local Governments, livestock husbandry institutions, and herders and other project stakeholder should address animal welfare at different points in the agricultural supply chain, while consumers are demanding higher standards for food safety and animal welfare. Therefore, MOFALI and its PIU, aimag ADFALI and soum LBVS units will apply the IFC's guidance on acceptable animal welfare practices.
254. LCP will support livestock-based businesses that address or enhance animal welfare are likely to win or retain a competitive advantage in the global marketplace by:
    - reducing costs due to improved human-animal relationships and other welfare benefits, which can lead to increased productivity;
    - realizing growing market opportunities for food produced in animal welfare-credentialed systems; and/or
    - becoming the producer of choice for retailers and consumers concerned with animal health and welfare, food safety and quality, human health, and the environment. IFC is committed to working with clients to reduce losses, increase productivity, and/or access new markets through the application of sustainability principles, including animal welfare standards. This Good Practice Note (GPN), which supersedes the 2006 edition, contributes to IFC's continued commitment to supporting clients in a responsible and forward-looking approach to traditional livestock production (dairy, beef, broiler chickens, layer chickens, pigs, and ducks) and aquaculture in intensive and extensive systems to, among other things, help producers access and maintain entry to high quality and value market segments. This GPN describes a range of animal welfare good practice and complements IFC's Performance Standards on Environmental and Social Sustainability (2012), in particular animal husbandry requirements for IFC clients as reflected in Performance Standard (PS)6: Biodiversity Conservation and Sustainable Management of Living Natural Resources. The Note also describes IFC's approach to animal welfare, including details on IFC's approach to due diligence.
255. Measures of animal welfare include behavior and physiology, productivity, reproductive success, mortality rates, and incidence of injury and disease. Attention to animals' housing, food, water, and health can improve their welfare, their productivity, and profitability. Productivity should be assessed in conjunction with other measures to ensure that animal welfare is appropriately addressed and managed.
256. The LCP will focus not only on productivity of livestock but also concern to develop good animal welfare conditions. Therefore, herders, farmers and enterprises should follow following principles referred to as The Five Freedoms underpin international dialogue on animal welfare and are reflected in guidelines, recommendations, codes, and legislation prepared by countries

of Asia, Australasia, the European Union, and North America, and by the OIE, to address animal welfare issues.

1. Freedom from hunger and thirst, by ready access to fresh water and a diet to maintain full health and vigor.
2. Freedom from discomfort, by providing an appropriate environment including shelter and a comfortable resting area.
3. Freedom from pain, injury, and disease, by prevention or rapid diagnosis and treatment.
4. Freedom to express normal behavior, by providing sufficient space, proper facilities and company of the animal's own kind.
5. Freedom from fear and distress, by ensuring conditions and treatment that avoid mental suffering.

257. These Five Freedoms are aligned with actions to improve animal welfare on farm, in transit, at market, and at a place of slaughter. These actions provide a comprehensive framework to guide welfare assessment, and indicate the steps for effective welfare management within the proper constraints of a responsible livestock industry.

258. As an intergovernmental organization, the OIE has a global mandate to improve animal health, animal welfare, and veterinary public health. OIE standards have become the *de facto* international reference for animal welfare in the trade of animals and their products in developed and developing markets. OIE standards act as a guide for the development of assurance programs, and it is envisaged that they will be increasingly used as a basis for bilateral agreements between OIE member countries.

259. All 180 member countries, ranging from the UK to China, Uganda, and Ukraine, adopted OIE's 14 global animal welfare standards: 10 standards in the *Terrestrial Code* and 4 standards in the *Aquaculture Code*. In 2012, the OIE members adopted *11 General Principles for the Welfare of Animals in Livestock Production Systems*. OIE standards may be particularly useful in Mongolia to develop animal welfare frameworks.

260. Followings are the OIE's General Principles for the Welfare of Animals in Livestock Production Systems:

1. Genetic selection should always take into account the health and welfare of animals.
2. Animals chosen for introduction into new environments should be suited to the local climate and able to adapt to local diseases, parasites and nutrition.
3. The physical environment, including the substrate (walking surface, resting surface, etc.), should be suited to the species so as to minimize risk of injury and transmission of diseases or parasites to animals.
4. The physical environment should allow comfortable resting, safe and comfortable movement, including normal postural changes, and the opportunity to perform types of natural behavior that animals are motivated to perform.
5. Social grouping of animals should be managed to allow positive social behavior and minimize injury, distress and chronic fear.
6. For housed animals, air quality, temperature and humidity should support good animal health and not be aversive. Where extreme conditions occur, animals should not be prevented from using their natural methods of thermo-regulation.
7. Animals should have access to sufficient feed and water, suited to the animals' age and needs, to maintain normal health and productivity and to prevent prolonged hunger, thirst, malnutrition or dehydration.
8. Diseases and parasites should be prevented and controlled as much as possible through

good management practices. Animals with serious health problems should be isolated and treated promptly or killed humanely if treatment is not feasible or recovery is unlikely.

9. Where painful procedures cannot be avoided, the resulting pain should be managed to the extent that available methods allow.
10. The handling of animals should foster a positive relationship between humans and animals and should not cause injury, panic, lasting fear or avoidable stress.
11. Owners and handlers should have sufficient skill and knowledge to ensure that animals are treated in accordance with these principles.

6.3.5 Methodology for sub-project and it's site selection: environmental view

261. Site selection will consider requirements of environmental parameters, availability of logistic support during construction, operation and maintenance of sub-project building/facilities and specific feasible locations that were identified based on the relevant site maps and walkover surveys.

262. For selection of appropriate site for Building/Facilities, the following points are taken into consideration:

- Site selection should consider seismicity and geography of the local area; the area should not be prone to landslide or be unstable.
- Construction activities do not adversely affect the population living near the proposed building/facilities and does not create any threat to the survival of any community with special reference to herder community etc.
- The location of building/facilities does not affect any monument of cultural or historical importance.
- No resettlement of households by the building/facilities site, no loss of livelihoods, siting of building away from sensitive receptors with due consultation with the community and local government units concerned.
- Construction techniques and machinery selection shall be made with a view to minimize ground disturbance.
- While planning for building/facilities, all underground infrastructure – drainage, sewage heating etc. shall be marked and to avoid seepage/leakages and pollution of water sources.
- Construction Company to ensure that noise will not be a nuisance to neighboring properties. Provision of noise barriers near building/facilities sites will be made if required.
- Security fences will be erected around building/facilities construction sites. Warning signs shall be displayed at site and road signs to be installed at appropriate locations.
- MOFALI shall incorporate the best technical practices to deal with environmental issues in its working.
- Design of building/facilities shall be made so as to include modern fire control systems/firewalls. Provision of fire-fighting equipment would be made at locations easily accessible etc.
- The location of building/facilities does not affect any public utility services like power, heating and gas lines, sewage and drainage pipes other underground structures such as pipelines and unstable ground feature (permafrost etc.). etc.
- Minimum cutting of trees and safety of people and property and favorable ground profile.
- Avoidance of reserved forest, archaeological and other sensitive areas, animal/bird protection areas.
- Avoidance of rocky stretches and areas reserved for planned and future development, marshy low-laying areas, riverbeds and earth slip zones.
- The blue print of design to ensure no shadow of the proposed new buildings should fall on to adjoining buildings in keeping with building bye-laws and Construction law of the Mongolia.

- Good construction practices will be adopted to ensure minimal disturbance to affected persons from construction related nuisance, such as noise, dust and pollutant emissions.

263. The contractor will submit site-specific management plans for the key activities, which will also require the contractor to develop appropriate maps to ensure all stakeholders are clear on where activities will take place. These specific activities are:

A. Spoil and Borrow Site Management;
B. Solid and Liquid Waste Management;
C. Community and Occupational Health and Safety and Emergency Response; and
D. Construction Workers Camp Management (if required).

264. The LCP is proposed to be category B hence the sub-projects with following characteristics to be potential to category A project will be not eligible. No significant adverse impacts that are sensitive, diverse, or unprecedented, or that affect an area broader than the sites or facilities subject to physical works.

265. Keeping above in mind, various sub-projects would be proposed by MOFALI officials for funding would be taken up for initial assessment of environmental impacts. Similarly, MOFALI is responsible for assessing the status of lands that are available for proposed building/facilities at aimag and soum level to avoid from land acquisition problem.

6.3.6 Summary of Impacts

266. Potential environmental impacts (both positive and negative) associated with all project phases were identified in this section is illustrated by the following Table 6.2. Most of the minor, temporary adverse environmental impacts relate to the building construction process, and can be relatively easily mitigated with standard best practices that are increasingly being required of the construction industry. **Table 6.2-Table 6.5** provide summary analysis of projects impacts during the construction and operation phases of sub-projects.

Table 6.3. Classification of impacts caused by subproject activities

Type of impacts / Environmental and behavior changes	Type of impact			Term of the impact		Level of the impact		
	Direct	Indirect	Self adjusting	Short term	Long term	High	Moderate	Low
1.Changes and impacts on natural contents								
Changes in Plant association		+			+		+	
Soil erosion and degradation				+			+	
Loss of wildlife habitat		+			+			+
Changes in micro-climate		+			+		+	
2.Changes and impacts on Natural resources								
Land	+				+		+	
Pasture	+			+			+	
Mineral resources		+			+			+
Energy resources			+		+			+
3. Impacts on environmental quality								
Surface water quality and amount		+			+			+
Changes in surface water		+		+				+
Quality and amount of underground water		+			+			+
Air pollution		+			+		+	
Soil/land pollution and erosion	+			+			+	
Changes in micro-fauna of soil and soil to be salted		+			+		+	
Water pollution	+			+				+

4.Impacts on Natural features and historical sites								
Changes of natural beauty	+				+		+	
Changes of landscape		+			+		+	
Negative impact on historical sites			+	+				+
Negative impact on archeological and paleontological findings			+	+				+
5.Impacts on socio-economy								
Changes in private properties and tax income	+			+			+	
Build capacity at local level	+				+	+		
Increase in local income	+				+	+		
Contribute to poverty alleviation	+				+		+	
Increase of working places	+				+	+		
Negative impact on human health		+		+				+
Dicrease of livestock disease	+				+	+		
6. Other impacts								
Creating new unplanned branches of dirty roads on the pastureland	+				+		+	
Influence to change traditional custom of nomadic lifestyle.		+			+			+

Remark: Potential negative and positive impacts are included.

Table 6.4 Evaluation of negative impacts by subproject activities to the environment.

#	Affectable Environmental Contents	Evaluation of impacts from main activities would be supported within the project (scored by 1-10)							Total score
		Use of pesticide and chemical fertilizers	Intensive forms of livestock production	Improve water supply (Drilling new wells)	Improved fodder and forage production	Small scale construction activities (e.g. livestock sheds, dairy farm, meat processing unit, livestock facility, dipping crop/pastureland fencing)	Improve quality and production of livestock	Improve livestock health	
1	Air	4	2	1	3	5	2	5	**22**
2	Soil	10	7	1	9	6	1	5	**41**
3	Land/pasture	5	7	5	5	3	4	3	**32**
4	Plant	5	4	1	3	3	2	5	**23**
5	Underground water	1	1	3	3	5	2	2	**17**
6	Surface water	7	7	1	8	7	5	8	**43**
7	Wildlife	6	2	10	9	1	1	1	**30**
8	Livestock	7	1	1	1	3	1	1	**15**
9	Human health	10	2	1	1	4	3	2	**23**
10	Natural features	2	5	2	8	8	5	3	**33**
	TOTAL	**57**	**38**	**26**	**50**	**45**	**26**	**35**	**279**

Table 6.5 Summary Analysis of Positive and Adverse Impacts:

1	Project Activities	Positive Impacts (Type)
A	Pre-Construction	
i	Increasing local businesses	Local business will be enhanced due to the construction activities in the area. Local construction companies will be contracted. (Temporary)
B	Construction	
i	Employment	Employment opportunity to local population. (Temporary)
C	Operation	
i	Socio-economic impact	Development of veterinary, agricultural production facilities will help nomadic population in the country to improve their products for better value chain and thereby may develop the society and neighborhood. (Permanent)

ii	State of Art new facilities	Most have old veterinary building and facilities are between 40-50-year-old buildings having inefficient heating, electricity, rusted water and inadequate sanitation. (Permanent)
2	**Project Activities**	**Adverse Impacts (Type)**
A	Pre-Construction	
i	Site Access	Loss of access to the disease free and compartment zones for other nomadic herders. (Permanent)
ii	Site preparation, clearing and earthworks	Clearing of vegetation, trees; land development may create problems in local drainage pattern; emission of dust, Improper management of construction debris and solid waste, sewage water may pose risk to the virgin area and others; (Temporary). Reduction in visual aesthetics at site, access to natural resources, truck traffic, construction equipment and permanent building (Permanent).
B	Construction	
i	Influx of workers	Health & safety of workers at site may pose to risk; concentration of labor force creates un-hygienic condition and sanitation hazard (Temporary).
ii	Construction equipment / materials	Brick/stone crushing and equipment installations may create noise; carrying of construction materials may create traffic congestion; cutting/filling, stockpiling of construction material and traffic movement may create dust emission, improper management of construction debris and solid waste may pose risk to the workers and residents (Temporary).
iii	Vehicle and pedestrian traffic	More congestion near the soum centers to the; increased number of vehicles on local roads will result in increased wear and tear of local roads thus reducing lifespan of affected roads; pedestrians to exercise care with increase of vehicular traffic on the adjacent roads and increase of exhaust emission from vehicles (Temporary).
C	Operation	
i	Increase of human and livestock concentration adjacent to new established facilities, processing factories	Slightly more congestion near the new zones, processing facilities; Local herders to exercise more care with increase of number of households / livestock close to new facilities, infrastructures; increase of emission of livestock excreta from farms, which will pollute local area (Permanent).
ii	Generation of consumables	Improper solid waste management, sanitation hazard. (Temporary)
iii	Increased demand on local services	Increased risk of pastureland, water shortages and electricity load shedding in local area. (Permanent)
iv	Extreme climate events, disasters and emergency	Mongolia has harsh continental climate with sharply defined seasons, high annual and diurnal temperature fluctuations and low rainfall. Therefore the pasture and croplands have strictly defendant to climate condition and vulnerable to climate change. Drought, dzud, fire hazard, pasture, land degradation or any medical emergency may arise due to improper operation of the sub-projects. (Permanent)

Impacts on key environmental parameters (Air, water, soil and Noise)

267. The Table 6.5 below lists impacts on environment parameters of the sub-project areas where the project will be implemented.

Table 6.5: Impact of key environment parameters

#	Environmental Parameter	Type of Impact	Reason	Proposed Mitigation Measures
1	Air Quality	Low	Insignificant air emission from the construction activity except during stacking/storage of soil, construction material at site	Sprinkling of water, proper handling of excavated soil, construction material, banned substances/VOCs etc.
2	Water Quality	Low	The project will require small quantity of water for construction. No hazardous	The required water will be sourced from tankers by the construction company.

#	Environmental Parameter	Type of Impact	Reason	Proposed Mitigation Measures
			effluent is envisaged to be discharged during construction and operation	Domestic effluent shall be discharged in holding tanks or sewege system which will be cleaned regularly and waste thrown at urban body's solid waste management site.
3	Soil Quality	Low	Land is available-has open/vacant areas within the sub-project sites and government will regulate land for new facilities.	Construction company to ensure proper housekeeping, sanitation and cleanliness at work site. Owners and operators of new facilities or projects subject to take care sanitation and protection of soil quality.
4	Noise Quality	Low	The construction activity may lead to noise pollution during concreting –steel cutting, bending, casting using vibrators, operation of mechanised equipment and drills etc. that will affect the residents of the area. Small noise related installations within shell structure may continue during short period of time.	Noise monitoring will be done at regular intervals. If any night construction activity that is noise intensive is undertaken, neighbourhood must be consulted to determine suitable timings.
5	Hazardous Substance – eg. Asbestos, VOCs	Minimal	The sub-projects will not impact the other buildings or stakeholders	Sections of buildings, if they contain any hazardous material will not be selected for improvement actions.
6	Terrestrial Ecology	Low	No ecologically sensitive places (protected area/reserved forest/Important flora and fauna species) will not locate within 3-5 km radius from each sub-project site.	Tree replantation / transplantation to be carried out arround the sub-project site if any trees are cut by the construction company. Any activities related to operation of sub-projects will be regulated by relevant laws and regulations.

7. PROCEDURES TO ADDRESS ENVIRONMENTAL AND SOCIAL IMPACTS

268. The PIU of MOFALI is responsible for managing environmental and social risks during the implementation of the LCP. Specially, for monitoring and making sure that the subproject complies with the ESMF, World Bank safeguards policies and the permitting and other regulatory requirements of the Government of Mongolia.

269. LCP Components 1 and 2 will invest in activities for supporting animal identification and traceability from herders and producers to processors. All project activities under this component, including institutional and capacity building, disease surveillance and control and food safety, the digital livestock interventions, and participatory animal health risk management initiatives, will also strengthen climate adaptation mechanisms, enhancing the resilience of Mongolia's livestock system against adverse climate change events.

270. The project activities under this component, including extension, research, service delivery relating to animal breeding and related climate smart practices, and animal nutrition-related activities, will not only enhance herders and herder groups adaptation mechanisms to increased climate risks, but they also have climate mitigation potential. The expected project outcomes, including improved livestock productivity and access to markets, will contribute to an increase in

the livestock offtake rate. This will have implications for destocking of livestock (that is, herders will be encouraged to move from a quantity-centered to a quality-centered production system), which in turn contributes to GHG emission reduction and an improvement in pastureland that increases the land-based carbon sequestration.

271. The project will encourage interventions related to mobilizing herders/herder organizations; improving breeding services delivery; organizing food and livestock processing clusters; improving the cost and product competitiveness of livestock and agriculture products, particularly milk and meat; increasing market access by herders/producers; introducing advanced technologies for intensive food production systems; and increasing domestic supply/exports of healthy and safe food products.

272. All activities to be financially supported within LCP should be set out in Environmental Management Plans of sub-projects, and Veterinary Service Action Plans, activities relevant for improving pasture management, intensive livestock farming, fodder and forage planting have to be reflected in Pasture Management Plan, and in EMP of farms and fodder/forage planting.

273. Activities listed in this management and action plans may have adverse impacts on the environment, local population, cultural resources, or workers involved in their implementation, or the climate. All sub-projects shall be screened for environmental, social and climate risks, and (where required) environment management plans will be developed and implemented to avoid, minimize or mitigate potential adverse impacts.

274. **Planning for environmental and social safeguard measures: Annex 4** presents an initial safeguards screening form to be used to assess whether any sub-project activities proposed in project annual work plans may require planning and budgeting of additional safeguard measures (e.g. social or environmental impact assessments). This initial screening tool will be applied by the PIU as part of the annual planning procedures to ensure that activities required under the ESMF are planned and budgeted for.

