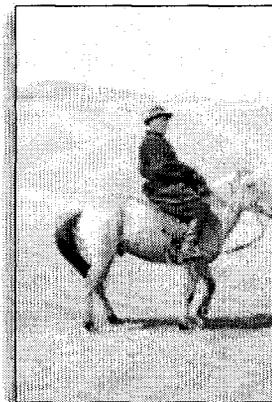
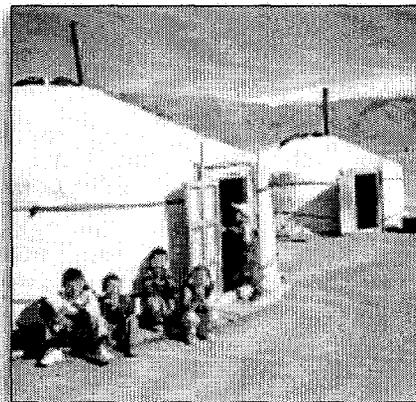


Final Report

**E509**  
Vol. 1

*Government of Mongolia*  
*European Commission Tacis Programme*  
*World Bank*

# Environmental and Social Assessment of the Sustainable Livelihoods Project



# FILE COPY

*December 2001*

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Presented here are the reports of the environmental assessment and social assessment of the proposed Sustainable Livelihoods Project.

*Volume 1* is the report of the dedicated environmental assessment carried out by ERM under the Tacis-funded Joint Environment Programme. Key findings and conclusions from the separately commissioned social assessment report have been incorporated into this.

*Volume 2* is the report of the dedicated social assessment. This was separately commissioned, and carried out by Natasha Pairaudeau. It is not an ERM report and therefore has not been subject to ERM procedures of quality control.

World Bank

*Volume 1: Environmental and Social  
Assessment of the World Bank  
Sustainable Livelihoods Project*

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### *Glossary of Mongolian Terms*

|                  |  |
|------------------|--|
| <i>Aimag</i>     | Province. The largest sub-national administrative unit. Mongolia is divided into 21 <i>aimags</i> .  |
| <i>Bag/heseg</i> | Sub-district. The smallest administrative unit. <i>Sum/khoroos</i> are divided into <i>bags/hesegs</i> .   |
| <i>Duureg</i>    | Urban district.  |
| <i>Heseg</i>     | The smallest administrative unit in urban centers. <i>Khoroos</i> are divided into <i>hesegs</i> .   |
| <i>Khoroo</i>    | Urban sub-district (in Ulaan Baatar).  |
| <i>Khural</i>    | Elected Council of Citizens' Representatives (found at each level of public administration: <i>bag/heseg</i> , <i>sum/khoroo</i> , <i>aimag/duureg</i> , and national levels). |
| <i>Sum</i>       | District. The sub-national administrative unit below <i>aimag</i> level.   |
| <i>Ger</i>       | Felt dwelling used by nomadic herders.   |

## *Acronyms*

|         |   |
|---------|---|
| APAC    | Aimag Poverty Alleviation Council                       |
| CIF     | Community Investment Fund Component                     |
| CIFMC   | Community Investment Fund Management Committee          |
| CITES   | Convention on International Trade in Endangered Species |
| DEIA    | Detailed Environmental Impact Assessment                |
| EA      | Environmental Assessment                                |
| EIA     | Environmental Impact Assessment                         |
| EMP     | Environmental Management Plan                           |
| EPA     | Environmental Protection Agency                         |
| FAO     | Food and Agriculture Organisation                       |
| GEIA    | General Environmental Impact Assessment                 |
| GoM     | Government of Mongolia                                  |
| JEP     | Joint Environmental Program                             |
| LDF     | Local Development Fund                                  |
| LIF     | Local Initiative Fund                                   |
| MAP-21  | Mongolian Action Plan for 21 Century                    |
| MNE     | Ministry of Nature and Environment                      |
| MoFA    | Ministry of Food and Agriculture                        |
| MOC     | Microfinance Outreach Component                         |
| NGO     | Non-Governmental Organisation                           |
| NPAC    | National Poverty Alleviation Committee                  |
| NPAP    | National Poverty Alleviation Program                    |
| PAD     | Project Appraisal Document                              |
| PAPO    | Poverty Alleviation Program Office                      |
| PAVGP   | Poverty Alleviation for Vulnerable Groups Project       |
| PIP     | Project Implementation Plan                             |
| PLSA    | Participatory Living Standards Assessment               |
| PMU     | Project Management Unit                                 |
| PRM     | Pastoral Risk Management                                |
| PRSP    | Poverty Reduction Strategy Paper                        |
| SLP     | Sustainable Livelihoods Project                         |
| LSPO    | Livelihoods Support Program Office                      |
| UMENGO  | Union of Mongolian Environmental NGOs                   |
| UNDP    | United Nation Development Program                       |
| WASH-21 | Water Supply, Sanitation and Hygiene Education Program  |
| WHO     | World Health Organisation                               |

## ***Executive Summary***

*This is the report of the environmental and social assessment of the proposed Sustainable Livelihoods Project (SLP) in Mongolia. Consistent with the World Bank's Operational Policy OP4.01, environmental and social assessment for the proposed SLP is regarded as an ongoing process that began around the time of project identification. This assessment (hereafter referred to as 'the EA') therefore draws upon several steps in the process of project identification and design. The environmental component was carried out over three stages from August-October 2001: firstly scoping of impacts and desk-based review of reports; secondly, in-depth stakeholder consultation carried out over three weeks in Mongolia in September 2001, including a series of interviews and workshops with stakeholders and key informants in Ulaan Bataar and rural Mongolia; and finally the preparation of a draft EA report, on which detailed comments from the Government of Mongolia, the World Bank, and the team responsible for PAD and PIP preparation were received. During drafting of the report, the key conclusions of a separately conducted dedicated social assessment were incorporated.*

### ***The Sustainable Livelihoods Project***

*The project consists of three main components:*

- Pastoral Risk Management (PRM), supporting the preparation and implementation of an integrated strategy to reduce herders' vulnerability to covariant risks due to dzud and drought;*
- Micro-Finance Services Outreach (MSO), supporting structural change in commercial and civil society provision of microfinance services in order to reach the poor and vulnerable;*
- Local Initiative Funds (LIF), supporting demand-driven mechanisms for beneficiary groups to select, co-finance, and execute investments in basic infrastructure and social services.*

*Following environmental and social safeguards screening procedures, the SLP has been assigned Category B.*

### ***Major EA Findings***

*The SLP has the potential to deliver a significant overall positive environmental impact, through a contribution to reduced land degradation in Mongolia. This conclusion is based on the following reasoning:*

- There is consensus that around 11 million ha (7% of Mongolia's pastureland) is suffering from land degradation.*
- There is evidence of climate change in Mongolia, which is probably accelerating land degradation directly due to drought, and indirectly due to the socio-economic impact of drought and dzud.*
- In addition, current pasture management patterns in Mongolia are accelerating land degradation, particularly in localized areas, for example due to concentration*

*of herds around sum centers and aimag centers.*

- *Therefore, successful actions to reduce herders' vulnerability through pastoral risk management offer a significant opportunity to contribute to reduced extent and severity of land degradation. Indeed it will be necessary to reduce land degradation in order to reduce herders' vulnerability to drought & dzud.*
- *Community-level or bag-level management planning of pasture is proposed as a key part of the project's integrated approach to pastoral risk management. The empowerment of herders or herder associations to manage their pasture is of potential for reducing land degradation, both in times of drought and dzud, and at all other times.*

*The SLP therefore will contribute to several commitments of the GoM to address land degradation, including those set out in the draft National Environmental Action Plan.*

*Furthermore, the SLP has the potential to deliver an overall positive social impact, by empowering herders to manage their livelihoods, and by contributing to rising living standards among poor households and herder households. This conclusion is based on the following reasoning:*