275. Environmental and social risk screening: For specific proposals for any activity contributing to Components 1, 2 or 3 of the project, the proponent (e.g. aimag level ADFALI, veterinary service, meat processors or other applicant for grant funds) shall complete the Environmental and Social Review Form (ESRF) presented in **Annex 4**. The purpose of the documentation form is to identify potential risks associated with specific project activities and to identify additional assessments and environmental or social sub-plans required by ESMF or by national law that must be implemented before funding for the sub-project can be approved. The ESRF is submitted by the project proponent (e.g. ADFALI, Disease Free and Compartment zone management, Vet Service or other proponent) and reviewed by the national PIU's Environmental Specialist before review and endorsement by the national Project Coordinator.

276. The environmental and social screening process is designed to align with and supplement national environmental assessment laws. The relationship between the environmental, social screening and in-depth assessment procedures and Mongolia EIA process is shown below in **Table 7.1.**

Table 7.1: LCP's environmental, social screening and in-depth assessment procedures

(in relation to the national EIA process)

Steps	**LCP's ESMF**	**Mongolia EIA requirements**	
		PIU / MOFALI	**MET, ADET**
Step 1: Screening & categorization	Fill in ESRF, confirm and approve category	Prepare documents to submit for GEIA	Condact GEIA, inform PIU on categorization
Step 2: Prepare for ESIA	If category B, DEIA not required by law	If DEIA required, develop ToR and engage qualified consultant through selection.	
Step 3: Conduct ESIA	Conduct ESIA	Conduct DEIA	

Step 4: Review, approve and disclose	Review and approve EIA report	Submit ESIA report to MET	Review and approve DEIA report, provide the approval to PIU
	Disclose EIA report	Disclose EIA report	

7.1 In-depth assessment and EMP preparation

277. The results of environmental, social and climate screening shall indicate the follow-up actions required for sub-projects categorized as Category B. An in-depth assessment of adverse environmental, social and climate impacts and risks is obligatory for sub-projects categorised as Category B. Project impacts that would lead to a sub-project being categorized as Category A make the sub-project ineligible for funding. For LCP such project impacts include:

- Construction of any infrastructure that results in economic or physical displacement;
- Any sub-project that would result in physical displacement of 200 or more individuals;
- Any sub-project that would result in economic or physical displacement of 1000 or more individuals.

See the project exclusion list in Table 2 of **Annex 5** for Environmental, Social Assessment procedures.

278. Where national law requires that a general EIA is conducted, on the basis of the information provided in the ESRF, the project proponent shall prepare for the relevant sub-project components:

- a brief description of the project;
- the feasibility study;
- the engineering design and drawings (if appropriate);
- baseline description of the proposed project environment;
- a written opinion of the relevant soum governor and other related documents (e.g. protected area or buffer zone management plan).

These documents will be reviewed by the national PIU's ES and submitted to MET for review and determination in accordance with national procedures for general EIA.

279. Where national law or the determination by MET/ADET requires a detailed EIA, the PIU's ES will draft ToR for ESIA. **Annex 6** presents a generic outline ToR for ESIA, specifying the tasks that are required to be conducted, including those required by national law and regulations, and those required under this ESMF. The ToR should be adjusted to the specifics of the sub-project to be assessed, and the tasks required of the consultant should be proportionate to the potential impacts of the sub-project. Project-affected people shall be involved in identifying the sub-project's potential impacts and mitigation measures. At a minimum, stakeholder engagement must be scheduled for the scoping phase of the ESIA and for the presentation of the draft report, to consult with the affected people and/or their community representatives, cooperatives or non-governmental organizations (NGOs). In conformity with national regulations, all detailed EIAs completed in response to a request from MET shall at a minimum be made available to the general public at the local Bagh office and discussed during a comments period of 15 days. If the ESIA relates to more than one Bagh or soum, separate the ESIA findings and EMPs shall be presented at separate public meetings involving the Soum Citizen Representative Khurals and Bagh citizen's meetings, and comments received shall be taken into account in the final draft.

7.2 Environment Management Plan

280. Where national law does not require a detailed EIA, but the sub-project is categorized as Category B, depending on the results of environmental and social risk screening, the PIU may decide any of the following: (a) if potential impacts are significant, issue a ToR for in-depth ESIA, or if the potential risks are minor and (b) within the field of expertise of the sub-project proponent, request the project proponent to develop an Environmental Management Plan, or not within the

field of expertise of the project proponent, (c) issue a ToR for an Environmental Management Plan to be produced by a consultant.

281. Environmental management plans must be specific in their description of the individual mitigation and monitoring measures and its assignment of institutional responsibilities, and implementation of EMPs must be integrated into the project's overall planning, design, budget, and implementation. Such integration is achieved by establishing the EMP within the project/contract documents so that the EMP/ALP will receive funding and supervision along with the other components. In addition, where contractors of construction works may sub-contract to other firms, contracts will specify that contractors are obliged to ensure that labour and OHS requirements are fully met by their sub-contractors.[11] Additional guidance relevant to other sub-project types may be required, but this should be determined as potential sub-project types are identified.

282. The EMP should be prepared in line with WB's Safeguards Policy (2018) and include measures relevant to all sub-project sites and where appropriate, specific requirements are set out. Mitigation measures are developed in relation to the design, construction and operation of each sub-project output, and the impacts identified in relation to the resources in the environmental baseline, as set out in this ESMF.

283. The EMP need to define the roles and responsibilities of the institutions involved in EMP implementation. Such institutions will seek to ensure continuous improvement of environmental protection activities during preconstruction, construction, and operation of the project in order to prevent, reduce, or mitigate adverse impacts. The key sections of the EMP include:

- Implementing Organizations and Their Responsibilities
- Mitigation Measures
- Monitoring Plan
- Reporting
- Training, capacity building and awareness
- EMP Costs
- Mechanism for Feedback and Adjustment

284. The key roles for EMP implementation should be set out in the EMP summarized in **Table**

Table 7.2 EMP Roles and Responsibilities Summary

Function	Role Related to Environmental Safeguards
Ministry of Food, Agriculture and Light Industry (MOFALI) The Executing Agency (EA)	Overall policy, guidance and direction Responsible for project coordination and liaison with WB Overall project implementation and guidance and oversight for PIU
Project Implementation Unit (PIU) under MOFALI	Provide guidance of the day-to-day activities of the project and assistance to ADFALIs Procure services of PMIS, ES and IEM Endorse project documentation and submit to WB for approval. Submit the project progress reports including safeguard monitoring reports to WB. Report the project implementation and annual EMP monitoring reporting to WB.
Aimag Department for Food, Agriculture and Light Industry (ADFALI), Project Supporting Group (PSG)	Conduct and supervise day-to-day activities of the project at aimag level establishing a PSG including representatives of key stakeholders such as Veterinary Service, meat processors and traders, herders etc. Monitoring the sub-project's EMP implementation and GRM Implementation. Responsible for monthly project progress report including status of EMP implementation status and issues to PIU. Assign person in charge for EMP coordination. In charge of facility operation and maintenance during operation phase.
PIU's Environmental Specialist (ES) provided under contract for Project management and implementation support (PMIS) consultants	Environmental experts within the PMIS team Provide technical assistance to the PIU and PSGs on implementing the EMP; Update the ESMF and EMP as required; Provide training to the staff of the PIU and PSGs, ADFALIs and contractors on EMP implementation. Review bidding documents to ensure that the EMP clauses are incorporated.

[11] IFC PS2

	Review Construction EMPs and provide recommendations for improvement. Assist the PIU in preparing internal environmental monitoring reports Advise on mitigation measures implementation and provide technical support. Coordinate with independent environment monitor (IEM) and review the monitoring results. Conduct annual EMP compliance review and support PIU in preparing the annual EMP report Conduct training events for ADFALIs and contractors on EMP requirements and implementation. Organize, prior to project completion report (PCR) mission, a survey to assess community satisfaction with project implementation and EMP implementation performance. Draft environment sections of the PCR
Independent enviental monitor (IEM)	Conduct at least two site visits to each construction site (6 project aimags) during the construction period to conduct an independent assessment of the project's compliance with the project EMP and the domestic EIAs. Conduct independent environmental monitoring according to the monitoring plan and relevant Mongolian standards. Assess the contractors', ADFALIs', PMIS, and PIU's compliance with their respective EMP implementation responsibilities as defined in the PAM. Pd submit independent monitoring reports to PIU Evaluate EMP implementation effectiveness and recommend improvements. Participate at project completion mission and provide inputs to the PCR as requested by the PIU and WB

7.3 Pesticide Management Plan

285. The Pesticide Management Plan (PMP) is developed within this ESMF which proposed to prevent and minimize potential health and environmental risks associated with pesticides and the PMP describes the shared responsibility of LCP stakeholders to work together so that the benefits to be derived from the necessary and acceptable use of pesticides are achieved without significant adverse effects on human health and the environment. To this end, all references in the PMP to local governments shall be supposed to apply equally to implementation of LCP within their aimags and soums.
286. The objectives of this PMP are to define the necessary activities to mitigate and prevent potential risks and negative impacts of using and distributing of pesticides by the project target groups and provide guidance for conducting for all public and private entities involved in LCP or associated with the distribution and use of pesticides, particularly where there is inadequate experience and practice in using pesticides.
287. The PMP is proposed for using within the implementation of LCP in the frame of Mongolian laws and legislation as a basis whereby government authorities, project involved stakeholders, farmers, those engaged in using of pesticides and any citizens concerned may judge whether their proposed activities constitute acceptable practices.
288. The PMP addresses the need for a collaborative effort between governments and private entities, farmers of pesticide users and importers to promote practices that minimize potential health and environmental risks associated with pesticides, while ensuring their effective use.
289. The LCP partners and stakeholders which are addressed by the PMP including international organizations, national and local governments, farmers, traders of pesticide and its application, equipment and public-sector organizations such as ADFALI, ADET and ASIA, environmental inspectors, agricultural officers and consumers. The full PMP is attached in the **Annex 1.**

7.4 Social Participation and Gender Mainstreaming Strategy

290. Mainstreaming gender equity and empowerment. This aspect will be a focus area in the baseline study and subsequently gender strategies will be designated to support project implementation. It is already anticipated that the income diversification program will have a pro-poor focus on female headed households.
291. The livestock subsector comprises activities contributing to sustainable livestock production to reduce poverty, support widely shared growth, and increase food security. Sustainability in

livestock production entails the provision of technology, information, supporting services, and enabling system to ensure growth while increasing the efficiency of renewable resource use. Male and female producers have somewhat different needs for technology and support services, due to gender differences in roles and responsibilities in livestock activities.

292. Women generally raise small stocks and are involved in processing activities, whereas men are responsible for large animals and marketing produce. Thus, LCP would take these differences into account in order to increase project effectiveness and sustainability. The LCP social participation and gender mainstreaming strategy will implement actions to ensure that social participation and gender equality are incorporated into the project's work, including planning and management processes.

293. The Law on Gender Equality was approved in 2011, is used as a basis for the gender mainstreaming strategy that promotes to gender equity and gender equality in agricultural sector. Mainstreaming is not an end in itself but a means to the goal of gender equality. Mainstreaming involves ensuring that gender perspectives and attention to the goal of gender equality are central to all activities – linking herders to market, provision of Micro-grants to diversify HH income and technical assistance, raising livestock productivity and quality, resource allocation, and planning, implementation and monitoring of the project. Development of an adequate understanding of mainstreaming requires clarity on the related concepts of gender and equality.

7.4.1 Gender and inclusion in the project

294. The LCP social participation and gender mainstreaming strategy will provide three interventions in order ensure gender tagging in the project. These actions are in line with MOFAL's Sector Gender Responsive Policy (2018-2023), which sets several related activities, such as: 1) pilot and introduce flexible work hours for employees with young children, 2) facilitating improvement of gender ratio/parity among members of all non-staff councils and committees of the sector.

Intervention 1: Increasing women participation in herder's organization through two strategies.

295. More men than women are involved in community activities at bagh level or in herder's organisations: women lead 15% of community-based rangeland management organizations. The main cause for the lack of female participation and representation in these groups was a lack of mobility (personal/driving skills), and a lack of time to spend at meetings because of household responsibilities and duties. One of the aimags where women were able to attend community activities were able to do so by organizing into groups and carpooling.

- Project will secure the establishment, endorsement and monitoring of a carpooling policy for CBRM meetings which increases the mobility to join meetings for women, potentially using technology including virtual platforms like skype or other social media video call for joining the conversations
- Two is to provide ensure at least 30 % (or even 50%) of leadership positions in herder organizations are occupied by women

Intervention 2: Increased women participation in value chain enterprises

296. Small and medium enterprises (SME) are the ones that attract most attention from the gender point of view. SMEs account for 98% of all economic entities and 25% of GDP, employ half of the workforce and are concentrated in services (34%), trade (37%) and manufacturing (21%). Men are predominant in large-scale business operations while women are owners of 64% of SME's (ADB, 2018).

- 20% of Productive Partnerships with women owned or women led enterprises

Intervention 3: Gender sensitive HR policies in GAVS and the Project

297. Despite women being the majority of university graduates of veterinary school, women still face barriers to be appointed to senior management positions. When considering only the 5 central level veterinary institutions, the maximum of females in senior positions from 1994 to 2014 was maximum 1 out of 5 (20%) at the time (Swiss Agency for Development). One of the causes of this gap identified in the surveys was the double burden of motherhood and career. A survey confirmed this, finding that each small child decreases the probability of female labor force participation by 14.7 percentage points relative to women with no small children. There is also data showing that only 33.8% of children under 7 attend daycare (either public or private). Surveys have found that increasing female representation at senior management to at least 30% is associated with better financial and organizational performance.

- Family friendly workplace policies for women such as flexible work hours or being able to work from home in cases where applicable using modern technology and computer
- Introducing benefits like creche and child care facilities in GAVS at UB HQs
- 50% women are hired for all 'Project' funded professional positions such as PIU staff, Young Professionals and TSPs.

298. The project appraisal document will include several results indicators to guide its work in advancing equality of voice, participation and access to resources and services for agricultural development, small and medium scale entrepreneurship to diversify and increase incomes of women, men and vulnerable groups. Moreover, it aims to empower women and small-scale herders to participate equally with men and upper-class decision-makers in rural institutions and in shaping regulations and programs. However, commercialization could benefit the livestock SMEs more and to ensure that project benefits are fairly shared, the project will give preference to those private enterprises that demonstrate greater interest to work with small herders and vulnerable groups through the productive partnership arrangements. The ESMF will include inclusive growth aspect to address this issue.

299. To ensure that LCP systematically addresses the gender and social equality dimensions relevant to its regular work and soum-level activities, it will put in place the following standards for gender mainstreaming:

- LCP's statistical databases incorporate gender- and vulnerable group- disaggregated data, where relevant and available. For the baseline, this will involve mining existing data sources – particularly social analysis and household food basket surveys– for sex-disaggregated statistics; for the mid-term evaluation, efforts will be made to collect and disseminate additional gender disaggregated data.
- Gender assessment covering social participation level and links between gender and poverty will be carried out as using desk review methodology due to the problem that no budget was allocated for it; a social participation and gender action plan will be developed; and progresses on social participation and gender mainstreaming is measured for all corporate outcomes. Appropriate quota gender equality and social inclusion for Project implementation
- Human and financial resources and normative and operational results related to gender equality from TSP and local units are systematically tracked and reported to PIU
- 20 per cent of the vulnerable and marginalized people in the project area will get benefitted from the project investments and contributions. Required human resources and capacity development.
- All capacity development activities integrate gender issues and social participation as relevant.
- The Orientation training package and tools on Social participation and Gender mainstreaming strategy for improving food security and livelihood of the people living in rural areas are on the process of development and will be available for the extended use of all stakeholders. Furthermore, the social participation and gender equity training module will be developed and taught to all relevant and cooperating stakeholders.

- The gender focal points (GFPs) and alternates appointed, within TSP and local government, are senior staff; they have written and endorsed terms of reference (TOR), and at least 20 percent 7 of their time is allocated to GFP functions, tracked in the performance monitoring and evaluation. Training funds are allocated to support GFP networking and capacity building
- The results of capacity development activities in gender equality, at the PIU, TSP to the local levels (VABU), are tracked quarterly and annually.
- Once social equal participation and gender equity is essential for promoting food security and rural livelihoods, furthermore high relevance with universal human rights, all management and capacity building opportunities promote gender and social equality issues within target stakeholders. Knowledge building
- Support research and development as well as the attendant production of technologies necessary for land and animal farming households to save labour, process animal raw materials, milk, vegetables and medicinal herbs into marketable products, and to introduce home conveniences into their lives;
- Knowledge on gender equality, especially LCP social and gender equality results, is systematically documented and publicly shared.
- Learning platforms and the sharing of best practices on gender equality programming are supported through exchange programs and training for both male and female TSP staff. Communication
- LCP communication strategy that includes gender equality is developed as an integral component of public information dissemination. All LCP public imaging and branding is gender sensitive and also promotes gender equality.
- Identify and duly reflect the different needs and lifestyles of rural young families, children, women, the elderly and people with disabilities in project interventions.

7.4 Area of affect

300. LCP's major contributions towards achievement of its gender and social participation equality goal and objectives will come from: (i) generating and communicating the evidence base through the use of sex-disaggregated and vulnerable group disaggregated data to substantiate the importance of closing the gender gap for achieving LCP's objective (ii) Building and disseminating knowledge on rural vulnerable groups and women's needs and priorities in LCP's work; (iii) providing reliable data on socio-economic and gender disaggregated analysis is incorporated in the formulation, implementation and evaluation of projects activities (iv) ensuring that rural women's needs and priorities are documented, heard and addressed in all the processes that LCP leads and supports; (v) working with partners to learn how LCP's support for gender equality in agriculture can be made more effective; (vi) developing internal structures and systems that promote gender equality, and ensuring equal participation of men and women in decision-making in LCP.

301. The specific roles of the Focal Points will be to: communicate and advocate to reinforce awareness of the importance of gender equality and social participation in the work of LCP and its partners; - ensure that gender-related work planning is results-oriented across livestock marketing, in accordance with the gender equality results and accountability frameworks; - establish quality standards for gender equality, and hold officers accountable for meeting them; - ensure that divisions and decentralized offices manage knowledge about gender equality and gender mainstreaming for continuous learning; - Support to collect gender disaggregated and vulnerable groups disaggregated data.

302. Mainstreaming essentially offers a pluralistic approach that values the diversity among both women and men. Gender equality refers to the view that men and women should receive equal treatment, and should not be discriminated against based on gender, unless there is a sound biological reason for different treatment. This is the objective of the United Nations Universal

Declaration of Human Rights, which seeks to create equality in law and in social situations, such as in democratic activities and securing equal pay for equal work.

8. PROJECT IMPLEMENTATION ARRANGEMENTS, RESPONSIBILITIES AND CAPACITY BUILDING

8.1 Project Implementation Organizations: Roles and Responsibilities

303. The Ministry of Food, Agriculture and Light Industry (MOFALI) will be the executing agency of the project and will oversee overall project implementation and management activities to ensure smooth and timely implementation and completion of project activities. The MOFALI (at national level) and ADFALI (at aimag level) will be the implementing agencies. The project is expected to be implemented from 2020 to 2026.

304. The Project Steering Committee will be established by MOFALI and comprise MOFALI directors, representatives of MOF, GAVS, Aimag Governments, ADFALI and soum representation. The MOFALI will constitute a Project Implementation Unit (PIU) for implementing the WB loan which will be established by MOFALI to manage day-to-day activities of the project. Table 8.1 below depicts Management roles and responsibilities.

Table 8.1: Management Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
Executing agency – Ministry of Food, Agriculture and Light Industry (MOFALI)	Establish project implementation unit. Establish project steering committee. Establish systems, procedures, and mechanisms to ensure effective and efficient project implementation. Oversee overall project implementation and management activities to ensure smooth and timely implementation and completion of project activities.
Project steering committee	Approve annual budgets and plans for the project. Oversee progress in project implementation. Guide and support project implementation. Provide coordination between ministries and other stakeholders involved in project implementation.
Implementing Agencies – MOFALI, and General Authority for Veterinary Service (GAVS)	Provide strategic, policy, and coordination support for the implementation of components 1–4. Supervise all project activities under components 1–4.
Project Implementation Unit	Perform day-to-day management of the project. Coordinate and implement project activities, including procurement, recruitment, disbursement, contract administration, monitoring, and reporting. Prepare, on behalf of the executing and implementing agencies, bidding documents, terms of reference, reports, and other supporting documents and submit them for review and approval. Maintain on behalf of the executing agency the impress accounts; and prepare and submit withdrawal applications and supporting documents, quarterly and annual reports, annual audit reports and financial statements.
WB	Provide technical support for project implementation. Supervise and ensure compliance by the executing and implementing agencies with World Bank's policies and procedures in project implementation.

WB = World Bank.

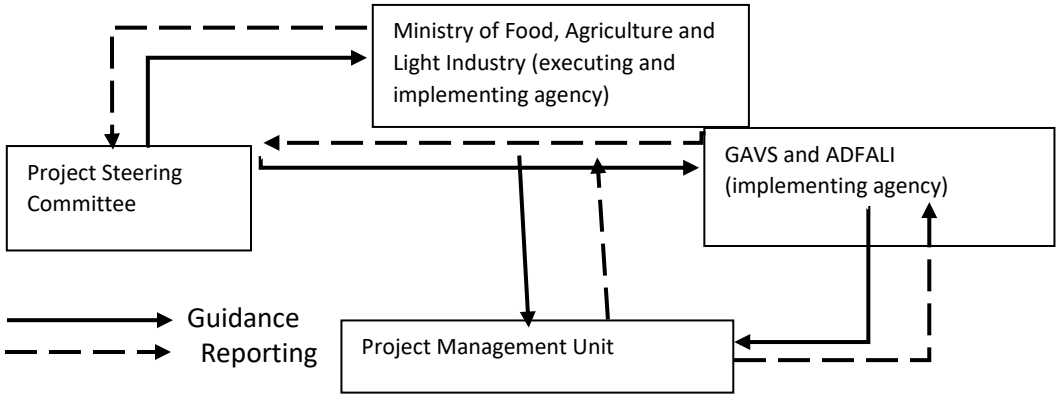
305. The Project Implementation Unit will be staffed with experienced professionals (a project coordinator, a procurement specialist, a financial management specialist, monitoring and

evaluation specialist (M&ES), environmental specialist, veterinary specialist, cost estimator, and marketing specialist) to handle day-to-day project management.

8.2 Project Organization Structure

306. The interactions between steering committed, MOFALI, GAVS, PIU and ADFALI at the project level are shown in **Figure 8.1.**

Figure 7.1: Project Organization Structure



8.3 ESMF implementation arrangements.

307. The Project Implementation Unit (PIU) which will assume primary responsibility for the environmental assessment as well as implementation of ESMF through Construction Company (civil works contractors) or any third-party consultants. The Project coordinator will be assisted by the PIU's ES for environmental monitoring and EMP measures. Keeping in view the capacity of MOFALI, it is proposed that ES and M&ES must coordinate with each Construction Company to address environmental mitigation issues[12].

308. The duties of the PIU's Environmental Specialist will include at a minimum: (i) oversight of Construction Company for monitoring and implementing mitigation measures; (ii) liaising with the local Government and Construction Company (civil works contractors) and seeking their help to solve the environment-related issues of project implementation; and (iii) technical progress reporting as well as preparation of environmental management reports every 6 months (as required by WB).

309. The ES will be assisted by the PIU's Monitoring and Evaluation specialist (M&ES) in monitoring of the contract requirements and any specialist functions by the civil, mechanical and electrical engineers hired under the PIU. Additional third-party services may be employed by the MOFALI as necessary. Further details on person/agencies responsible for ESMF implementation are in **Table 8.2**.

Table 8.2: Institutional Roles and Responsibilities for ESMF Implementation

Activity	Responsible Person/Agency
Project Initiation Stage	
Establish PIU and award contracts	Project Coordinator, Procurement Specialist, PIU, MOFALI

[12] WB advises that all EAs develop in-house capability for environmental, health, and safety (EHS) program consistent with international best practices. The EHS program should include accounting for environmental benefits resulting from investment projects within three months of loan approval. The monitoring agency shall report on semi-annual basis directly to WB and determine whether sound environmental management practices have been achieved, and suggest suitable recommendations and remedial measures for midterm correction and improvement.

Activity	Responsible Person/Agency
Clearances/approvals from relevant Government of Mongolia agencies-urban, water, power etc.	PIU, MOFALI
Disclosure of subproject EMP details on MOFALI website	PIU, MOFALI
Conducting discussions/meetings/workshops with APs and other stakeholders	ES and other Specialists at PIU
Updating of EMP mitigation measures based on discussions	ES, M&ES, PIU
Implementation Stage	
Meetings at community/household level with APs	ES, Construction Company
Implementation of proposed EMP mitigation measures	ES, Construction Company
Consultations with APs during EMP mitigation measures implementation	ES, Construction Company
Grievances Redressal	PIU /District Administration
Internal monitoring	PIU/ MOFALI
External monitoring*	External Experts

AP-Affected Persons; EA-Executing Agency; EMP-Environmental Management Plan; PIU- Project Implementation Unit, ES – PIU's Environment Specialist

*Note –External monitoring only required when projects are noticed to have significant adverse environmental impacts. Normally not required for Environment Category B project.

8.4 Capacity Building for Implementing ESMF

310. All local staff of the project must be adequately trained prior to implementing the projects on site. During signing the employment contract the Project Coordinator and ES should review the staffs' skill sets against new roles or responsibilities needed for following-up the ESMF. Each staff should explain where additional training might be needed to have the necessary skills to ensure and execute the ESMF for project aimag/soums.

311. Project will be built capacity to relevant staff of Aimag DFALI and Soum Government officials, particularly, Agricultural officer, EIs, staff of LBVS, relevant inspectors of ASIA for improving their involvement in the LCP activities and monitoring of ESMF performance.

312. ES and M&E officer provide an orientation to the ESMF. The orientation discusses the following topics:

- Background and Current Status of the LCP Project.
- Overview of the project soums' social and environmental conditions,
- LCP's PDO and planned activities, potential processing units/activities could be supported by project including planned investment, coordination, supervision, assistance needed etc.
- Introduction to the Staff and Consultants, and their role and responsibilities.
- Introduction to project applicants
- Introduction important standards and their use and control
- Specific Job Duties and Expectations relevant to ESMF.
- Introduction on supervising and monitoring process
- Overview of the facility, equipment and logistics.
- Result of reviewing of ESMF and EMPs.
- Introduction to principles e.g. communicating with applicants and stakeholders, data collecting, monitoring in the field sites etc.
- Introduction to monitoring schedules and other information.

313. Each of training should last 1-2 days minimum with specific program and should include interactive problem-solving tasks. The training program will be developed by a consultant which will be contracted with PIU during project implementation.

Table 8.3: Training programme - summary of training needs

Training topic:	Summary of training purpose and content	Recipients/ Participants	Frequency or target date	Estimated cost for training (USD)
Induction to ESMF	Overview of ESMF including site information, pollution risks and controls, and programmes.	All staff of LCP office / local staff, contractors	At beginning of employment / contract	25000
Refresher training on ESMF	Review of ESMF including new changes and updates	All staff of LCP office / contractors	One year after employment or commences, or more frequently if required	10000
Training on specific pollution risks and controls (*e.g*. handling hazardous substances or hazardous wastes)				
Classification of Chemical Hazardous and Hazardous substances	Methods for using the classification of Chemical Hazardous and Hazardous substances.	EI, Land manager, staff of ADFALI and LBVS, contractors	At beginning of projects / contract	15000
Use and control of Chemical Hazardous and Hazardous substances	Definition, system and PMP for authorization, consents for exporting/importing, producing and transporting of Chemical Hazardous and Hazardous substances	EI, Land manager, staff of ADFALI and LBVS, contractors	At beginning of projects / contract	10000
Regulations and rules related to Chemical Hazardous and Hazardous substances	International PMP of Conducting on the Distribution and Use of Pesticides. Regulation on storage, delivering and eliminating the Chemical Hazardous and Hazardous substances, Regulation on use and experiment of pesticides and chemical fertilizers.	EI, Land manager, staff of ADFALI and LBVS, contractors, PIU staff All staff of LCP office / contractors	At beginning of projects / contract	10000
Hazardous waste	Regulation on storage, registration and reporting the Chemical Hazardous and Hazardous substances.		During the projects /before contracting	5000
Monitoring and controlling impacts and risks caused by pesticides and chemical fertilizers.	Methods and approaches, principles on PM&E, Use of Participatory Approaches and tools,	All staff of LCP office / contractors EI, Land manager, staff of LBVS,	At beginning of projects / contract	22000
Emergency case response planning	To identify on-site "environmentally hazardous substances" and how to plan potential emergency response actions.	Contractors	Before starting the proposal	4000
Environmental, Health, and Safety (EHS) Guidelines. General EHS Guidelines: Environmental				
Air Quality Monitoring	Ambient Air Quality, General Approach, Projects Located in Degraded or Ecologically Sensitive Areas, Point Sources, Stack Height, Small Combustion Facilities Emissions Guidelines, Fugitive Sources, Volatile Organic Compounds (VOCs), Particulate Matter (PM), Ozone Depleting Substances (ODS) Mobile Sources – Land-based Greenhouse Gases (GHGs), Monitoring of Small Combustion Plants Emissions	Staff of ADNET, ASIA, Soum Government officials, EI, Rangers	In the framework of the project/More frequently if required	15000
Water Conservation	Applicability and Approach Water Monitoring and Management, Process Water Reuse and Recycling, Building Facility Operations Cooling Systems, Heating Systems	Staff of ADNET, ASIA, Soum Government officials, EI, Rangers	In the framework of the project/More frequently if required	6000

Waste water and Ambient Water Quality	Applicability and Approach, General Liquid Effluent Quality, Discharge to Surface Water, Discharge to Sanitary Sewer Systems, Land Application of Treated Effluent, Septic Systems, Wastewater Management, Industrial Wastewater, Sanitary Wastewater Emissions from Wastewater Treatment Operations, Residuals from Wastewater Treatment Operations, Occupational Health and Safety Issues in Wastewater Treatment Operations, Monitoring	Staff of ADNET, ASIA, Soum Government officials, EI, Rangers		13000
Hazardous Materials Management	Applicability and Approach, General Hazardous Materials Management, Hazard Assessment, Management Actions, Release Prevention and Control Planning, Occupational Health and Safety, Process Knowledge and Documentation, Preventive Measures, Hazardous Materials Transfer, Overfill Protection, Reaction, Fire, and Explosion Prevention, Control Measures, Secondary Containment (Liquids), Storage Tank and Piping Leak Detection, Underground Storage Tanks (USTs), Management of Major Hazards, Management Actions, Preventive Measures, Emergency Preparedness and Response. Community Involvement and Awareness.	Staff of ADNET, ASIA, Soum Government EI, Land managers, LBVS staff	In the framework of the project/More frequently if required	6000
Waste Management	General Waste Management, Waste Management Planning, Waste Recycling and Reuse, Treatment and Disposal. Hazardous Waste Management, Waste Storage, Transportation, Treatment and Disposal Commercial or Government Waste Contractors Small Quantities of Hazardous Waste Monitoring	All stakeholders	Within project framework	5000
Contaminated Land	Risk Screening, Interim Risk Management, Detailed Risk Assessment, Permanent Risk Reduction Measures, Occupational Health and Safety Considerations	Herders and local residents	Within project framework	15000
Specialized training for herders				
Participatory M&E of impacts.	Simple methods for recognizing adverse impacts on environment Methodology of monitoring and evaluation on the water quality	Herders and local residents	Within project framework	20000
Project management and implementation	What is a project? Project proposal writing, planning and implementing, control and project M&E, assessment the program. Principle of donor organizations' support to local beneficiaries.	Project target groups/herders	At the beginning of the project	8000
	Total			189000

9. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

9.1 Public Consultations during Project Preparation

Consultation Process

314. During the project formulation stage, MOFALI has conducted a project scoping exercise and reconnaissance survey of the existing system. Accordingly, during public consultation sessions, considerable dialogue had been held between MOFALI representatives, individuals, and groups from the local governments, community to make them aware of the proposed project.

315. Following main comments and answers summarized in the **Table 9.1** and **Table 9.2** given by the participants of public consultation meeting held in Darkhan and Selenge aimags in September 2018 and Bulgan and Uvs Aimags in October 2019. The consultations were held with various stakeholders including relevant local arms of the GoM, herders and farmers (women and men), civil society organizations and private sector.

Table 9.1 Summary of public consultation held in Darkhan and Selenge aimag in September 2018

No	Issue	% of participants selected the score for evaluation the issues					Comment defined by majority of participants
		1	2	3	4	5	
1	How will the project positively affect agricultural lands and production?	8.0	12.0	48.0	8.0	24.0	Project will support improving our livestock, land and business.
2	How will the project positively affect your land, livestock or business?	4.0	12.0	16.0	8.0	60.0	
3	How will the project negatively affect community lands and religious sites?	8.0	40.0	40.0	8.0	4.0	Clearly define the location of sub-projects and have good planning
4	How will the project negatively affect critical habitats in your area?	2.0	48.0	44.0	2.0	4.0	We have no many critical habitats
5	Will the project interfere with bird and wildlife migratory routes?	36.0	40.0	8.0	8.0	8.0	Exactly don't know
5	How will the project positively affect markets and commercial enterprise?	4.0	8.0	16.0	16.0	56.0	Hope that the project will improve market and support enterprises.
6	How will the project positively affect water supply sources in your area?	4.0	36.0	56.0	0.0	4.0	Water supply sources should be protected well from the project impacts.
7	How will the project negatively affect your roads and traffic?	4.0	0.0	12.0	4.0	80.0	Transportation will increase
8	How will the project negatively affect the drainage and sewerage in your area?	8.0	4.0	32.0	4.0	52.0	Hope that project will introduce new technologies for waste water treatment.
9	How important is it to you that the projects not occupy lands used by herders, communities, farmers and business people?	4.0	0.0	16.0	20.0	64.0	There should be more concrete consultations before starting the implementation of specific activities
10	Will the project negatively affect the homes and homesteads of vulnerable, poor and low-income residents and any ethnic minorities?	12.0	48.0	20.0	16.0	4.0	Hope that the project will contribute in making more working places and income to households
11	Does the project negatively affect women, disabled, elderly and children?	60.0	0.0	24.0	16.0	00.0	
12	Does the project negatively affect cultural and historical sites	60.0	0.0	32.0	4.0	4.0	Clearly define the location of sub-projects and have good planning

Table 9.2 Summary table of public consultation held in Bulgan and Uvs aimags in October 2019

WHEN (Date)	Where (location)	Who (participants)	What (issues or concerns discussed or raised by key stakeholders during consultation)	How (how the concerns/issues are addressed via the measures in design/construction and operation phase)

16/10/2019	Khatug-Undur Soum of Bulgan aimag	Mr. Itgelbayar, Soum Governor Mr. Baatar, Head – Buffer Zone Check Point Ms. Myadagma – Soum Animal Health Unit Mrs. Narantsetseg, Private Veterinarian Mrs. Balsanlkham, Head – Bulgan Meat Market Mrs. Bujinlkham, Herd owner Ms. Batsaihan Tsogzolmaa, Project Manager, Xanadu Razor Back LLC	**Pasture Land:** In 1991; the number of livestock was 80,000 and in 2019; the number of livestock was increased to 320,000. Over grazing due to increased number of livestock leads to desertification and land is exposed to direct sun light, rain leads to nutrient loss and soil erosion making the land becoming uncultivable. **Waste Management:** Waste (solid & liquid waste) generated by Slaughter House after slaughtering animals may affect environment due to air, water and physical contamination. Currently; the waste is dumped in one designated place at soum level and land filled. Limited Slaughter Houses in the country side forced herders and traders to slaughter livestock in country sides and leave the skins and hides, bones, hooves, blood, etc. there or landfill it. This process may decompose in open air and expose to potential contamination, health hazards to livestock and herder as well. **Animal Disease Issues**: Endemic diseases are contagious and will affect other livestock through air and water contacts. **Animal Health Issues:** Ecto-parasite on the skin of livestock is not treated properly due to inadequate veterinary services & insufficient veterinary doctors. Unavailability of proper quantity of medicines affects the health status of animals during sickness. The continuous sickness of one or few livestock normally affects other animals in the herd due to contagious disease in nature. Prucelosis disease in cattle transmits disease from milk to human beings.	The issue of over grazing is well considered with alternative approaches explained, the mitigation measures during the design and operations has been incorporated are mentioned below. Currently; oats and wheat are cultivated as fodder crop in limited area. Through productive partnership; the project will engage feedlots and processors to support herders to bring more area and bring more fodder crops under fodder cultivation. Existing fodder crops will include cow pea, sudan grass and other perennial fodder grass, etc. to increase the types of fodder crops in the project operational aimags. The waste management issue is well considered and will be addressed adequately. During the design of the project; research and development investment will be supported to MULS through Veterinary Departments to develop technologies / practices for safe disposal of solid and liquid waste. The project has addressed the issue of limited slaughter house and designed productive partnership with private sector comprising feedlots, slaughter houses, processors to deal with safe disposal of solid & liquid waste and also reduce the potential health hazards. The project has considered this issue and has addressed during the design of the project by generate awareness, imparting modular seasonal training and organize demonstration on a regular basis for herders through newly hired Young Professionals from Mongolian University of Life Sciences (MULS). These trainings will also include quarantine of sick livestock and buried or disposed safely in a distant place, which is far from livestock grazing. The project has considered this issue and has addressed during the design of the project. The project will hire pass out veterinary students as Young Professionals to provide doorstep veterinary health care services at the doorstep / grazing place of the herders. The project has well considered this issue and will address this issue during the operational phase of the project. The regular visit of the Young Professionals to the grazing site of the