- *The intensive learning ICR carried out for the PAVGP, concluded that the PAVGP had a positive impact on poverty. The continuation of the LDF should maintain and further extend this impact.*
- *The Microfinance Services Outreach component will improve the currently limited access of poorer households to microfinance. Limited access constrains the ability of the poor to act to reduce their poverty and their vulnerability through savings, livelihood diversification and other actions.*
- *The design of the LIF component is based on the recognition of the perceived weakness of the LDF to adequately target the poor and to ensure social investments are demand driven. By paying additional attention to these issues, the SLP will ensure that positive social impacts are maximized and negative impacts avoided.*
- *Positive social impact should be greater still in the 8 core aimags where the combined actions of the LDF, LIF, PRM and microfinance components will reduce the vulnerability of the poor and the rural poor. In the no-project situation, drought, dzud, land degradation, and increased vulnerability would continue to significantly reduce living standards among poor and middle-poor herder households.*
- *Lower living standards in rural Mongolia are associated with rising malnutrition, increased incidence of disease, lower school attendance, depression, increased incidence of drunkenness, divorce, and higher incidence of domestic violence.*

#### **Mitigation of Potential Negative Impacts**

*The potential of the SLP to deliver positive improvements in reduced land degradation should far outweigh any localized environmental impacts of activities to be supported by the project. But in spite of the overall positive impact, certain of the project activities could have localized negative impacts.*

*Most of the developments under the PRM and LIF components will be small in scale, and the significance of the direct negative environmental impacts is likely to be small. This is especially the case in comparison to other developments that are increasing in frequency in rural Mongolia, for instance mining projects. However, in the event that some of the activities are scaled-up to wider areas (for example rodent control) following their successful piloting, there may be cumulative impacts. This provides the SLP with an opportunity to ensure that the pilot activities fully integrate the mitigation of environmental risks, in order that negative cumulative impacts are avoided when the activities are scaled-up.*

*The Microfinance Services Outreach component is not expected to have any direct environmental impacts, but it is likely to have indirect impacts. Indirectly, by contributing to an increased tendency amongst herders to convert their livestock assets into cash savings, it has potential to deliver positive environmental impacts. But there is also a risk that individual herders might use their access savings and credit to increase their herd sizes or to invest in income-generating activities that have a negative environmental impact. This provides opportunity to ascertain whether the improved access to microfinance does indeed result in a more sustainable management of the environment by herders. Therefore the EA proposes that this issue is explicitly examined during the project MTR and ex-post evaluation.*

*Due to the demand/community driven nature and 'open menu' approach of the LIF component, and the consequent unpredictability of specific LIF and LDF sub-projects, it is difficult to assess their potential environmental impacts. But the negative impacts of community infrastructure projects are not likely to be significant. Whether particular sub-projects have significant negative impacts will depend on their scale & location, and will be context-specific and localized. Those with potentially significant environmental impacts should undergo environmental screening or EIA, under the Mongolian system of EIA, before a decision on approval.*

*The EA has considered all of the potential negative impacts of SLP activities, in particular in discussion with the Government of Mongolia (GoM) and the FAO team that has assisted PAD and PIP preparation. GoM and the FAO team have striven to ensure that potential negative environmental impacts of the project will be avoided or minimized, and indeed have proposed a number of suggested alternative actions or strategies. This report provides details on several activities that may have negative impacts, and proposes mitigation actions based on discussions with GoM and the FAO team. These are: community-based rodent control, community-based control of predation, community-based construction & rehabilitation of wells, emergency restocking, haymaking, inter-sum/inter-aimag otor reserves, and veterinary services.*

### **Maximizing positive social impacts**

*The dedicated social assessment identified a series of recommendations to enhance the positive social impact of the project. Examples of are that: the stated target groups for SLP should be broadened, so they include all groups implicitly included in project documents, including herding and settled communities in rural and peri-urban areas; local*