				herders, will generate demand for medicines and this information will be shared with Private Veterinary Units to stock adequate quantity of medicines, so that the herders can buy and treat his sick animals. The project has well considered this issue and will be addressed during operational phase for treatment cows and the laboratory tests of cows will be conducted on a regular interval.
17/10/ 2019	Bulgan (Aimag)	Dr. Galbadrakh, Director – Department of Veterinary Services Dr. Tsengelma, Head – Animal Health Division Dr Enkhbold, Head – Laboratory Dr. Javzandolgor, Head – Agriculture Division, Department of Agriculture Mr. Gantulga, Officer – Department of Agriculture	**Pasture land, Mice menace and Soil Erosion:** Over grazing leading to desertification and mice eats roots of the grasses and the pasture land becomes unusable. The speeding water from small hillocks / mountains during rainy season washes away top soil. This soil erosion through rain water gradually becomes infeasible for agriculture in this land. **Waste Management**: Dead body of died livestock are buried in the soil. This may be a potential environment hazard as the nomad herders keep on shifting four times a year from one pasture to other pasture. **Animal Health Issues**: Vaccination and de-worming of livestock is not done for all the livestock rearing by herders due to lack of vaccines, veterinarians and information. This leads to inadequate growth of livestock. The improper grown livestock won't fetch remunerative prices for the herders. Livestock suffer from various diseases are not being treated due to unavailability of veterinarians and the existing veterinarians of private veterinary units are old enough to cope with the herders with nomad lifestyle. Livestock affected by parasites are being treated locally by spraying medicine of dip in water mixed with medicine. The spray of medicines may have potential hazards for herders and the medicine mixed water may contaminate water or land, where it is disposed. Nomad herders don't keep a cattle or livestock holder or use fencing during vaccination, drawing blood for blood test, other health check up and medication. In absence of cattle or livestock holders, all the livestock neither vaccinated nor treated. The livestock also run away and not available in one place, when	The project has well considered this issue of over grazing, mice problem and top soil erosion. Over grazing issue has been addressed during the design of the project. Private sectors along with herders and herders' groups will be mobilized through Productive Partnerships and will be provided technical and financial assistance to practise fodder cultivation. The herders will be supported by Private Sectors such as Feedlots. Slaughter Houses and Processors to provide seeds of different fodders to bring more land under fodder cultivation, which will include Oats, Wheat, Cow pea, Sudan Grass and other fodder crops to reduce the over grazing issues. The project will address the mice problems during the operational phase of the project by disseminating vital information such as pour water in the holes of land to reduce mice menace through various training and awareness program. The soil erosion issue will be addressed during the operational phase of the project by providing training and demonstration to follow contour trench in the sloppy hillocks to convert the running water to walking water and reduce or stop soil erosion. Currently; this contour trench program is implemented in many villages by the local administration. The same program may also be mobilized to the project operational soums. The project has addressed the issue during the project design to disseminate information on slaughtering, safe disposal of solid & liquid waste through modular trainings to herders, traders and upcoming entrepreneurs such as feedlots, slaughter houses and processors. The project has well considered the animal health issue and addressed this during design of the project. The project will hire pass out Veterinary Graduates as Young Professionals from

			vaccination, health check up & treatment is done. Veterinarians are disposing the left-out contents of vaccines in open spaces or dumping yards may lead to potential health hazards. **Livestock Population Explosion:** The livestock population is increased four times in last 20 years. The absence of traceability system may affect health of end consumer. Presently, meat coming from poor quality or sick livestock is not traceable.	Mongolia University Life Sciences (MULS) in adequate numbers and place them in soum level to provide veterinary care services at door steps to all the livestock under the soum. The absence of veterinarians and elderly age veterinary doctors at private veterinary units is well considered and addressed during the design of the project. Apart from Young Professionals; the project will also invite 4th and 5th year Veterinary students as interns during the disease seasons of animals to provide treatment and veterinary care services to the sick livestock. The processes of ecto-parasite (skin borne) are well addressed during the consultation. The project has addressed this by providing an alternate approach, wherein research laboratories will be improved by latest technologies and practices to use different mode of treatment of parasitic disease without affecting community and other animals. The project has considered this issue and is addressed during the design of the project. Alternate approach will be followed by engaging with private sectors and herders through productive partnership to provide required backend services. This may also include fencing during vaccination, cattle / livestock holder during artificial insemination, treatment and regular health check up. This may also include digital weighing machine for measuring body weight of animal time to time and selling. The project has considered this issue during the consultation and addressed this by an alternate approach. The project will improve the research and development laboratories to develop technologies / processes / practices to collect the left out vaccine vials and treat it for further use or disposal as appropriate. The traceability issue is considered during the design of the project and addressed by strengthening the existing law of Government of Mongolia. Presently; there is a law to regularly monitor traceability of every livestock. The software is designed, but the data entry needs to be done by Veterinarian of Private Veterinary Units. This can't be done due to lack of

				movement of elderly age Veterinarians, who couldn'd cope with shifting of livestock nomad herders. Therefore; Young Professionals and Interns will be hired to update and strengthen traceability. Later modular trainings will be imparted to all the stakeholders of the project to capture real time data (may be COCO method – Connect Offline Connect Online), established dashboard based monitoring system and reviewed on a monthly basis.
15 October 2019	Uvs aimag Ulaangom soum	Private Sector: B. Bayraa, Managing Director, MonTuva LLC (Slaughter House), Sh. Altanbagana, Manager, UFC LLC (Food Processor) Local Government: Ts Purevjav , Ulaangom Soum Governor, T. Purevmaa , Specialist, Aimag Ag Department Administration: D. Galkhuu, Specialist Soum Agricuture Unit CSO: Ts. Batsukh, NAMAC B. Ganbaatar, Association of Seed Producers Herders: 9 households representing 2 cooperatives (Tsagaan Nuur and Ulaangom Soum)	**Gender requirements:** Would those apply to sub-project selection as prerequisite/criteria? Or would it require the supported partnerships or lead organizations to comply with in the course of project implementation	The gender requirements are to observe progress of PPs and other participating organizations towards achieving gender specific objectives of the project. The PPs would be required to demonstrate efforts to achieve those by the end of the project lifetime and may not necessarily be the pre-requisite for selection.Proposals can benefit from the inclusion of organizations that have skills and experience in engaging with producer groups and with women in rural communities in partnerships, or can offer special measures to promote activities that specifically engage women.
			The project's PP selection criteria: The project's PP selection criteria seems sufficient, but since we are discussing environmental and social impact of the project, may we suggest including 1-2 environment and gender specific criteria pertaining to environmental and social responsibility by the lead organizations or the Productive Partnerships at large (energy efficiency, gender sensitivity, etc.)?	We shall recommend elaborating or adding new/updated requirements to the MoFALI. However, the selection process for PPs considers social and environmental soundness of the proposals quite sufficiently (as stipulated in the respective sections of the PP Manual). Contribution to achieving project indicators will be brought to focus.
			Waste Management: Have you considered possible increase in solid and liquid waste related to increased production and/or processing locally? Our short- and mid-term waste management capacity is limited/fixed, and increasing it may require significant resources including time.	The interventions will support existing operations and foresee little to no incremental increase in waste outputs. The project, however, will promote implementation of sound waste management practices at facilities and support environmental business opportunities.
			Pasture management: How does ESMF address ongoing pasture degradation? Would the project activities take into consideration measures to improve quality of pastures or support pasture conservation and revitalization?	The project does not intent to convert existing pastures for alternative use. The project will support intensive and semi-intensive livestock production to reduce the burden of pastures while also improving the productivity of livestock as a model to follow.
			Grivens Redress Mechanism: Very often, herders' participation in projects is limited minimizing opportunities for us to reap the benefits. Information is scares, the aimag and soum focal points (administration) are not approachable or communicable. We are kept out of	The project will establish an adequate grievance mechanism with an effective line of communication

			the information. How would this project address this and do things differently?	

316. During the consultations, representatives of local Government, project local stakeholders including staff of aimag DFASME, ADET, ASIA, soum Government and LBVS, herders and vegetable growers, small business dealers were making following key comments relevant to project impacts:

- Impacts of improved livestock and crop productivity, fodder and vegetable production in project aimags and soums should be mitigated collaboratively by herders and owners of farms
- There are no specific storages for keeping pesticides, fertilizers and abstergent, and the delivering place was just open area and no separation from ground. In the result of this, it can be negatively impact to the environment making soil, water pollution. Therefore, the conditions of old storages should be improved.
- Due to improper technology used for cropping, the soil could be eroded and is it possible that the types of plant cover, soil mono-cellular matters, worms and micro-organisms could be in a danger of extinct. To mitigate this impact, all level stakeholders relevant to cropping have to be trained and develop management plans.
- Decreasing pasture land and loosing of hay making area, changing the native or natural features of the environment and
- Increasing garbage related to animal excreta/dung
- Chemical substance and fertilizer in a soil are detrimental effects to human and animal health
- Pollution of soil and surface water
- Changing of micro-climate due to improper usage of water resources for irrigation
- Negative effects on soil and increasing of erosion in the case of plough up virgin soil for agriculture and cropping.
- Potential impacts of pesticides and chemical fertilizers which may be induced by the project
- Currently, crop companies, entities and vegetable growers in project soums do not use pesticides for vegetable production, but it may be induced by the local farmers to intensify cropping of fodder and vegetables. Therefore, following potential impacts may be occurred within project supported cropping activities.
- Environmental, air and water pollution caused by lacking of proper contain of pesticides
- There is a high-probability of wrong usage of chemical substances and pesticide for herders and local people involved in a project because their knowledge, conception and experience are not enough about how to use, contain and transport properly these substances.
- Lack of material and equipment to measure the proper lowest quantity of pesticide for vegetable and plant, detrimental effects are possible to human health
- Wrong usage of pesticide because of not to know about usage standard and norms
- Arising soil and water pollution and it might be negative effects to human health and lives.
- Impact on water resources from improvement of water supply (e.g. the digging of shallow/drilling wells for irrigation of fodder production and vegetable plots);
- Pasture degradation around the well due to unorganized usage of the well
- Soil and environmental pollution around the well
- Raise conflict between well users and other neighboring herders

- Inefficient use of water resources for
- Impacts of more intensive forms of livestock production.
- Increase of manure around the intensive farms which influence to contribute increasing of methane emission.
- Increase of soil and surface water pollution
- The pollutants in meat processingand dairy processing operations wastewater may include acids or bases (exhibited as low or high pH), soluble organic chemicals causing depletion of dissolved oxygen, suspended solids, nutrients (phosphorus, nitrogen), heavy metals (e.g. cadmium, chromium, copper, lead, mercury, nickel, zinc), cyanide, toxic organic chemicals, oily materials, and volatile materials.
- Increase in solid waste
- Raising of conflict between project involved herders and non project herders if improperly organize pasture fencing activity
- Water pollution related to livestock dipping facility
- Increase of solid waste and garbage

317. Some of the project-affected stakeholders, beneficiary communities in the project proposed aimags have gained a reasonable knowledge about the potential grievances, which may arise in the future. Communities and individuals who believe that they are adversely affected by the project may submit complaints to the project-level grievance redress mechanisms described in the respective sections below.

Consultation Details

318. During the site visits, the officials and consultants made numerous observations and held discussions with representatives of all types of stakeholders concerned which would be helpful for project design: (i) noted location of proper access to pasture, water and electricity, (ii) proper discussion on avoidance of pasture/soil degradation caused by exceeding number of cattle, unregulated use of chemical fertilizers and water and soil pollution caused by waste water and solid waste etc. at the proposed sites, (iii) discussions on ensuring natural resource user rights of herders and other residents in and around the proposed compartment zone and provide environmental and social safety during construction and operation of local residents/stakeholders living adjoining the processing facilities, (iv) discussed safety for transporting, storing and using chemicals, fertilizers and pesticides during operations, (vi) lack of safety condition for importing and distributing chemicals and chemical fertilizers, pesticides such as unclear procedures of monitoring and controlling, (vii) review the distances of crop fields, livestock grazing areas, livestock treatment facilities from sensitive biodiversity areas and natural heritage sites to ensure that there will be no impact on those, (viii) dust and noise emissions from the construction and their impacts on settlement area and apartment dwellers adjoining the proposed factories, (ix) pasture degradation by uncontrolled pasture carrying capacity from exceeded number of foreign breed of cattle and unimproved/irrigated pastureland operations, (x) review if any resettlement issue will be raised onto adjoining herders, households, entities due to establishing compartment zones, new crop areas, livestock farms, structures to be managed/constructed as part of this project, (xi) use of any banned substances generated as part of any expansion project such as asbestos etc., (xii) managing emissions from coal based heating and water boilers, (xiii) if any associated facilities are present, and (xv) review locations for climate change vulnerability based on REA checklist parameters.

319. The team along with aimag officials and communities shall also conduct group discussions with the public residing in the sub-project areas to sensitize them about project activities, their impacts and get their suggestions before starting the project.

320. Consultations were carried out with various stakeholders such as MOFALI officials, Government of Mongolia officials, relevant land departments and the sub divisional magistrate of the project area. As part of the assessment, approximately 60 representatives from local households, entities

have been surveyed/interviewed to collect the data during the months of September/October 2018.

321. The consultations were announced through various channels prior to visiting the areas. With support from Aimga/Soum administration the project was able to engage and ensure a meaningful participation of women and men of different walk, civil society organizations and private sector and take into consideration their priorities and needs including those that are marginalized and traditionally excluded from the decision making (Uvs case).

322. In order to ensure sizable participation of women, the consultations took place during school/kindergarden hours. Consultation venues varied, but, in general, the project considered ease of commute for the participants – with this in mind, most of the consultations were held in aimag/soum khural meeting halls – established and convenient gathering points for the residents. Feedbacks from remotely located households were taken on their site (fall and winter camps) such as in the case of Bulgan aimag consultation. For the future consultation the project may consider using digital communication platforms to reach out to the remote herders.

323. The resident community consulted was requested to air their opinions freely, on the project, its impact, and suggestions for mitigating adverse impacts. People participated in voluntary public consultation sessions to express their view about the proposed project. No major environmental issues were raised during the consultation process.

9.2 Public Consultations during Project Implementation

324. Consultation during implementation. This ESMF contains details of the consultation undertaken during preparation of these sub-projects. In addition, consultation will take place during implementation. The PUSO-PSG with support from the LIEC as required will undertake consultation interviews within 4-6 weeks of construction starting and then again, every 2 months (during the periods of construction) until construction is complete.

325. It is suggested that the consultations take the form of meetings and site-based discussions and include the following:

- Environmental impacts of civil works (e.g., solid & liquid waste, erosion, local flooding, pollution);
- Any unforeseen impacts caused by accidentally e.g. through spillages;
- Civil nuisance (e.g., noise, dust, disrupted business & farming activity, social issues, community health and safety);
- GRM and its procedures including details of persons to contact and contact details

326. In summary, informal monitoring interviews with affected people will focus on complaints about community disturbance from construction activities, as well as public concerns about ecological protection, soil / land concerns and access issues.

9.3 Information Disclosure

327. In line with WB's access to information Policy, MOFALI is required to ensure that relevant project information about environment and social safeguard issues is made available during the initial stages to affected people and other stakeholders, including the general public at *Aimag*/Soum headquarters where it is publicly accessible in Mongolian language and any other vernacular local language. WB and MOFALI will also upload and display ESMF and its relevant documents for their respective websites.

328. Incorporation of the environmental concerns of key stakeholders) through the public consultation in the decision-making process will avoid or minimize conflict situations during the implementation process of sub-projects as well as enable them to provide meaningful inputs into the project design and its implementation. During implementation period, MOFALI through the PIU, aimag/soum government and Construction Company can conduct public consultation and information disclosure through public meetings and notice.

329. Environmental information on the project, including the ESMF and other safeguards information will be disclosed in accordance with WB's Public Communications Policy (2018). This includes:
    a. The full ESMF and the DEIA will be available for review in PIUs office in Mongolian language;
    b. The ESMF will be disclosed on WB's project website (www.worldbank.org);
    c. Full copies of this ESMF are available upon request in English; and
    d. Annual reports on project's compliance with the Environmental Management Plan (EMP) and other necessary information will be available at www.worldbank.org

10. GRIEVANCE REDRESS MECHANISM

10.1 Grievance Redress Mechanism Objective

330. The objective of this grievance redress mechanism (GRM) is to address complaints if or when they arise. As a result, a GRM will be established in each project aimag, in accordance with relevant laws and Government practices. The GRMs will remain accessible throughout project implementation stage until a Project Completion Report is issued.

10.2 Grievance Redress Mechanism Introduction

Grievance Channels (Framework)

331. The FSMF requires that, MOFALI and its PIU at national level, ADFALI at aimag level have to organize/conduct discussions with groups and individuals of aimag/soum officials and local communities to make them aware of the proposed project, provide them reasonable knowledge about the potential grievances, which may arise in future, and introduce GRM of the project.
332. Handling of grievances will be done in a culturally appropriate manned and be discreet, objective, sensitive, and responsive to the needs and concerns of the project affected parties. The mechanism will also allow for anonymous complaints to be raised and addressed for all Project financed activities.

10.3 The Grievance Redress Mechanism

333. MOFALI does not have any specific Environment or Social Safeguards Policy currently. WB safeguard policy procedures require MOFALI to establish a Public Complaint Unit (PCU) for Environment and Social impacts having suitable grievance redress procedure for the project affected persons. The GRM would address affected persons' concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to the affected persons at no cost. This GRM consists of a PCU for Environment and Social safeguarding coordinated by the PIU Environment Specialist. The committee consists of the following constitution as listed in **Table 10.1**.

Table 10.1: Constitution of Public Complaint Unit

1	PIU Environment Specialist
2	PIU M&E Specialist
3	Environment Consultant
4	Aimag/Soum Agricultural officer/ Administrator
5	Representative of Construction Company
6	Affected Person

334. Responsibilities of the PCU will include:

- Instructing contractors and construction supervisors to refer any complaints that they have received directly to the PCU. Similarly, the PCU will coordinate with local government departments to capture complaints made directly to them:

- Logging complaints and date of receipt onto a complaints database and inform the ADFALI and the Contractor.
- Investigating the complaint to determine its validity and to assess whether the source of the problem is because of project activities, and identify appropriate corrective measures and responsible persons;
- Informing the AP of investigation results and the action taken;
- Submiting an interim report to local government agencies on status of the complaint investigation and follow-up action within the time frame assigned if a complaint is transferred from local government agencies;
- Reviewing the contractor's response to the identified corrective measures, and the updated situation;
- Undertaking additional monitoring, as necessary, to verify as well as review that any valid reason for complaint does not reoccur.

335. This Grievance Redress Mechanism (GRM) would provide an effective approach for resolution of complaints and issues of the affected person/community with procedures for timely disclosure of project information, and contact details of designated staff at all levels will be made available to the public for raising concerns/complaints including citizen's feedback via ICT platforms such as SMS/text on the services provided by the Project (through project's Digial Livestock Solutions). The GRM procedure would include detailed arrangements to receive and document complaints and timelines to respond to complaints/feedbacks and record keeping of the processes.Project Implementation Unit (PIU) shall formulate procedures for implementing the GRM and PIU's responsible staff shall undertake GRM's initiatives that include procedures of taking/recording complaints, handling of on-the-spot resolution of minor problems, taking care of complainants and provisions of responses to distressed stakeholders etc. paying particular attention to the impacts on vulnerable groups.