*contributions under the LDF/LIF should be calculated on a project-by-project basis, rather than by a standard percentage; three-way contracts should be used under LDF/LIF and PRM components to define responsibilities of local government and groups or herders' associations; members of members of sum local government should act as community social workers, to ensure that the poorest herding households gain access to herder associations and other benefits of the PRM component; there should be allowance for participatory M&E; and that social assessment is integrated into the system of identifying, planning and monitoring projects.*

### ***Environmental and Social Management Plan***

*The EA sets out an environmental and social management plan (EMP), with an associated environmental management system. The design of the EMP will ensure that environmental sustainability is not considered in isolation of social, economic and institutional sustainability in the rural space. For example, it would be counterproductive if the SLP was to place a disproportionate burden on sum- or aimag- level environmental inspectors while other work, such as EIA of mining projects, deserve a significant proportion of their time.*

*The bulk of inputs to this project are required at aimag and sum levels. At these levels, there is an opportunity to build on the close working relationship of agricultural, environmental, social and health officers, and improve awareness of sustainable pastoral risk management among all officers. The SLP also provides an opportunity to build a closer working relationship and a shared understanding between the Ministry of Food and Agriculture and the Ministry of Nature and Environment on sustainable livelihoods.*

*The proposed screening system is intended to be fully mainstreamed into the process for identifying, planning, implementing and monitoring activities of sub-projects. A concise set of forms and checklists have been developed, which will be merged fully with the LDF/LIF project implementation manual, and the overall system of project management.*

*The EMP sets out limited training requirements to ensure that environmental sustainability is fully mainstreamed into the SLP. The most significant training activity is to improve awareness of sustainable livelihoods and pastoral risk management among government officials and herders. There is a natural tendency to equate pastoral risk management (i.e. reducing people's vulnerability) with pasture management, although there is a clear difference. Other areas in which training is required are the environmental management system, and integrated pest management (in association with the rodent control activities). In addition, opportunities should be found to allow officers from aimags and sums to join together to train one another on their experiences as the SLP progresses.*

The Government of Mongolia (GoM) has requested IDA financing for the *Sustainable Livelihoods Project (SLP)*, which will support aspects of the second phase *Sustainable Livelihoods Program* (following the 1994-2000 National Poverty Alleviation Program) and the recently approved GoM *National Program to Establish a System for the Protection of Livestock from Drought and Dzud*, within the framework of the draft interim poverty reduction strategy paper (IPRSP).

This is the report of the dedicated environmental and social assessment (EA) of the proposed SL Project. The objectives of this EA are:

- To assess the likely environmental impacts of the proposed project activities, whether positive or negative;
- To assess the likely social impacts of the proposed project activities, whether positive or negative;
- To devise measures for mitigating any adverse impacts; and
- To prepare an environmental/ social management plan for the project, including arrangements for screening of sub-projects.

This environmental and social assessment was carried out by consultants through the Tacis Joint Environment Program (JEP), drawing on a separately commissioned dedicated social assessment. The authors of this report are listed in *Annex 1*. The EA included a consultancy team mission to Mongolia from 3-21 September 2001, carried out simultaneously with the visit of the FAO team preparing the project appraisal document (PAD) and assisting GoM with preparation of the project implementation plan (PIP). The itinerary for the EA mission is given in *Annex 2*.

The SLP follows on from the *Poverty Alleviation for Vulnerable Groups Project (PAVGP; 1996-2000)*, and will contribute to the *National Program to Assist the Protection of Livestock from Drought and Dzud*. Further detail on the background to the SLP is given in *Annex 3*.

In Box 1.1, we cite a number of issues that are central to the environmental assessment of the SLP.

## 1.1

### LAYOUT OF THIS REPORT

This report is structured as follows.

#### Part I – Introduction and context

- Chapter 1 – Introduction (this section)
- Chapter 2 – Policy, legal and administrative framework

- Chapter 3 – Methodology and consultation

Part II – Baseline data

- Chapter 4 - Description of the proposed project
- Chapter 5 – Baseline data

Part III – Impacts

- Chapter 6 – Significant environmental impacts
- Chapter 7 – Analysis of alternatives

Part IV – Environmental management system

- Chapter 8 – Environmental management system

**Box 1.1 Key issues in carrying out the environmental assessment of the SLP**

***Positive and negative impacts***

The long-term success of the SLP is closely associated with sustainability, including environmental sustainability, and with minimizing potentially negative environmental impacts. Sustainable livelihoods of rural Mongolians depend directly on environmental resources. This environmental assessment therefore considers both the *positive (beneficial)* and *negative (adverse)* environmental impacts of the project.