336. Grievances of APs will first be brought to the attention of the Environment Specialist of the Project Implementation Unit and the Construction Company. Grievances not redressed by them will be brought to the PCU set up to monitor project Implementation for each project area. The PCU will determine the merit of each grievance and resolve grievances within 15 days of receiving the complaint; further grievances will be referred by APs to the appropriate courts of law. The PIU will keep records of all grievances received including: contact details of complainant, date that the complaint was received, nature of grievance, agreed corrective actions and the date these were effected and final outcome. The flow chart showing Grievance Redress Mechanism is presented in Figure 10.1.

337. During Construction or initial period, the GRM can have multiple entry points for grievances i.e. at the soum administrations levels; Construction Company and/or the PIU level handled by PIU Environment Specialist. During operations, if any issues are not addressed in the GRM, the grievance can be resolved by referring to WB's loan covenants.

10.4 Proposed Grievance Redress Steps and Timeframe

338. Procedures and timeframes for the grievance redress process are as follows and shown in **Figure 10.1** as like following:

Stage 1: Access to GRM. If a concern arises, the AP may resolve the issue of concern directly with the contractor, or make his/her complaint known to either the Public Complaint Unit (PCU) directly, or through the Bagh or Soum government, whichever level of authority he/she is most comfortable with;

Stage 2: Official Complaint to PCU. If a complaint is filed at bag/soum level, the bag/soum representative will submit an oral or written complaint to the Public Complaints Unit (PCU). For an oral complaint the PCU must make a written record. For each complaint,

the PCU must assess its eligibility. If the complaint is not eligible, e.g. related to an issue outside the scope of the project, PCU will provide a clear reply within five working days to the AP.

Stage 3: PCU Complaint Resolution. The PCU will register the eligible complaint informing the ADFALI, the contractor, the PIU and WB. The PCU, with support of the PIU's Environment Specialist (ES), will take steps to investigate and resolve the issue. This may involve instructing the contractor to take corrective actions. Within seven days of the redress solution being agreed upon, the contractor should implement the redress solution and convey the outcome to the PCU.

Stage 4: Stakeholder Meeting. If no solution can be identified by the PCU or if the AP is not satisfied with the suggested solution under Stage 3, within two weeks of the end of Stage 3, the PCU will organize a multi-stakeholder meeting under the auspices of the Governor of the concerned soum, where all relevant stakeholders will be invited. The meeting should result in a solution acceptable to all, and identify responsibilities and an action plan. The contractor should implement the agreed redress solution and convey the outcome to the PCU within seven working days

Stage 5: Aimag Governor Resolution. If the multi-stakeholder meeting cannot resolve the problem, and the AP is unsatisfied, the PCU will set up a meeting with the relevant aimag Governor to identify a solution

339. **World Bank Special Mission:** If the aimag Governor is unable find a resolution, the PCU will inform WB and a special mission will be initiated to resolve the issue. Note that if the APs are still not satisfied with the outcome, they can go through local judicial proceedings.
340. **The World Bank's Grievance Redress Service (GRS):** GRS provides an additional, accessible way for individuals and communities to complain directly to the World Bank if they believe that a World Bank-financed project had or is likely to have adverse effects on them or their community. The GRS enhances the World Bank's responsiveness and accountability by ensuring that grievances are promptly reviewed and responded to, and working together identifies problems and solutions.
341. **Accountability Mechanism of GRS:** In addition, affected people may always contact or submit their complaint to the GRS of the WB via the following addresses, which will be included in the signboard of sub-project sites.
342. The GRS accepts complaints that are:
    - related to an active World Bank-supported project (IBRD or IDA)
    - filed by a person or community who believes they have been adversely affected by a World Bank-financed project
    - filed by a bidder or potential bidder about the procurement process on a World Bank-financed contract
343. Complaints must:
    - identify the project subject of the complaint
    - clearly state the project's adverse impact(s)
    - identify the individual(s) submitting the complaint and whether confidentiality is requested
    - specify if the complaint is submitted by a representative of the person(s) or community affected by the project
    - if the complaint is submitted by a representative, include the name, signature, contact details, and written proof of authority of the representative
    - Supporting evidence is not necessary but may be helpful in reviewing and resolving the complaint. The complaint may also include suggestions on how the individuals believe the

complaint could be resolved. The identity of complainants will be kept confidential upon request. More instructions available at: http://www.world bank.org/grs

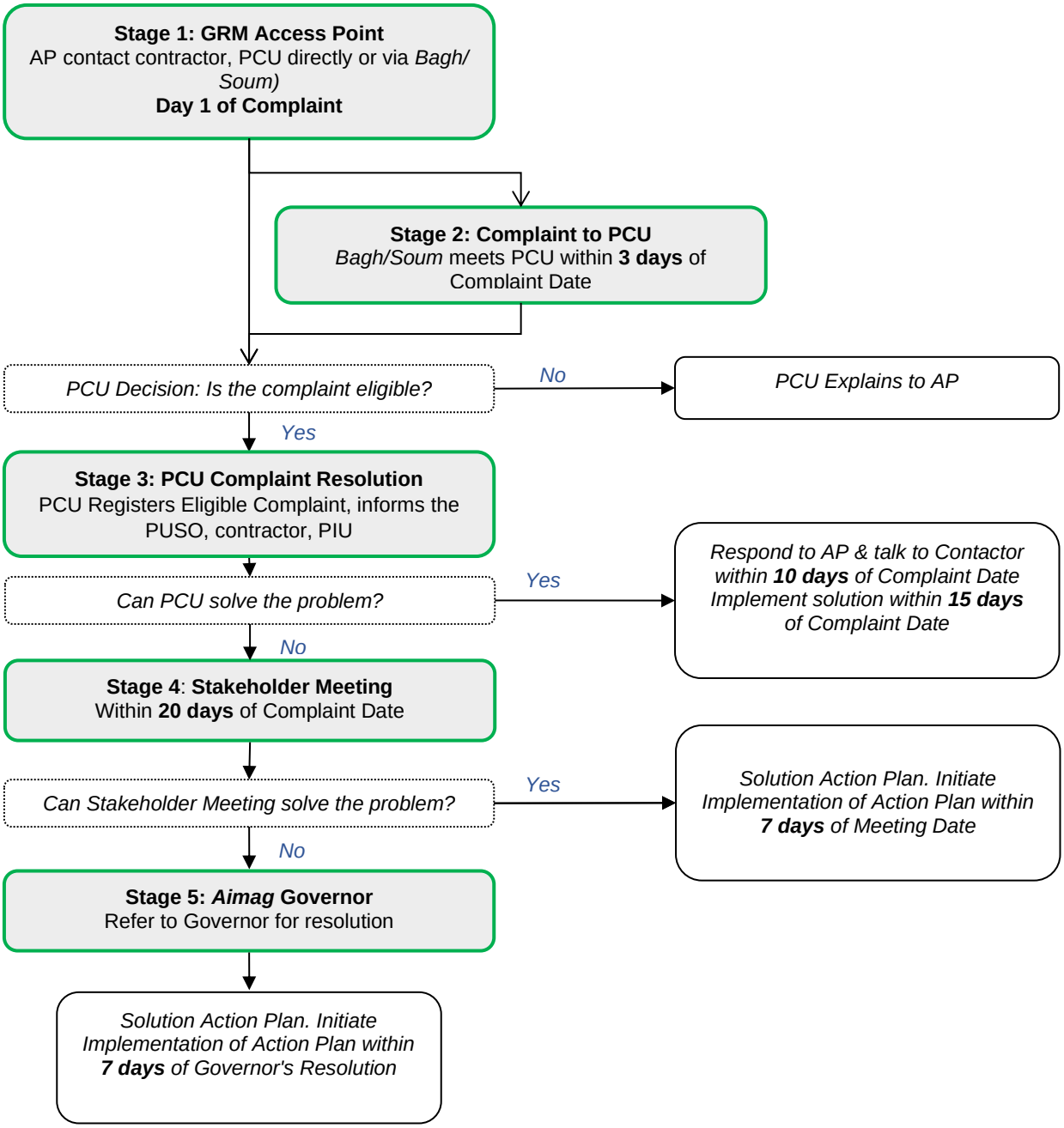
344. The GRS accepts complaints in English or the official language of the country of the person submitting the complaint. **(The Complaint Form of WB Grievance Redress Service is attached in Annex 3).** Submissions to the GRS may be sent by:

Email: grievances@worldbank.org
Fax: +1-202-614-7313
Letter: The World Bank Grievance Redress Service (GRS)
MSN MC 10-1018
1818 H St NW
Washington, DC 20433, USA

345. **Reporting:** The PCU will record the complaint, investigation, and subsequent actions and results. The aimag level Project Support Group will include this information in the quarterly progress reports to the PIU. In the construction period and the initial operational period until project completion report. The WB should receive reports on performance of the GRM on regular basis during supervision mission or more frequently as requested.

346. **Stakeholder meetings.** The invitees to this meeting will depend on the nature of the complaint. For example, if the complaints relate to health, land disputes, or labor issues, the appropriate specialist in this field will be invited to the stakeholder meeting. This may include officers from the Land Agency (land rights issues), Women's Association NGO (gender issues), Health authorities (health issues), aimag environment protection authorities, aimag Professional Inspection Agency (occupational and community safety as well as environmental issues); and the Ministry of Labor & Social Security Officer (labor issues).

Figure: 10.1 Grievance Redress Mechanism for Environment and Social Impact



347. A community awareness program must be conducted one month prior to construction by the PIU of MOFALI regarding the scope of the sub-project, procedure of construction activities, utility of resources, identified impacts and mitigation measures. These awareness programs will help the community to resolve problems, clarify their distrusts related to the proposed project at initial stage. The Community should be informed about the Grievance Redress Mechanism (GRM), which is already established as per MOFALI and Government of Mongolia procedure for making complaints, including the place and the responsible person to contact in practical way in this regard. Almost all the stakeholders related to the GRM will also be aware of the established grievance process, the requirement of grievance mechanism, goals, benefits, relevant laws regulations etc.

11. ENVIRONMENTAL MONITORING PLAN (EMoP)

348. The mitigation measures suggested requires monitoring of environmental attributes both during construction and operational phase of the project by the MOFALI. During the construction and operation phase of this project, the monitoring of the environmental aspects shall be done at the

sup-project sites by the IEM and ES of the PIU of MOFALI. During the construction phase, civil works contractors should ensure that activities like handling of earth works clearing work, access road construction, putting proper traffic signals is done properly to have minimum impact. (The Environmental Specifications for Construction is attached in the Annex 4). This in turn should be monitored by the Engineer-in-Charge of the individual sub-projects.

349. The environmental monitoring plan is to be utilized for measuring the extent of compliance with the EMP during the project implementation. The main objective of environmental monitoring is:
    - to evaluate the performance of construction company in mitigating negative impacts vs. the proposed measures in the EMP;
    - to provide information on unanticipated adverse impacts or sudden change in impact; to determine if any impacts are irreversible in nature which required remedial measures and monitoring;
    - to suggest improvement in environmental mitigation measures, if required;

350. Implementation of environmental mitigation measures will be ensured through both routine and periodic monitoring. **Tables 11.1** and **11.2** list environmental monitoring activities during construction and operational phases:

Table 11.1: Construction Phase Monitoring

#	Indicators of Monitoring	Types of Monitoring/ Method of Monitoring	Monitoring Frequency	Responsibility
1	Safe transportation of construction material through neighborhood and roads	Visual Inspection Continuous	Regular during construction	Civil works contractors
2	Stockpiling of excavated materials and appropriate disposal	Visual Inspection	Regular during construction	Soum/Civil works contractors
3	Occupational health and safety, use of safety gears by workers	Use of PPE Visual Inspection	Regular during construction	Civil works contractors
4	Safety to residents, staff, apartment dwellers etc.	Record of injury or accidents	Regular during construction	Soum government
5	Inconvenience to apartment dwellers, water logging etc.	Visual Inspection Continuous	Regular during construction	Soum/Civil works contractors
6	Solid waste segregation disposal	Visual Inspection	Regular during construction	Civil works contractors
7	Cutting/trimming of trees	Continuous	Regular during construction	Soum, Civil works contractors
8	Construction of waste water treatment facility for meat and dairy processing units	Continuous	Regularly during construction	Soum environment inspector

PPE: personal protective equipment

Table 11.2: Operations Phase Monitoring

#	Indicators of Monitoring	Types of Monitoring/ Method of Monitoring	Monitoring Frequency	Responsibility
1	Solid waste management system	Records of waste collected and managed	Bi-annual	Soum/ PIU
2	Wasted water treatment level from meat and dairy processing units	Records of quality of threatened waste water	Regular	Soum/ EI
3	Number of orientation and trainings on safety, facility usage to workers, staff	Number of orientation and trainings conducted	Regular	Soum/ PIU
4	Preparation of monitoring reports and Impact audits	Preparation of monitoring reports and Compliance with EMP	Bi-Annual	Soum/ PIU

EMP = environmental management plan, PIU = Project Implementation Unit

351. The construction company will adhere and comply with all measures and procedures identified in the EMP. The plans, endorsed by the EA and Government of Mongolia, will be monitored in accordance to WB Safeguard Policy requirements. Mitigation measures related to construction as specified in the EMP will be incorporated into civil works contracts, and their implementation will be primarily the responsibility of civil works contractors. In addition, civil works contractors will be requested to submit monthly progress reports on the implementation of EMP measures. The EA in turn will be expected to report to the WB on progress achieved against the EMP activities and milestones on a quarterly basis. Progress reports will include a description of implementable activities and their status; identify the responsible party (ies) involved in their implementation; and provide project management schedules and timeframes for doing so, along with their associated costs.

Annex 1. Pesticide Management Plan

PESTICIDE MANAGEMENT PLAN OF NATIONAL LIVESTOCK AND AGRICULTURE COMMERCIALIZATION PROJECT

1. Summary of recommendations

1. The PMP describes the shared responsibility of LCP stakeholders to work together so that the benefits to be derived from the necessary and acceptable use of pesticides are achieved without significant adverse effects on human health or the environment. To this end, all references in this PMP to local governments shall be supposed to apply equally to implementation of LCP within their aimags and soums.
2. The PMP addresses the need for a collaborative effort between governments and private entities, farmers of pesticide users and importers to promote practices that minimize potential health and environmental risks associated with pesticides, while ensuring their effective use.
3. The LCP partners and stakeholders which are addressed by this PMP include international organizations, national and local governments, farmers, traders of pesticide and its application equipment and public-sector organizations such as ADFALI, ADET and ASIA, environmental inspectors, agricultural officers and consumers.
4. The PMP recognizes that training at all appropriate levels is an essential requirement in implementing and observing its provisions. Therefore, local governments, LCP partners and stakeholders, users of pesticides, international organizations, non-governmental organizations (NGOs) and other parties concerned should give high priority to training activities related to each Article of the PMP.
5. The standards of conduct set forth in this PMP:
    - encourage responsible and generally accepted trade practices;
    - assist project aimag and soums which have not yet established regulatory controls on the quality and suitability of pesticide products needed in that soum to promote the proper and efficient use of pesticides and address the potential risks associated with their use;
    - promote practices which reduce risks in the handling of pesticides, including minimizing adverse effects on humans and the environment and preventing accidental poisoning resulting from improper handling;
    - ensure that pesticides are used effectively and efficiently for the improvement of agricultural production and of human, animal and plant health;
    - adopt the "life-cycle" concept to address all major aspects related to the development, regulation, production, management, packaging, labelling, distribution, handling, application, use and control, including post registration activities and disposal of all types of pesticides, including used pesticide containers;
    - promote Integrated Pest Management (IPM) (including integrated vector management for public health pests);
    - promote the laws and legislation of Mongolia related to Poisonous and Hazardous Chemical Substances and pesticides, include reference to participation in information exchange and international agreements, in particular the *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade*.
6. All partners and stakeholders of LCP, including farmers and herders' groups, IPM researchers, extension agents, crop consultants, food producers, traders of biological and chemical pesticides and application equipment, environmental inspectors and representatives of consumer groups should play a proactive role in the implementing, monitoring and promotion of this PMP.

2. Background

2.1 Project objectives

7. The Project Development Objective (PDO) is tentatively defined as to "To improve livestock health, productivity, and commercialization of targeted value chains in project locations and to provide immediate and effective response in the event of an eligible crisis or emergency". The objective is aligned with selected national programs and policy reforms. The evidence from project implementation is to systematically inform design and policy of larger national initiatives, thereby building complementarity with World Bank supported Economic Management Support Operation.
8. The project comprises three main components: (i) Livestock and animal health, (ii) Livestock and Crop Productivity, and (iii) Agriculture Value Chains and Commercialization, iv) Project Management. To achieve its objectives and maximum impact, it addresses a set of closely linked constraints in market access, price-quality relationships and livestock production (animal health, animal breeding, genetics and nutrition) which need to be treated in an integrated manner.
9. The project component-1 on Livestock and Animal health will address constraints to livestock and meat export, which primarily come from its animal health status. The animal health component will support the development of export markets through strategic planning for export development, bilateral negotiations and strengthening of disease-free zones, veterinary services and individual veterinary and para-veterinary capacity. Animal health initiatives by the project will also endeavor to strengthen capacity of animal health groups/associations, as well as central and aimag laboratories, border inspection and buffer zone check points.
10. Sample investments within this component will include: (i) improving veterinary facilities, laboratories and diagnostics infrastructure, and upgrading the delivery of veterinary services (government and private sectors) and compliance to food safety regulations, (ii) supporting a national program for livestock identification, traceability and movement control, (iii) supporting improvement of disease surveillance, disease prevention and disease control (through vaccination and biosecurity) for Trans boundary Animal Diseases (TADs) and improved control of endemic diseases, and (v) establishing disease free zones (as per OIE guidelines), (or, alternatively, disease free flocks, soums, aimags) and/or compartment zones within selected areas.
11. Aside from food safety in relations to foreign trade, the project will address lack of food safety and hygiene regulations in domestic markets by filling policy vacuum, leadership void, and public underinvestment. The latter will be largely linked to the value chain component and adopt an approach which builds better access to markets through abattoir system to benefit various participants (herders, feedlot operators, and private vets) on the supply side of the chain.
12. The project component-2 on Livestock and Crop Productivity aims to ensure productivity increases and quality products for the markets. Support will be provided through investments and extension services in the areas of animal nutrition, breed improvement and feeding to improve the productivity of the traditional species (sheep, goat, horse, cattle/yak, camel) within the semi-nomadic production system through breeding, feeding and animal health, in conjunction with Component 1.
13. Under Component 2, the project will primarily support intensive livestock farming models (including feed lots, stall fed farming, and support breed improvement initiatives (such as breeders' associations, public and private breeding service units, performance recording, breeding farms, AI programs, nucleus and male flocks, etc.). Further, technical assistance for finalizing the enabling regulations required under the Animal Health Law and Animal Genetic Resource Laws and developing veterinary staff and breeding specialists' technical and extension skills is planned. The breeding programs developed and/or supported by the project will aim at improving economically important traits demanded by livestock keepers and end-users within the selected areas.

14. The project's breed improvement interventions will encompass (i) conservation of indigenous breeds and strains while expanding area of their distribution based on strengthening of their gene pool, (ii) Increased (F1) beef and sheep meat genotypes through crossbreeding of local cattle and sheep with foreign fast-growing meat breeds in the crop production area of the country, (iii) establishment of nucleus herds and male flocks for increased beef and sheep meat for production of genetic materials (fresh and frozen semen and embryos) that will be used for breeding, and iv) capacity building to facilitate adoption of basic genetic improvement measures at the community level. Effective collaboration with National Animal Gene Bank is hence a vital part of the project activities.
15. As forage improvement and animal feeding being two areas essentially covering two different technology areas (forage production entails technology that tends to be agronomy-focused and links to broader issue of the best use if available resource for forage or crops destined for human consumption, while animal nutrition entails technology related to animal production and flock management), the project will address expanding and strengthening existing cooperatives, training of producer cooperatives and herders on fodder and forage planting as well as better feeding practices through improved extension services. The improved nutritional levels will improve reproductive rates and weight gains and contribute directly to enhancing household incomes.
16. The component-2 will define a role of the project in enhancing the quality and outreach of agricultural extension services. Extension in livestock and crops could benefit from both hands-on approaches and distance learning. The project will employ a combination of animal training with increased mobility and resources for local veterinarians, technicians and herders which will result in less disease and higher productivity. The project will enhance use of ICT particularly mobile and Internet technologies, which have the potential to overcome isolation, felt by rural Mongolia and alleviate associated encumbrances. Problems in the past have been largely the lack of an appropriate last-mile point of service, more suitable content and services, and intermediaries who could act as a bridge and a facilitator between the external world and the local context.
17. The interventions under the project component-3 on Agriculture Value Chains and Commercialization will relate to (i) increased market access to farmers and herders; (ii) introduction of advanced technologies for intensive food production systems; (iii) organizing agriculture, food and livestock processing clusters; (iv) improving the cost and product competitiveness of livestock and agriculture products particularly meat; (v) increasing domestic supply of main food products, and ensure that citizens are supplied with healthy and safe food products; and (vi) integrating domestic processors to the global value-chains.
18. The project interventions will support select activities to make producers and their organizations 'competitive' through (i) technical and marketing oriented advisory services; (ii) research collaborations with universities, technical institutions; (iii) support for building 'compartment zones' and 'export corridors' operating under rules and guidelines endorsed by importing countries inspection systems as well as by OEI; (iv) improved access to finance by establishing risk sharing mechanisms in partnership with commercial banks and NBFIs, as well as through or within the existing Government- operated funding schemes, i.e. SME Development Fund and DBoM lending mechanism.
19. Formal alliances between producers' and private sector would be encouraged between producers' and agro-processing SMEs under the project to enhance value chain competitiveness. The support from the project will take the form of competitive loans and grants to enable SMEs to upgrade their technology/facilities and/or invest in local herders and cooperatives to strengthen value chain infrastructure and supply chains meeting international standards in animal disease traceability, inspection and maintenance technology.
20. The investment package will include the equipment, tools, facilities, power, water and hygiene systems necessary to ensure safe food production. The training package will address on-farm and

in-plant food safety, processing techniques, marketing, financial management and strategic management. All applications will require viable business plans that include the training required to build production, management, and marketing capacity.

21. The project component-4 on Project Management will support the coordination of project activities and the fiduciary functions of the Project Implementation Unit (PIU) under the guidance of MoFALI. The PIU will be staffed and equipped to enable it to effectively carry out these activities. The component finances incremental staff, consultants, operating costs, TA, training, M&E activities and impact assessments, information dissemination and annual audits.
22. The component will conduct financial, environmental, and social due diligence for the beneficiaries' proposals and other subprojects as necessary in consultation with relevant government agencies and the World Bank.
23. The Project will also support the coordination of donor funded programs in the livestock sector, by holding semi-annual meetings to review implementation progress and provide policy guidance to MoFALI. In the process of the reviews, the Project will ensure that the objectives and implementation arrangements are aligned with the Government initiatives.

3. Pest problems

24. Following pest problems are facing with farmers and project partners in the project aimags and soums:
    - Some project aimags have pasture degradation caused by increasing of grasshoppers, rodents and crop farmers have difficulties with crop pests in project proposed soums.
    - Farmers in project soums have no experience on using of pesticides, but agricultural companies such as "Gachuurt" LLC and other companies, operating in project neighboring aimags like in Selenge, Bulgan, Khentee, Khovd and Tuv aimags are importing pesticide and chemical fertilizers from Russia and China. This influence to rural individual farmers to use pesticides and chemical fertilizers for fighting pests and increasing yield of crops and some farmers are initiating to buying chemical fertilizers and pesticides.
    - Local people, herders and farmers have lack of information, knowledge and experience about advantages/disadvantages of using of pesticides and laws and regulations, to conduct on using, distributing pesticides.
    - ADFALIs store aseptic and some types of pesticides at aimag center and distribute to soums by truck. There is no any specific storage and lack of skill and knowledge on conducting to pesticides and chemical fertilizers and livestock sanitation aseptic.
    - Aimag and soum level inspectors have lack of information on using of pesticides and equipment to measure the size of excess pests and fertilizers in agricultural products, vegetables and foods.
25. Therefore, LCP needs to include some specific activities concerning to improve knowledge of project stakeholders and farmers on impact of pesticide and chemical fertilizers, how to properly use them, and build capacity to local Environmental Inspectors, Land managers and Agricultural Officers and improve their skill and methodology on how to control and monitor the distribution, storage and use of pesticides and chemical fertilizers at local soum level.

4. Pest management & pesticide regulatory framework

26. The LCP will follow the following regulations and resolutions related to pesticides and chemical fertilizers approved by Mongolian Government and Ministers:
    - Mongolian Law on Poisonous and Hazardous Chemical Substances, approved in May, 2006
    - Resolution of Mongolian Government on "Approval of the list of Poisonous and Hazardous Chemical Substances", by April, 2007

- Regulation on “Using, storing and transporting of Poisonous and Hazardous Chemical Substances”, order # 28/40/29, by MONET, Ministry of Health and National Emergency Management Agency in February 2009.
- Regulation on “Classification of Poisonous and Hazardous Chemical Substances”, order # 04/04, by MONET and Ministry of Health in 2009.
- Regulation on “Producing, selling, exporting, importing of Poisonous and Hazardous Chemical Substances and transorting them through the border”, order # 92/90, by MONET and Ministry of Foreign Affairs in December 2008.
- Regulation on “Using and experimenting of pesticides, chemical fertilizers and aseptic for fighting against rodents and insects”, order # 63/67/87 by MONET, MOFALI and Ministry of Health, in March 2009.
- “List of pesticides allowed to use for plant and vegetable protection in Mongolia”, order # 62/66/86 by MONET, MOFALI and Ministry of Foreign Affairs in 2009.

27. If the project involved aimags’ CRK and Governors make specific order and regulation for regulating using of pesticides and chemical fertilizers in project aimag and soums, the project stakeholders have to follow these regulations.

5. The Pesticide Management Plan

5.1 Objectives of PMP

28. The objectives of this PMP are to define the necessary activities to mitigate and prevent potential risks and negative impacts of using and distributing of pesticides by the project target groups and provide guidance for conducting for all public and private entities involved in LCP or associated with the distribution and use of pesticides, particularly where there is inadequate experience and practice in using pesticides.
29. The PMP is proposed for using within the implementation of LCP in the frame of Mongolian laws and legislation as a basis whereby government authorities, project involved stakeholders, farmers, those engaged in using of pesticides and any citizens concerned may judge whether their proposed activities constitute acceptable practices.

5.2 Expected Results

30. Following results will be achieved at the end of implementing this PMP within the LCP:
    - Improved capacity of ADET and ASIA in controlling and monitoring on pesticide distribution, using, and storage, transporting.
    - Improved capacity of ADFALI for storing and distributing pesticides in project aimags.
    - Improved knowledge and skill of local inspectors and farmers on proper use of pesticides
    - Improved capacity for mitigating and preventing risks associated with using of pesticides at local soum level

5.3 Pollution risks and controls

31. The project implementing bodies have to have specific plan to minimize and where practicable avoid pollution from their site. These risks may arise from potential small scale factors such as dairy processing and wool hides washing and processing units, livestock slaughtering points, livestock dipping facilities etc, which may suggested and supported within the LCP and their activities will be undertaken by project support receivers.
32. Therefore, the project implementation bodies could manage their pollution risks, and what improvements are needed.

33. Within project activity, project partners have to prevent to increase use of pesticides. There are probability to import and use following pecticides and fertilizers for agricultural use from Russia and China. Those substances have to get permission to use in agricultural purpose. For those:

1.Herbicide Puma super 7.5%

Technical definition: Phenoxaprop-P –Ethyl, well dissolved in water, white color emulsion.
Formula: $C_{16}H_{12}ClN0_5$

Guidance to use: Used against one age hazardous annual syllabic weeds in seeds field according guidance.
Consequence: Puma super is less toxic to hot blooded animals, not harmful to warm, small land rodents and bees. Third category, medium Hazardous.
Data of entrance into Mongolia: Included in list of pesticides can be used in agricultural purpose in Mongolia in 2008.

Chemical risk/Population risk assessment, safety assessment:
If Puma-Super herbicide's is getting into skin, eyes or respiratory organ, than it may couse itchness and allergy. It is harmful if swallow or inhale. If high concentrated dust occurred then can couse headache, dizziness, unfeeling, wamble or impact to central nerv system.

Exposure condition:
Loss of impermeability of the herbicide will cause spillage into land and water during transportation, load/unload and storage in warehouse and may spread by wind or by human step.
Exposure during preparation for spreading (Mixing, pouring etc.), during spreading in the field.

Affected people:
Affected people are mostly those who directly handle with herbicide who do not follow instruction on handling toxic materials (workers or group of workers).
No negative impact to local people and inhabitants.
Conditions for disaster and risk:
Inhaling evaporation of liquid substances or dust due to wrong handling procedure or by accident
Long term touching to skin due to unwearing protected clothes
Accidently swallow the herbicide
Penetration through contaminated food

Exposure assessment:
Hazardous for aquatic environment and aquatic animals. Less negative impact to warms and bees.
Poisenous level for fishes and dose (lethal dose): LC50 (96 hour) Salmon 0.57 mg/L
Poisenous level for aquatic animals (impact): EC50 (48 hour) water warm -magna 0.56 mg/L
Poisenous level for birds (lethal dose): LD50 Bobwhite> 2000 mg/kg
Poisenous level for Algae (lethal dose): LC50 (72 hour) Algae type: Scenedesmus subspicatus 0.51 mg/L

Conclusion:
Phenoxaprop-P –Ethyl According the calculation of risk threshold accumulation coefficient of this substance through soil, food, water and air, Puma Super herbicide is less toxic to human, and it required to follow safety guidance stated in directory on toxic and safety, during transportation, storage, loading/unloading and use. If HQ safety category is more than 0.2, then risk to poison from these substances is high. (Source: World Bank, Info of Environmental Agency of Canada, http://www.popstoolkit.com/tools/HHRA/NonCarcinogen.aspx).

Disposal of residue waste, intoxication and elimination method:

After three times washing, the inside of herbicide pack by pressured water, give it to recycling plant. If there is no recycling plant, than pack should be crushed and land filled in landfill side. It is prohibited to dispose herbicide with package without dissolve it. Do not fire an empty pack.

2.Almazis (Metilsulphuron Metile) herbicide

Technical definition: active substance is Metsulphuron metil, less dissolved in water, white-yellow granul powder.
Formula: $C_{14}H_{15}N_5O_6S$

Guidance to use: Used against pair seeds weeds, according guidance. During spreding it is prohibited to smoke or to eat. Spread time should be in evening period, chilly, less than 5 m/sec wind, no rain in 6 hours after spread.

Consequence: It is less toxic to hot blooded animals, not harmful to warm, small land rodents and birds, bit harmful to bees. Third category, medium Hazardous. Attention for use and safety issues for this substances are included in chapte 4.3 of this report.
Chemical risk assessment: (Population risk and safety assessment)
If Almazis (Metsulphuron metil) herbicide getting into skin, eyes than it may cause itchiness.

Dose impact and dose response:
Swallow dose LD50 (mg/kg) Experiment animal is rat> 5000 less poisonous character
Skin transfer dose LD50 (mg/kg) > 2000 rabbit
Inhale transfer dose LC50 (mg/L) > 5 (4 hour) rat
According to experiment on animals, Almazis herbicide is not causing cancer and not harm on reproductivity. It is observed during experiment that after long term use, loss of weight occurred.
Exposure assessment Exposure condition:
Loss of impermeability of the herbicide will cause spillage into land and water during transportation, load/unload and storage in warehouse and may spread by wind or by human step.
Exposure during preparation for spreading (Mixing, pouring etc.), during spreading in the field.
Affecteable people:
Affecteable people are mostly those who directly handle with herbicide who do not follow instruction on handling toxic materials (workers or group of workers).
No negative impact to local people and inhabitants.
Conditions for disaster and risk:
Inhaling evaporation of liquid substances or dust due to wrong handling procedure or by accident
Long term touching to skin due to unwearing protected clothes
Eye touch because of not wearing the protective glass
Environmental Risk of this pesticide
Hazardous for aquatic environment and aquatic plants and algae's. EC50 (72 hour) = 0.66 mg/L
Less negative impact to warms and bees.
Less negative impact to fishes and water animals: LC50 (96 hour) Salmon, water warm - magna 1000 mg/L.
Less negative impact to birds: LD50 Bobwhite (8 days) > 5620 mg/kg LD50 Goose (8 days) >2510 mg/kg.

Capacity of degradation in nature:
Metsulphuron metyle is degraded by chemical hydrolyze reaction and by bacterium. Degraded during 1-5 weeks and more quickly degraded when pH is less, temperature and soil humidity is high. Less probability of bioaccumulation.

Impact assessment:

There are no risk for water animals and fishes, around irrigated and non irrigated agricultural fields in desert and steppe zone because of no those animals.
Also there is less risk for steppe birds because of herbicides are mixed by technological requirements and impact dose will be less. For Mongolian case, those herbicides were used from the socialist period for long time and there were not any case registered on negative impact to people, animals and birds.

Conclusion:
Almazis (Metsulphuron Metile) less impact to human, workers and environment. In order to protect water algae, should be planned mitigation measure not to pour this herbicide into running water. Because of, Almazis (Metsulphuron Metile) has less impact to human, workers and environment then Puma-Super herbicide (Phenaksoprop-P-Etile), we do not do exposure and risk assessment calculation.

Disposal of residue waste:
After three times washing, the inside of herbicide pack by pressured water, give it to recycling plant. If there is no recycling plant, than pack should be crushed and land filled in landfill side. It is prohibited to dispose herbicide with package without dissolve it. Do not fire an empty pack.

3.Imazalil 41.6g/l+tebuconazol 25 g/l

Formula: $C_{16}\ H_{22}\ CLN_3\ O$

Guidance to use: Used against wheat and barleys root decay, seeds mould, for disinfection according guidance.

Consequence: Category of Hazardousness is 2. Harmful to fishes and water organisms. In order to mitigate spread to water, air and soil, strictly follow user guidance. Attention for use and safety issues for this substances are included in chapte 4.3 of this report.

Population risk assessment, safety assessment:
If Bulat fungicide gets into skin, eye and respiratory track, it can cause itchiness.

Reaction dose, impact dose:
Swallow lethal dose LD50 (mg/kg) experimental animal: male rat 1700, female-4000 mouse> 5000, Lethal dose by skin for rat is LD50 (mg/kg) > 5000. No information on impact to cancer and repprodutivity.

Exposure assessment and Exposure condition:
Loss of impermeability of the fungicide will cause spillage into land and water during transportation, load/unload and storage in warehouse and may spread by wind or by human step.
Exposure during preparation for spreading (Mixing, pouring etc.), during spreading in the field. After spreading, dust from the plant surface can get into respiratory tract.

Affecteable people:
Affecteable people are mostly those who directly handle with herbicide who do not follow instruction on handling toxic materials (workers or group of workers).
No negative impact to local people and inhabitants.

Possible ways of danger:
Inhaling evaporation of liquid substances or dust due to wrong handling procedure or by accident
Long term touching to skin due to unwearing protected clothes
Swallow fungicide accidently.
Transfer by polluted food

Environmental Risk Assessment:
Hazardous for aquatic environment and aquatic animals. Less negative impact to warms and bees. But for other insects, Hazardous
Poisonous character for birds (lethal dose): LD50 Bobwhite > 4438 mg/kg

Impact assessment:
There are no risk for water animals and fishes, around irrigated and non irrigated agricultural fields in desert and steppe zone because of no those animals.
Also there is less risk for steppe birds because of herbicides are mixed by technological requirements and impact dose will be less. For Mongolian case, those herbicides were used from the socialist period for long time and there were not any case registered on negative impact to people, animals and birds. Impact to human and workers for Bulat and Puma-super herbicide is same.

Disposal of residue waste, ways to intoxication and disposal:
After three times washing, the inside of fungicide pack by pressured water, give it to recycling plant. If there is no recycling plant, than pack should be crushed and land filled in landfill side. It is prohibited to dispose fungicide with package without dissolve it. Do not fire an empty pack.

Conclusion:
According the calculation of risk threshold accumulation coefficient of Imazalil and Tebuconazol substances through soil, food, water and air, Bulat fungicide is less toxic to human, and it required that to follow a safety guidance stated in directory on toxic and safety, during transportation, storage, loading/unloading and use.

4.<u>Nitrogenous fertilizer</u>
Formula: NH4N03

Physic chemical characteristics:
Ammonify. Ammonify is containing ammonium and nitrate. Ammonify contains 34.6 % of nitrate and ammonium nitrogen (1th category). This fertilizer formulated from Ammonia gas 56-60 % and azotic acid by neutralization process.
$HN0_3$ + МНз(gas) = NH_4N0_3 Evoparating water and dry it until 95-98 % of 1чГ$H_4$1чЮ$_3$ content. Nitrate ammonium is very absorbing the humide. In order to reduce it, mixed a filling substances (phosphorous powder, gypsum, caolinite etc.) and it is getting yellower. Nowadays it is produced as granul. Granul has more spreading and skimming physical characteristic than crystal. Ammonify contens 34.6 % of nitrogen, not more than 0.4 % of humidity, neutral in reaction, weak alkalinity. It is packed by water proof, 5 layer oil diffused paper or celluloise pack. Stored in dry and dark environment.
Attention for use and safety issues for this substances are included in chapte 4.3 of this report.

5.<u>Integrated Nitrogen phosphorous fertilizer (Ammophos)</u>

Formula: NH_4 H_2P0_4 This substance consists from phosphate ammonium. This salt contains from ammonium ion and phosphate ammonium and rapidly degrades in all kind of soil.
Ammophos 1 (1-12 % N, 46- 60% P_20_5) getting technology: Ordinary ammonium is neutralized by phosphorous acid.
NH_3 + H_3P0_4 = $NH_4H_2P0_4$. Attention for use and safety issues for this substances are included in chapte 4.3 of this report.

34. Items to be taken into consideration during use of chemical hazardous substances:

A.Puma super – consideration during spreading

Spread time should be in evening period, chilly, less than 5 m/sec wind, no rain in 6 hours after spread. Spreading should be 6-12 hours before bee's fly time, bee's protection zone in no less than 1-2 km.