***Indirect, cumulative, and unpredictable impacts***

The approach of the SLP has a number of implications for its environmental assessment, and environmental management system:

- ***Induced environmental impact.*** To predict the environmental impact of the project (and indeed the developmental impact), it is necessary to understand Mongolia's rural economy and society (i.e. rural people's *livelihood strategies*). There may be induced environmental impacts that occur as a result of the project impact on local economies and society. These indirect, induced impacts are not predictable.
- ***Cumulative impacts.*** Individual developments supported by the project, such as community infrastructure, are not likely to have a significant environmental impact. But cumulatively, the effects of a large number of small developments may have significant environmental impacts.
- ***Environmental management system.*** The precise details of sub-projects to be financed under the community investment funds, or the precise location of all activities under the pastoral risk management component, for example, are not yet known. Therefore it is not possible to ascertain impacts at this stage, necessitating an environmental management system that can screen specific developments as they are identified.

***'Environment'***

In conducting this environmental assessment, the authors have been conscious of the inadequacy of 'environment' as a single word to describe the various aspects of the environment that the SLP has potential positive or negative impacts on. 'Environment' includes issues of, for example, land degradation, human health, water resources, water quality, people's access to the benefits of natural resource use, gender differentiation in use of the environment, natural habitats, protected areas, biological diversity, and agricultural biodiversity. In conducting this environmental assessment, we have recognized that a particular activity or development can have positive impacts on one aspect of 'environment' while having negative impacts on another aspect.