B.Almazis- consideration during spreading
Spread time should be in evening period, chilly, less than 5 m/sec wind, no rain in 6 hours after spread. Spreading should be 6-12 hours before bee's fly time, bee's protection zone in no less than 1-2 km.

C.Disinfection work:
Plantation seeds should be disinfected, packed into plastic bag and put notes on hazardous safety and store. Disinfected seeds prohibited to use as food and open transportation.
Disinfection should be done 200 m away from apartment, river and livestock fences. People working on disinfection or working with disinfected seeds should wear protection clothes, protection glasses and rubber gloves and used clothes and tools should be washed.

Registration of use and disbursement of chemical hazardous substances

35. Aimag DFASME will fill special form (Annex 1 of order #45 of MNET order: Form HB 1-10) by each chemical substances received. (Annex 11,12 Registration of plant protection chemical substances, Less toxic chemical substances registration)
36. About each registered chemical hazardous substances reference information should be prepared and regularly used and monitored using special form.
37. If substance do not have label, production data and safety references, then will not register until getting those information from producer and not registered substances not allowed for use.
38. Warehouse person and officer responsible for environment will be responsible for registration, obtaining safety information of substances, their use, disposal and spillage.

Registration on storage and disposal of chemical hazardous substances

39. Registration on storage and disposal of chemical hazardous substances should be according guidelines (Annex 13: Order of Ministry of environment # 127, from 1 of July 2003).
40. According guidelines, registration should be taken to every substances.
41. About intoxication of hazardous waste should be registered on registration book. For this registration responsible entities generating those wastes.

Other issues

42. It is prohibited to use chemical substances packing into domestic use.
43. Citizen, entities should carry comprehensive registration on use and disbursement of chemical hazardous wastes (by name and type), and should submit report on disposal and residue, to local governor office.
44. From soil quality depends crop quality and from crop, depends health of human and livestock, so regular soil quality monitoring is essential.
45. Citizens and entities that planting vegetables and crops, every 3-4 years should analize their soil quality anayze be special laboratories, and analyze cost should be budgeted accordingly.

Structural and procedural controls:

46. Due to project planning stage, there are no any activity and small scale construction on going. Therefore, there is no structural controls have not been created. But in the future of project implementation there should be established following kinds of structural controls:
    - Storages for pesticides and chemical fertilizers have to have flood protection cannel, bund and drainage depending on their geographical conditions of the site.
    - Wool washing, dairy processing units should have small scaled sewage water treatment facility or filtration facility.

- Solid waste control structures should be included in small scaled construction activities within the project
- Cow farms planned in the frame of the project have to have structure to control the manure will be produced from the farm or include specific technology to make briquette using the manure.
- Establish a commission on extinguishing packs of pesticides, chemical fertilizers and aseptic in each of project soums
- Permit and control pesticide application and personal protective equipment to be used only if they comply with quality standards;

5.4 Activities and Work Plan

5.4.1 Mitigation and prevention activities

47. Following activities should be carried out for mitigation and prevention:
    - Study of main species of pests in project soums and define appropriate, adequate, innocuous methods of fighting.
    - Define current situation and capacity of using and distributing pesticides in project aimag and soums.
    - Evaluate the quality of importing and distributing pesticides in project aimags;
    - Promote the advantages/disadvantages of using pesticides, and requirements, procedures for pesticide application, taking into account appropriate, internationally agreed technical guidelines and standards;
    - Introduce biological and botanical pesticides and encourage, promote the development of alternatives for reducing risks like biological control methods and techniques, non-chemical pesticides and pesticides of low risk to humans and the environment.
    - Promote the use of pesticide application methods and equipment that pose low risks to human health and the environment and more efficient, cost-effective.
    - Promote and advertise IMP and related laws, legislation and guidelines in project area and to project partners, stakeholders and target groups.
    - Organize and carry out checking the quality of pesticides and their application process, and personal protective equipment;
    - Provide technical assistance to local farmers and disseminate educational materials of all types to pesticide users, farmers, herders' groups, agricultural officers and other interested parties.
    - Control the practices in pesticide management, implementing and adhere the laws, regulations and guidelines in project soums:
    - Develop and promote resistance management strategies to prolong the useful life of valuable pesticides and reduce the adverse effects resulting from the development of resistance of pests to pesticides.
    - Improve pesticide storages at ADFALI and construct proper storages at soum level.

5.4.2 Institutional Strengthening

48. Establish a Pest Management Coordinating Committee at aimag level including representatives of ASIA, ADET, ADFALI and aimag, soum administration to coordinate and organize adhere to the provisions of the EMP and this PMP as a standard for the storing, distribution and advertising of pesticides for project stakeholders, particularly for farmers lacking appropriate knowledge and advisory services.
49. Develop a mechanism for controlling the transportation process of pesticides to the end-user, keeping track of major uses and the occurrence of any problems arising from the use of pesticides.

50. Develop a local regulation and schedule for controlling and monitoring pesticide application practices, pest management implementation and adhere the laws, legislation and regulations at soum level.
51. Develop local rule for registration of pesticide users, traders and establish a commission on extinguishing packs of pesticides, chemical fertilizers and aseptic in each of project soums.
52. Establish pesticide registration schemes and infrastructures under which pesticide products can be registered prior to local use and ensure that each pesticide product is registered before it can be made available for use;

5.4.3 Training

53. Provide training for environmental inspectors, agricultural officers and soum government staff on PMP, IPM and laws, legislation, related regulation and guidelines.
54. Introduce the necessary laws and legislation for the regulation of pesticides and make provisions for its effective enforcement, including the establishment of appropriate educational, advisory, extension and health-care services, using IFC's EHS guidelines.
55. Provide trainings for local inspectors and farmers on using and distributing of pesticides. Training should take full account of local needs, social and economic conditions, levels of literacy.
56. Conduct ongoing practical training in using of pesticide application methods and equipment that pose low risks to human health and the environment, more efficient and cost-effective.
57. Organize Participatory Monitoring and Evaluation training for representatives of all stakeholders.
58. Provide technical assistance to local Governments, institutions and officials especially those lacking technical expertise in the assessment of the relevant data on pesticides;

5.4.4 Institutional arrangements, coordination of responsibilities

59. Project aimag Governments have the overall responsibility to regulate the availability, distribution and use of pesticides in their aimags and should ensure the allocation of adequate resources in the ASIA and in the project involved soums for this mandate.
60. ASIA and ADET should observe and control the practices in pesticide management, implementing and adhere the laws, regulations and guidelines, especially in project soums. They should adhere to the provisions of the EMP and this PMP as a standard for the storing, distribution and advertising of pesticides, particularly for farmers lacking appropriate knowledge and advisory services.
61. They should pay attention to the following issues:
    - supply of pesticides of adequate quality, packaged and labelled as appropriate for each specific market;
    - in close cooperation with procurers of pesticides, adhere closely to provisions of FAO guidelines on tender procedures;
    - pay special attention to the choice of pesticide formulations and to presentation, packaging and labelling in order to reduce risks to users and minimize adverse effects on the environment;
    - provide, with each package of pesticide, information and instructions in a form and language adequate to ensure effective use and reduce risks during handling;
    - be capable of providing effective technical support, backed up by full product stewardship to field level, including advice on disposal of pesticides and used pesticide containers, if necessary;
    - control the transportation process of pesticides to the end-user, keeping track of major uses and the occurrence of any problems arising from the use of pesticides.
62. LCP PIU should, to the extent possible:
    - provide technical assistance to local Governments, institutions and officials especially those lacking technical expertise in the assessment of the relevant data on pesticides;

- ensure that good trading practices are followed in the import of pesticides, especially to those soums with limited possibilities of transportation.

63. National and international organizations, local governments and inspectors should take coordinated action to disseminate educational materials of all types to pesticide users, farmers, herders' groups, agricultural officers and other interested parties. Similarly, users should seek and understand educational materials before applying pesticides and should follow proper procedures.
64. Concerted efforts should be made by governments to develop and promote the use of IPM. Furthermore, project donor agencies and MOFALI should support the development of national IPM policies and improved IPM concepts and practices. These should be based on scientific and other strategies that promote increased participation of farmers (including women's groups), extension agents and on-farm researchers.
65. National and international organizations should collaborate to support developing and promoting resistance management strategies to prolong the useful life of valuable pesticides and reduce the adverse effects resulting from the development of resistance of pests to pesticides.

5.4.5 Monitoring

66. PIU should establish monitoring committees at aimag/soum level and develop their operational rule and regulation and the Monitoring Committee shoud have following responsibilities:
    - Define criteria and indicators for Participatory Monitoring and Evaluation the implementation of PMP, impacts and risks associated with pesticide use.
    - Carry out regular monitoring and evaluation, impact assessment etc.
    - Collect and record data on quality, quantity and use of pesticides imported and distributed to project aimags and soums and inform to project partners;
    - Re-register the pesticides used in project soums to ensure the periodic review of pesticides, thus ensuring that prompt and effective measures can be taken if new information or data on the performance or risks indicate that regulatory action is needed;
    - Coordinate all stakeholders collaboration for PMP monitoring and organize stakeholders meeting and workshops to summarize findings and improve implementation process.

67. The PMP should monitored through collaborative action of local governments, project stakeholders individually or in groupings, other appropriate NGOs and partners of the LCP, international, governmental and non-governmental organizations and the pesticide users.
68. The PMP should be brought to the attention of all concerned in the regulation, distribution and use of pesticides, so that local governments, pesticide users, international institutions, agricultural and food producers groups (such as cooperatives, groups and associations) that are in a position to influence good agricultural practices, understand their shared responsibilities in working together to ensure that the objectives of the PMP are achieved.
69. All parties should implement and promote its significance, principles and ideas expressed in the plan, irrespective of other parties' ability to monitor the PMP. Pesticide users should cooperate fully in the implementing of PMP and participate irrespective of a government's ability to monitor the PMP.
70. WB and other LCP related international organizations should give full support to the monitoring of the PMP.
71. Aimag Governments, ADFALI and ADET in collaboration with PIU, should monitor the implementation of the PMP and periodically review the relevance and effectiveness of the PMP and report on progress made to the MOFALI and WB.
72. Pesticide users at soum level are requested to provide reports to the Environmental Inspectors on their application activities related to monitoring of PMP.
73. Local NGOs and other interested parties are invited to monitor activities related to the implementation of PMP and report these to the PIU.

6.Budget for implementing PMP

74. The estimated budget for implementing all activities of PMP is totally USD$ 106’000.00 (One hundred and six thousand USD only) and is estimated as following:

#	Type of expenses	Cost Estimates USD$
1	Promotion and advertisement of the PMP	6000.00
2	Support the implementation of mitigation activities	30’000.00
3	Support the implementation of activities for Institutional strengthening	20’000.00
4	Support the implementation of Training activities	10’000.00
5	Budget for the Monitoring activities	30’000.00
6	Budget for public consultation in 8 aimags	10’000.00
	TOTAL	106’000.00

Annex 2. Environmental Specifications For Construction

General

31. The Contractor and his employees shall adhere to the mitigation measures set down in these specifications to prevent harm and nuisances on local communities, and to minimize the impacts in construction and operation on the environment.
32. Remedial actions, which cannot be effectively carried out during construction, should be carried out on completion of the works (and before issuance of the acceptance of completion of works):
    - All affected areas should be landscaped and any necessary remedial works should be undertaken without delay, including grassing and reforestation;
    - water courses should be cleared of debris and drains and culverts checked for clear flow paths; and
    - All sites should be cleaned of debris and all excess materials properly disposed;
    - Borrow pits should be restored.

Construction Activities and Environmental Rules for Contractors

33. The following information is intended solely as broad guidance to be used in conjunction with local and national regulations. Before initiation of construction activities, the Contractor shall present the Project Engineer with a Construction Plan which explicitly states how he plans to abide by these specifications. After approval of such Plan by the Project Engineer, construction activities can proceed.

Prohibitions

34. The following activities are prohibited on or near the project site:
    - Cutting of trees for any reason outside the approved construction area;
    - Hunting, fishing, wildlife capture, or plant collection;
    - Use of unapproved toxic materials, including lead-based paints, asbestos, etc.;
    - Disturbance to anything with architectural or historical value;
    - Building of fires;
    - Use of firearms (except authorized security guards);
    - Use of alcohol by workers.

Transport

35. The Contractor shall use selected routes to the project site, as agreed with the Project Engineer, and appropriately sized vehicles suitable to the class of roads in the area, and shall restrict loads to prevent damage to local roads and bridges used for transportation purposes. The Contractor shall be held responsible for any damage caused to local roads and bridges due to the transportation of excessive loads, and shall be required to repair such damage to the approval of the Project Engineer.
36. The Contractor shall not use any vehicles, either on or off road with grossly excessive, exhaust or noise emissions. In any built up areas, noise mufflers shall be installed and maintained in good condition on all motorized equipment under the control of the Contractor.
37. Adequate traffic control measures shall be maintained by the Contractor throughout the duration of the Contract and such measures shall be subject to prior approval of the Project Engineer.

Workforce and Camps

38. The Contractor should whenever possible locally recruit the majority of the workforce and shall provide appropriate training as necessary.
39. The Contractor shall provide adequate lavatory facilities (toilets and washing areas) should be provided for the number of people expected to work in the work site. Toilet facilities should also be provided with adequate supplies of hot and cold running water, soap, and hand drying devices.
40. The Contractor shall install and maintain a temporary septic tank system for any residential labor camp and without causing pollution of nearby watercourses.
41. The Contractor shall establish a method and system for storing and disposing of all solid wastes generated by the labor camp and/or base camp.
42. The Contractor shall not allow the use of fuel wood for cooking or heating in any labor camp or base camp and provide alternate facilities using other fuels.
43. The Contractor shall ensure that site offices, depots, asphalt plants and workshops are located in appropriate areas as approved by the Project Engineer and not within 500 meters of existing residential settlements and not within 1,000 meters for asphalt plants.
44. The Contractor shall ensure that site offices, depots and particularly storage areas for diesel fuel and bitumen and asphalt plants are not located within 500 meters of watercourses, and are operated so that no pollutants enter watercourses, either overland or through groundwater seepage, especially during periods of rain. This will require lubricants to be recycled and a ditch to be constructed around the area with an approved settling pond/oil trap at the outlet.
45. The contractor shall not use fuel wood as a means of heating during the processing or preparation of any materials forming part of the Works.

Waste Management and Erosion:

46. Solid, sanitation, and, hazardous wastes must be properly controlled, through the implementation of the following measures:

Waste Management:

47. Minimize the production of waste that must be treated or eliminated.
48. Identify and classify the type of waste generated. If hazardous wastes are generated, proper procedures must be taken regarding their storage, collection, transportation and disposal.
49. Identify and demarcate disposal areas clearly indicating the specific materials that can be deposited in each.
50. Control placement of all construction waste (including earth cuts) to approved disposal sites (>300 m from rivers, streams, lakes, or wetlands).Dispose in authorized areas all of garbage, metals, used oils, and excess material generated during construction, incorporating recycling systems and the separation of materials.

Erosion Control:

51. Disturb as little ground area as possible, stabilize that area as quickly as possible, control drainage through the area, and trap sediment onsite. Erect erosion control barriers around perimeter of cuts, disposal pits, and roadways
52. Conserve topsoil with its leaf litter and organic matter, and reapply this material to local disturbed areas to promote the growth of local native vegetation.
53. Apply local, native grass seed and mulch to barren erosive soil areas or closed construction surfaces.
54. Apply erosion control measures before the rainy season begins preferably immediately following construction. Install erosion control measures as each construction site is completed.
55. In all construction sites, install sediment control structures where needed to slow or redirect runoff and trap sediment until vegetation is established. Sediment control structures include windrows of logging slash, rock berms, sediment catchment basins, straw bales, brush fences, and silt.
56. Control water flow through construction sites or disturbed areas with ditches, berms, check structures, live grass barriers, and rock
57. Maintain and reapply erosion control measures until vegetation is successfully established.
58. Spray water on dirt roads, cuts, fill material and stockpiled soil to reduce wind-induced erosion, as needed

Maintenance:

59. Identify and demarcate equipment maintenance areas (>15m from rivers, streams, lakes or wetlands). Fuel storage shall be located in proper areas and approved by the Project Engineer.
60. Ensure that all equipment maintenance activities, including oil changes, are conducted within demarcated maintenance areas; never dispose spent oils on the ground, in water courses, drainage canals or in sewer systems.
61. All spills and collected petroleum products shall be disposed of in accordance with standard environmental procedures/guidelines. Fuel storage and refilling areas shall be located at least 300m from all cross drainage structures and important water bodies or as directed by the Engineer.

Earthworks, Cut and Fill Slopes

62. All earthworks shall be properly controlled, especially during the rainy season.
63. The Contractor shall maintain stable cut and fill slopes at all times and cause the least possible disturbance to areas outside the prescribed limits of the works.
64. The Contractor shall complete cut and fill operations to final cross-sections at any one location as soon as possible and preferably in one continuous operation to avoid partially completed earthworks, especially during the rainy season.
65. In order to protect any cut or fill slopes from erosion, in accordance with the drawings, cut off drains and toe-drains shall be provided at the top and bottom of slopes and be planted with grass or other plant cover. Cut off drains should be provided above high cuts to minimize water runoff and slope erosion.
66. Any excavated cut or unsuitable material shall be disposed of in designated disposal areas as agreed to by the Project Engineer.
67. Disposal sites should not be located where they can cause future slides, interfere with agricultural land or any other properties, or cause soil from the dump to be washed into any watercourse. Drains may need to be dug within and around the tips, as directed by the Engineer

Stockpiles and Borrow Pits

68. Operation of a new borrowing area, on land, in a river, or in an existing area, shall be subject to prior approval of the Project Engineer, and the operation shall cease if so instructed by the Project Engineer. Borrow pits shall be prohibited where they might interfere with the natural or designed

drainage patterns. River locations shall be prohibited if they might undermine or damage the river banks, or carry too much fine material downstream.

69. The Contractor shall ensure that all borrow pits used are left in a trim and tidy condition with stable side slopes, and are drained ensuring that no stagnant water bodies are created which could breed mosquitoes.
70. Rock or gravel taken from a river shall be far enough removed to limit the depth of material removed to one-tenth of the width of the river at any one location, and not to disrupt the river flow, or damage or undermine the riverbanks.
71. The location of crushing plants shall be subject to the approval of the Engineer, and not be close to environmentally sensitive areas or to existing residential settlements, and shall be operated with approved fitted dust control devices.
72. In any borrow pit and disposal site, the Contractor shall:
    - Identify and demarcate locations for stockpiles and borrow pits, ensuring that they are 15 meters away from critical areas such as steep slopes, erosion-prone soils, and areas that drain directly into sensitive water bodies
    - Limit extraction of material to approved and demarcated borrows pits.
    - Stockpile topsoil when first opening the borrow pit. After all usable borrow has been removed, the previously stockpiled topsoil should be spread back over the borrow area and graded to a smooth, uniform surface, sloped to drain. On steep slopes, benches or terraces may have to be specified to help control erosion.
    - Excess overburden should be stabilized and revegetated. Where appropriate, organic debris and overburden should be spread over the disturbed site to promote revegetation. Natural revegetation is preferred to the extent practicable.
    - Existing drainage channels in areas affected by the operation should be kept free of overburden.
    - Once the job is completed, all construction -generated debris should be removed from the site.