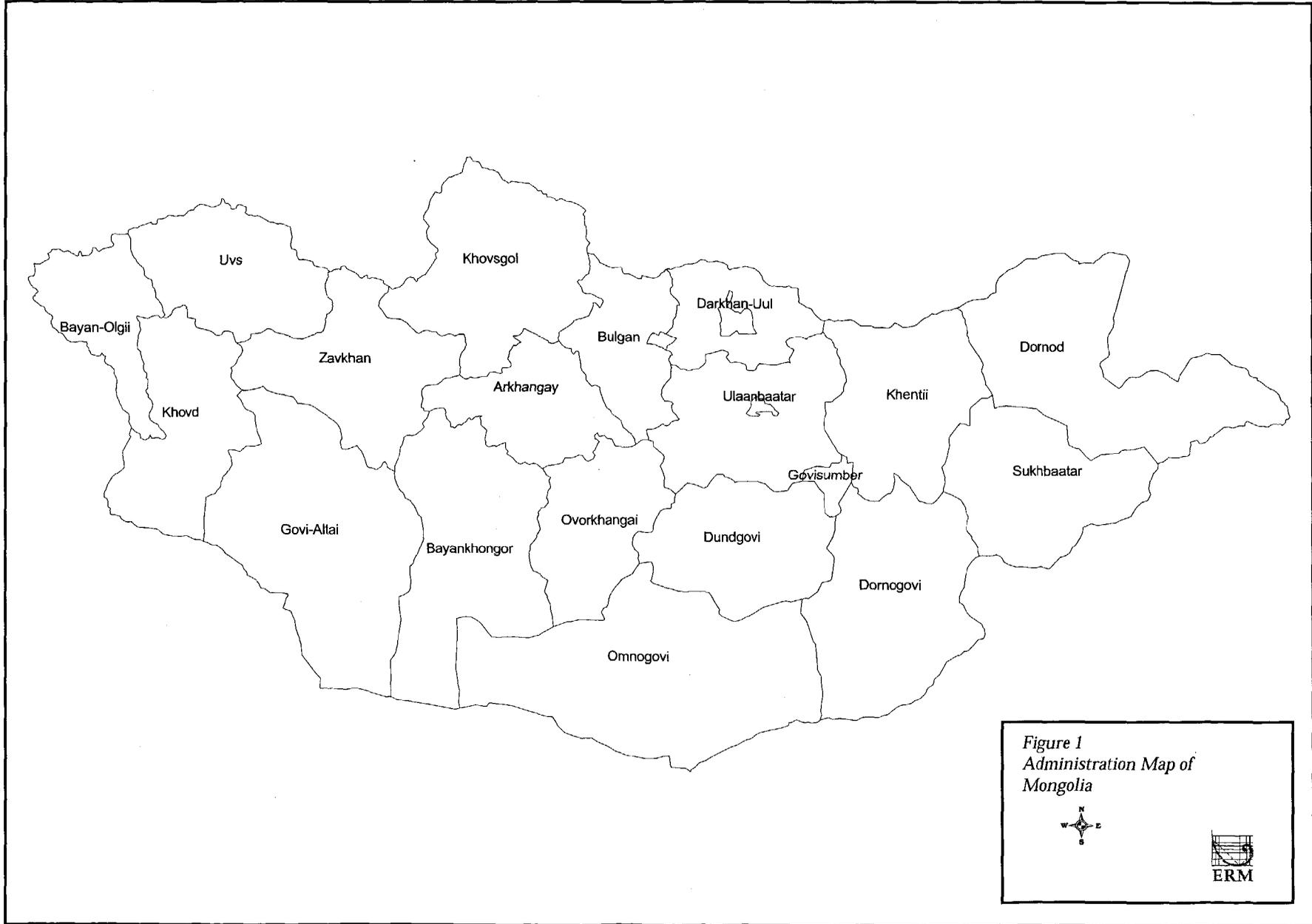


Figure 1  
Administration Map of  
Mongolia



This EA has been undertaken to meet the requirements of both Mongolia's environmental impact assessment regulations and the World Bank's project appraisal process. This chapter describes the relevant Mongolian policy, legal and administrative framework for environmental assessment. Relevant World Bank policies and guidance are discussed in *Annex 4*.

**2.1****MONGOLIAN POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK**

Mongolia's policies on environmental resources are underpinned by two key aspects of the constitution:

- Article 6 of Mongolia's constitution states that the land, its groundwater, forests, water, wildlife, plants and other natural resources are public property and are protected by the state. Land other than pastures, common use land, and land for state special needs is owned by the citizens of Mongolia.
- Article 16, paragraph 2, states that citizens of Mongolia have a right to live in an ecologically clean environment and to be protected from environmental pollution and ecological imbalances.

The EIA law of 1998 is the key law concerning environmental assessment in Mongolia, and is implemented by the Ministry of Nature and Environment (MNE), in collaboration with *aimag* and *sum* local government. *Box 2.1* describes the key provisions of this law.

**2.1.1*****Ministry of Nature and Environment***

The mission of the Ministry of Nature and Environment (MNE) is to ensure that Mongolia maintains an ecological balance and ensures that its present and future citizens can live a clean and healthy environment consistent with sustainable development objectives <sup>(1)</sup>.

**2.1.2*****Local government in Mongolia***

Local Government in Mongolia consists of 21 *aimags*, divided into 334 *sums*, in turn consisting of a total of 1,630 bags (see *Figure 1*). The central authority at *aimag* and *sum* levels of local government is the Governor.

*Annex 5* provides further detail on the government structure at *aimag* and *sum* levels. Key points are that *aimag* environmental agencies are typically staffed with 4-6 persons, often including a head separate from the *aimag's* environmental

(1) *Business Strategy and General Structure of MNE*

officer. In addition, most *sums* have one environmental officer, plus rangers in *sums* within protected areas.

### ***Box 2.1 EIA Procedures in Mongolia***

The Mongolian law on Environmental Impact Assessment of 1998 establishes general requirements, procedures and implementing aspects of environmental impact assessment. The main purpose of this law is to regulate environmental impact assessment and the decision-making on the implementation of projects.

The law stipulates that any projects or development initiatives are the subject for Environmental Screening or General Environmental Impact Assessment (GEIA). The project proponent is required to submit summary and technical documentation to Ministry of Nature and Environment or to the local *aimag* authority in line with screening criteria established in the law. These criteria stipulate that any development projects in the agriculture sector except water reservoirs, irrigation facilities, and the cultivation of virgin land are under the responsibility of *aimag* and *sum* authorities.

On the basis of conclusions of environmental screening and GEIA, one of the following decisions will be made:

- To provide approval for implementation without further assessment, if the project impacts and consequences meet the requirements of existing environmental standards and requirements;
- In cases where negative impacts are deemed to be unlikely and/or insignificant. Project implementation may be approved subject to specific conditions regarding management and organizational measures to be taken;
- In cases where negative impacts are regarded as likely and or significant, the project may be required to undergo more detailed assessment or Detailed Environmental Assessment (DEIA).

If a DEIA is required, the project proponent is responsible for contracting one of Mongolia's licensed environmental consultancies (of which there are currently 21) to conduct the DEIA in accordance with the requirements set out in the GEIA. Enforcement and monitoring of the implementation of Environmental Management Plans set out in DEIAs are the responsibility of local government agencies.

### 3 METHODOLOGY AND CONSULTATION

#### 3.1 INTRODUCTION

This EA was carried out in three stages: (i) office-based review of literature; (ii) in-depth stakeholder consultation over three-weeks in Mongolia; and (iii) office-based wrap-up and completion stage, including incorporation of conclusions from the dedicated social assessment.

#### 3.2 SCOPING AND DESK-BASED REVIEW

Desk-based analysis of reports describing project components was carried out during August 2001. In addition, the draft report of a scoping study focusing on the PRM component, separately commissioned by the World Bank, was reviewed. The list of reports and documents reviewed is provided in *Annex 6*.

#### 3.3 MONGOLIA-BASED WORK

From 3-23 September 2001, the EA team (including consultants from ERM, Monconsult, and, from 3-9 September, the Institute of Development Studies of the University of Sussex, UK) conducted a series of interviews and workshops with stakeholders and key informants in Ulaan Bataar and rural Mongolia. The itinerary for the visit to Mongolia is given in *Annex 2*.

In UlaanBaatar, the EA team worked in close cooperation with the FAO project preparation team contracted by the World Bank. The EA field mission and FAO team visit to Mongolia were conducted over the same period.

##### 3.3.1 Stakeholder consultation

Stakeholder consultation was one of the key tools to achieve the EA objectives. An intensive schedule of interviews with key stakeholders and informants, as well as joint meetings/workshops with groups of stakeholders was followed. A typical agenda of a meeting would include an introduction of participants, a brief overview of the project, views and comments of the consultees, and specific questions from the EA team regarding the details of environmental and social sensitivities, people's interaction with the environment, and potential impacts of the project. Interview and workshop techniques included time budgets and ranking exercises.

Some stakeholders were interviewed on two or three occasions, in order to discuss conclusions in detail. Key stakeholders consulted on the project included:

- National government agencies;
- Local government (*aimag* and *sum* levels);
- Herders in rural and *peri-sum* and *peri-aimag* areas;

- Environmental NGOs;
- Research institutes;
- Private sector;
- International development agencies;
- Local consultants involved in the preparation of project components.

A detailed table of those consulted and key issues discussed is attached in *Annex 7*. Box 3.1 lists a selection of the content of meetings with key stakeholders.

### 3.3.3 *Field visit*

A field visit to three *aimags* (*Dundgovi*, *Omnogovi*, and *Ovorkhangai*) was carried out from 9-15 September 2001. The objective of the visit was to meet and consult with local governments in *aimags* and *sums*, as well as with herders, and verify our initial analysis of rural livelihoods and potential environmental impacts of the project.