Disposal of Construction and Vehicle Waste

73. The Contractor shall establish and enforce daily site clean-up procedures, including maintenance of adequate disposal facilities for construction debris
74. Debris generated due to the dismantling of the existing structures shall be suitably reused, to the extent feasible, in the proposed construction (e.g. as fill materials for embankments). The disposal of remaining debris shall be carried out only at sites identified and approved by the Project Engineer. The contractor should ensure that these sites (a) are not located within designated forest areas; (b) do not impact natural drainage courses; and (c) do not impact endangered/rare flora. Under no circumstances shall the contractor dispose of any material in environmentally sensitive areas.
75. In the event any debris or silt from the sites is deposited on adjacent land, the Contractor shall immediately remove such, debris or silt and restore the affected area to its original state to the satisfaction of the Project Engineer.
76. All arrangements for transportation during construction including provision, maintenance, dismantling and clearing debris, where necessary, will be considered incidental to the work and should be planned and implemented by the contractor as approved and directed by the Engineer.

Safety during Construction

77. The Contractor's responsibilities include the protection of every person and nearby property from construction accidents. The Contractor shall be responsible for complying with all national and local safety requirements and any other measures necessary to avoid accidents, including the following:
    - Carefully and clearly mark pedestrian-safe access routes;

- If school children are in the vicinity, include traffic safety personnel to direct traffic during school hours;
- Maintain supply of supplies for traffic signs (including paint, easel, sign material, etc.), road marking, and guard rails to maintain pedestrian safety during construction;
- Conduct safety training for construction workers prior to beginning work;
- Provide personal protective equipment and clothing (goggles, gloves, respirators, dust masks, hard hats, steel-toed and –shanked boots, etc.,) for construction workers and enforce their use;
- Post Material Safety Data Sheets for each chemical present on the worksite;
- Require that all workers read, or are read, all Material Safety Data Sheets. Clearly explain the risks to them and their partners, especially when pregnant or planning to start a family. Encourage workers to share the information with their physicians, when relevant;
- Ensure that the removal of asbestos-containing materials or other toxic substances be performed and disposed of by specially trained workers;
- During heavy rains or emergencies of any kind, suspend all work.
- Brace electrical and mechanical equipment to withstand seismic events during the construction.

Nuisance and Dust Control

78. To control nuisance and dust the Contractor should:
    - Maintain all construction-related traffic at or below 15 mph on streets within 200 m of the site;
    - Maintain all on-site vehicle speeds at or below 10 mph.
    - To the extent possible, maintain noise levels associated with all machinery and equipment at or below 90 db.
    - In sensitive areas (including residential neighborhoods, hospitals, rest homes, etc.) more strict measures may need to be implemented to prevent undesirable noise levels.
    - Minimize production of dust and particulate materials at all times, to avoid impacts on surrounding families and businesses, and especially to vulnerable people (children, elders).
    - Phase removal of vegetation to prevent large areas from becoming exposed to wind.
    - Place dust screens around construction areas, paying particular attention to areas close to housing, commercial areas, and recreational areas.
    - Spray water as needed on dirt roads, cut areas and soil stockpiles or fill material.
    - Apply proper measures to minimize disruptions from vibration or noise coming from construction activities.

Demolition of Existing Infrastructure

79. The Contractor shall implement adequate measures during demolition of existing infrastructure to protect workers and public from falling debris and flying objects. Among these measures, the Contractor shall:
    - Set aside a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels
    - Conduct sawing, cutting, grinding, sanding, chipping or
    - chiseling with proper guards and anchoring as applicable
    - Maintain clear traffic ways to avoid driving of heavy equipment over loose scrap
    - Use of temporary fall protection measures in scaffolds andout edges of elevated work surfaces, such as hand rails and toe boards to prevent materials from being dislodged

- Evacuate all work areas during blasting operations, and use blast mats or other means of deflection to minimize fly rock or ejection of demolition debris if work is conducted in proximity to people or structures
- Provide all workers with safety glasses with side shields, face shields, hard hats, and safety shoes

Community Relations

80. To enhance adequate community relations the Contractor shall:
    - Inform the population about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate.
    - Limit construction activities at night. When necessary ensure that night work is carefully scheduled and the community is properly informed so they can take necessary measures.
    - At least five days in advance of any service interruption (including water, electricity, telephone, bus routes) the community must be advised through postings at the project site, at bus stops, and in affected homes/businesses.

Physical Cultural Property Chance-finds Procedures

81. If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:
    - Stop the construction activities in the area of the chance find;
    - Delineate the discovered site or area;
    - Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the National Culture Administration take over;
    - Notify the supervisory Engineer who in turn will notify the responsible local authorities and the National Culture Administration immediately (within 24 hours or less);
    - Responsible local authorities and the National Culture Administration would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archeologists of National Culture Administration. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
    - Decisions on how to handle the finding shall be taken by the responsible authorities and National Culture Administration. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
    - Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities; and
    - Construction work could resume only after permission is given from the responsible local authorities or National Culture Administration concerning safeguard of the heritage.

Hazardous Materials

82. If the construction site is expected to have or suspected of having hazardous materials (asbestos containing materials in debris from demolished buildings) the Contractor will be required to prepare a Hazardous Waste Management Plan. To be approved by the Project Engineer. The plan should be made available to all persons involved in operations and transport activities. Removal and disposal of existing hazardous wastes in project sites should only be performed by specially trained personnel following national or provincial requirements, or internationally recognized procedures

Health Services, HIV/AIDS Education

83. The Contractor shall provide basic first aid services to the workers as well as emergency facilities foe emergencies for work related accidents including as medical equipment suitable for the personnel, type of operation, and the degree of treatment likely to be required prior to transportation to hospital.
84. The Contractor shall be responsible for implementing a program for the detection screening of sexually transmitted diseases, especially with regard to HIV/AIDS, amongst laborers is actually carried out.
85. The Contractor shall include in his proposal the outline of a Health Plan. The Project Engineer will issue a certificate of compliance to the Contractor prior to the initiation of Construction.

Environmental Supervision during Construction

86. The Project Engineer will supervise compliance with these specifications. Major non-compliance by the Contractor will be cause for suspension of works and other penalties until the non-compliance has been resolved to the satisfaction of the Project Engineer. Contractors are also required to comply with national and municipal regulations governing the environment, public health and safety.

Annex 3. Complaint Form. World Bank grievance redress service (GRS)

COMPLAINT FORM

WORLD BANK GRIEVANCE REDRESS SERVICE (GRS)

This form can be filled out by clicking or tapping where indicated, then typing to enter the requested information. When completed, you may print and sign, or you may upload a photo of your signature (instructions provided below) and e-mail the completed form.

1. Complainant's Information *(This information must be provided. The identity of complainants will be kept confidential if they request so)*

Names and Titles: _____

(☐Dr., ☐Mr., ☐Ms., ☐Mrs. *Please check one* or)

Positions/Organizations *(If any):* _____

Addresses: _____

Contact numbers: _____

E-mail addresses: _____

Please indicate how you prefer to be contacted (e-mail, mobile, etc.): Click or tap here to enter text.

Do you request that identity be kept confidential? *Check Yes or No below*

☐Yes ☐No

2. Information on Authorized Representative *(If any). (If Authorized Representatives are not complainants themselves, their names will be disclosed as needed, in order to ensure transparency).*

Names and Titles _____

Positions/Organizations *(If any)* _____

Addresses _____

Contact numbers _____

E-mail addresses _____

3. Project Information

Project name (and project number if known) _____

Project location (Country, Province, City, etc.) _____

4. The Complaint

Please describe your grievance/complaint/issue/concern? _____

_____

Why do you believe that the alleged harm results directly from the project?_____

_____

Please include any other information that you consider relevant._____

_____

5. Previous Efforts to Resolve the Complaint

Have you raised your complaint with the grievance mechanism of the project or the grievance mechanism of the project-implementing agency?

☐Yes If YES, please provide the following:

When, how and with whom the issues were raised.

_____

Please describe any response received from and/or any actions taken by the project level grievance mechanism. Please also explain why the response or actions taken are not satisfactory.

_____

☐No If NO, why not?_____

How do you wish to see the complaint resolved? _____

_____

Do you have any other matters or facts (including supporting documents) that you would like to share?

_____

Signature of Complainant (if an Authorized Representative is submitting the complaint and has a separate letter providing authorization that has been signed by the Complainant, the Complainant is not required to sign below): *You may print the form and sign it. Alternatively you may click in the box below and add a photo of your signature if you prefer.*

_____

Signature of Authorized Representative: *You may print the form and sign it. Alternatively you may click in the box below and add a photo of your signature if you prefer.*

_____

Date: _____

Name of the person who completed this form if different from Complainant and/or Authorized Representative:

_____

Please send the complaint to:
The World Bank
Grievance Redress Service (GRS)
MSN MC 10-1018

Email: grievances@worldbank.org

Fax: +1 – 202 – 614 – 7313

1818 H St NW
Washington, DC 20433, USA

Complaints may be submitted by mail, fax, e-mail, or hand delivery to the World Bank headquarters or any World Bank country office.

Annex 4: Sub-project Environmental and Social Review Form

A. Applicant information

Organization:	
individual contact and title:	Address, phone & e-mail
Activities (brief description):	Total value of sub-project:
Location of activity (aimag and soum):	Start and end date of sub-project:

B. Activities, screening results, and risk assessment result

TABLE 1 **Proposed activities**	**Screening result** (Step 2 of instructions)				**Risk assessment result** (Step 5 of instructions. Complete for all moderate and high-risk activities)	
	Low Risk	Moderate Risk	High Risk	Exclusion list	Activities with moderate risk	Activities with high risk
1.						
2.						
3.						

(continue on additional page if necessary)

C. Summary of environmental and social risk review

	The project contains. . .	Recommended action:
☐	Activities in the LCP's exclusion list	*The sub-project proposal cannot be approved*
☐	Only low risk activities	*No further environmental review required*
☐	Only moderate risk Category B activities	*Further environmental, social or climate impact assessment required before proposed activity can be approved.*

D. If any activities are 'moderate' or 'high risk', the following information must be provided:

D.1 Summary of activities (including background, justification for the proposed activities, expected outputs of the proposed activities).

D.2 Description of activities (including listing of moderate or high risk activities, description of each activity and its potential impacts, and proposed risk mitigation measures). This may be presented in narrative or tabular format:

Moderate or high risk activities	**Description**	**Potential impacts**	**Mitigation measures if required**

D.3 Environmental situation (including a description of the potentially affected sites, and their ecological values).

D.4 Evaluation of each activity with respect to environmental impact potential (including qualitative description of impacts and quantitative estimate of area of grassland or forest affected).

D.5 Social situation (including a description of potentially affected people).

D.6 Evaluation of each activity with respect to social impact potential (including qualitative description of the types of likely impacts and quantitative estimate of numbers of people affected and extent of impacts).

E. Certification:

I, the undersigned, certify that the information on this form is correct and complete.

(Signature of the proponent) (Date)

BELOW THIS LINE FOR PIU USE ONLY

F. Sub-project environmental and social risk categories:

	The sub-project is categorized as. . .	Recommended action:
☐	**Ineligible:** Some activities on the LCP exclusion list are included in the sub-project proposal	*Give feedback to proponent*
☐	**Category C**: i.e. only low risk activities	*No in-depth assessment required*
☐	**Category B:** all activities likely to have no significant adverse impacts if the appropriate mitigation and monitoring measures are implemented	*Further environmental, social or climate impact assessment required before proposed activity can be approved.*

G. Environmental and Social criteria for sub-projects:

Environmental Criteria	**Social Criteria**
Has no impact on biodiversity hotspots based on Mongolian Redlist	Contibution for increasing new job places
Has good potential to climate change adaptation (combating desertification, redusing land degradation, restoring water sources and pastureland, redusing number of livestock)	Potential for contributing in developing and increasing income generation and alternative livelihoods option
Contribute in restoring threatened ecosystem by human activities	Have no impacts to sustaining important cultural and historical heritages
Located outside or in the limited use zone of of PAs like National Parks and Strictly Protected Areas and other ecological sensitive sites	Experience and sustainability of existing institutional structures
Redusing use of chemicals and chemical fertilizers	Based on local initiatives and commitment
Sustainable management approach and technology will be used to keep carrying capacity of pastureland and natural reosurces	Contribition in decreasing unemployment

Note: Sub-projects which can affect critical natural habitats, water sources, cultural heritage or relics, protected areas, National Park, Strictly Protected Areas, natural reserves and other ecological sensitive sites should be excluded

I.Assessment of required follow-up:

	Mark if relevant	**Follow-up actions**
The sub-project includes activities on the exclusion list		Provide comments to sub-project proponent
Environmental risks		
The sub-project includes activities for which a general environmental assessment is required by national law		Prepare general EIA documentation
The sub-project includes activities for which a detailed environmental assessment is required by national law		Draft and issue ToR for detailed ESIA
The sub-project includes activities that may have limited environmental impacts but for which national law does not require a general or detailed EIA, but significant impacts may be likely		Draft and issue ToR for ESIA
The sub-project includes activities that may have significant (category A) environmental impacts but for which national law does not require a general or detailed EIA, and		Sub-project proposal will be disqualified
• The sub-project proponent has the expertise the design effective mitigation measures		Request sub-project proponent to draft EMP
• The sub-project proponent does not have the expertise to design effective mitigation measures		Draft and issue ToR for EMP
The sub-project will involve procurement or use of pesticides		Require PMP following EHS Guideline for Annual or Perennial Crop Production
Social risks		
The sub-project includes activities causing either economic or physical displacement affecting less than 200 people who are not ethnic minorities		Sub-project proposal will be disqualified
The sub-project includes activities causing either economic or physical displacement affecting more than 200 people who are not ethnic minorities		Sub-project proposal will be disqualified
The project includes activities that may impact on members of vulnerable ethnic minorities		Sub-project proposal will be disqualified
The project will involve tendering of construction works		Require EMP following EHS Guideline for OHS
The sub-project will involve tourism		Require EMP following EHS guideline for tourism and hospitality

Other potential impacts requiring follow-up safeguards:		

H. APPROVAL BY PIU:

PIU Safeguards Officer ☐ Approved ☐ Rejected	(print name)	(signature)
PIU Project Coordinator ☐ Approved ☐ Rejected	(print name)	(signature)

(if documentation is rejected, comments must be provided to applicant)

Annex 5: Environmental, Social Assessment Procedures

1. These procedures are applicable to all activities conducted under Components 1-3 of LCP. All requests to the PIU for funding must apply the screening procedures below using the Environmental and Social Review Form in Annex 5. The PIU local safeguards officer will then submit a Climate Risk Screening Form, a template for which is in Annex 6 to this Annex.
2. **Step 1: List specific proposed activities.** For each proposal (e.g. action plan, funding proposal for sub project), each sub-component (activity) of the proposal shall be listed in a Table (see Table 1).

TABLE 1: List of proposed activities

Proposed activities	**Screening result** (Step 2 of instructions)				**Risk assessment result** (Step 4 of instructions. Complete for all moderate and high-risk activities)	
	Low Risk	Moderate Risk	High Risk	Exclusion list	Activities with moderate risk	Activities with high risk
1.						
2.						
3.						
4.						
5.						
6.						

(continue on additional page if necessary)

Table 2: LCP Exclusion List

Category A (Highest-risk) project and <u>not</u> funded by LCP:
a. Any activity prohibited by Mongolian law. **b.** Actions likely to significantly threaten protected areas (e.g. introduction of exotic plants or animals) or to jeopardize threatened & endangered species or adversely modify their habitat[13] **c.** Conversion of forest to grazing lands[14] **d.** Construction of dams or other water control structures that flood undegraded grassland or forests **e.** Construction, upgrading or maintenance of roads that pass through undegraded forests.[15]

[13] Mongolia SPA Law
[14] WB Op 4.36 Forests
[15] WB Op 4.36 Forests

f.	Any infrastructure or other construction activity that causes economic or physical displacement[16]
g.	Any sub-project that would result in physical displacement of 200 or more individuals
h.	Any sub-project that would result in economic and/or physical displacement of more than 1000 people
i.	Any sub-project that would result in conversion of 100 or more hectares of land.
j.	Any sub-project that located in the Strictly Protected Area and Tourism zone and Core area of National Park

3. **Step 2: Assess risk rating of each activity.** For *each* activity listed in Table 1, refer to the exclusion list in Table 2 and the risk rating activities in Table 3 to determine whether it is 'low-risk', 'moderate risk' or 'high risk' or on the exclusion list. 'Low-risk' activities are activities that are not expected to have any adverse environmental and social impacts or risks. 'Moderate risk' activities may have potentially adverse risks and impacts upon the environment and on the social conditions of those concerned of a limited scale and any risks or impacts can be mitigated through state-of-the-art or standard mitigation measures. 'High risk' activities are activities that are likely to have adverse impacts on ecologically sensitive areas, to cause irreversible impacts, and to have impacts on a larger scale. Any project activities not categorizable into any of the activities listed in Table 3 shall be allocated a risk rating using professional experience and judgement.

4. **Step 3: Determine the sub-project risk category.** Based on the screening result in Table 1, categorize each sub-project activity as follows:
    - Sub-projects where all activities listed in Table 1 are 'low risk' shall be allocated to risk Category C;
    - Sub-projects where all activities listed in Table 1 are 'low risk' or 'moderate risk' shall be allocated to risk Category B;

A sub-project's risk categorization shall be determined by the highest risk assessment result among all the sub-project's activities. In addition, final determination of a sub-project risk categorization shall consider the cumulative impacts of individual activities. Where:

(a) the total number of people to be affected by physical displacement due to different sub-project activities is expected to reach 100 or more, or
(b) the total number of people to be affected by economic and/or physical displacement due to different sub-project activities is expected to reach 500 or more, or
(c) the total area of land subject to land use conversion due to different sub-project activities is expected to exceed 100 hectares, then the overall sub-project categorization shall be Category B. If the total numbers of people affected or total area of land subject to conversion exceeds the thresholds in Table 2 (exclusion list), **then the sub-project shall be ineligible for LCP funding**.

5. **Step 4:** For any sub-project categorized as Category B an Environmental and Social Review Form (see template in Annex 5) must be completed to determine the appropriate follow-up safeguard actions required by Mongolian Law and by LCP ESMF.
6. **Step 5:** The Environmental and Social Review Form, signed by the project proponent, shall be submitted together with the proposal to the PIU.
7. **Step 6:** The PIU safeguards officer will review the ESRF and assess the appropriate follow-up actions required by national law or by LCP ESMF.
8. **Step 7: Climate screening:** The PIU safeguards officer will use the information provided in the Environmental and Social Review Form to assess climate related risks.
9. **Step 8:** The responsible PIU officer and Project Coordinator shall sign on the completed review form.

[16] LCP is expected to invest only in small infrastructure, for which economic and physical displacement is not justified. Means should be sought to adjust locations and design in order to avoid people's livelihoods being affected by infrastructure construction.

[i] Labor Survey on New Graduates, retrieved from www.labornet.gov.mn