A stakeholder consultation workshop was conducted in Dalanzadgad (*Omnogovi Aimag*) on 11 September. Twenty-five participants took part in the event. After welcome speech from Deputy Governor and project introduction by EA team, participants discussed key issues, problems and obstacles, potential solutions, and required activities in three working groups: (i) environment and agriculture; (ii) social issues; and (iii) capacity-building and training. Findings of the field visit have been incorporated into *Chapters 6-8* of this report.

## 3.4 WRAP UP AND COMPLETION

The final phase included the incorporation of comments received from stakeholders during the presentation of initial findings at wrap up meetings in Ulaan Baatar, and the incorporation of comments from GoM, the World Bank, and the FAO preparation team, as well as completion of the final report.

In addition, the draft report was amended to include the findings and recommendations of the dedicated social assessment. The social assessment was carried out over September-October 2001, and included a similar pattern of stakeholder consultation and field visits in Mongolia.

Throughout the environmental assessment, the Government of Mongolia (GoM) and the FAO team assisting PAD/PIP preparation have striven to ensure that the potential negative environmental impacts of the project will be avoided or minimized, and indeed have proposed a number of suggested alternative actions or strategies.

### ***Box 3.1 Selected meetings in Ulaan Baatar***

#### *Ministry of Food and Agriculture*

Key issues discussed covered pastoral risk management issues, project management, relationship with the Ministry of Nature and Environment (MNE) on the project, land tenure, herder cooperatives, background on food and agriculture in Mongolia, local capacity and experience to assess environmental impacts at *aimag/sum* levels. The conclusion of the EA, and a draft of the environmental management plan were also discussed, through the use of an aide memoir, translated into Mongolian.

#### *Ministry of Nature and Environment and Environmental Protection Agency*

Key issues discussed included institutional arrangements for environmental management in Mongolia, environmental issues in the country, national EIA requirements, procedures and capacity, environmental impacts, role of MNE in the project, structure and responsibilities of the EPA, and protected areas. The aide memoir, EA draft conclusions and the EMP were also discussed with MNE.

#### *Land Administration Authority*

Key issues discussed included land use and degradation of land, new land law that is currently being considered by the Parliament, pasture management, emergency forecasting, land use and 'risk' maps.

#### *Poverty Alleviation Program Office*

Issues discussed included institutional and management arrangements of the project, NPAP/LDF experience and lessons, and stakeholders. The aide memoir, EA draft conclusions and the EMP were also discussed with PAPO.

#### *Union of Mongolian Environmental NGOs*

Issues discussed included environmental NGOs in Mongolia, their views on the project as well as potential roles in environmental monitoring and awareness raising.

#### *Research institutes*

Several environmental and social research institutes were visited, including Center for Policy Research, Institute of Meteorology and Hydrology, and Institute of Geocology. Issues discussed included herders' livelihood strategies and needs, land law, NGOs, environmental baseline information and monitoring, and environmental issues in Mongolia.

#### *Private sector and local consultants to project components*

Several local consultants (currently working for private sector firms) that were involved in preparation of separate project components were interviewed. Organizations included private sector consultancies, and licensed environmental consultancies such as MNEC. The issues discussed covered each of the project components; pasture ecology, national environmental capacity, and potential environmental impacts of project activities.

#### *International donor organizations*

The EA team worked in close collaboration with FAO team throughout, and the relevant information was exchanged and discussed regularly. Other international organizations met included UNDP, the UNDP-supported project to develop Mongolian Action Plan for 21 Century (MAP 21) and National Water Supply, Sanitation and Hygiene Education Program (WASH 21), as well as the USAID-sponsored Gobi Initiative.

## DESCRIPTION OF THE PROPOSED PROJECT

### 4.1

#### BACKGROUND

Since July 2000, the Government of Mongolia has made poverty reduction the centerpiece of its Action Program. Building on the significant achievements and lessons learned during the implementation of the National Poverty Alleviation Program (NPAP) over 1994-2000, GoM is in the process of formulating a second-phase national program to help bring about a sustained reduction in the incidence of poverty in Mongolia, within the overall framework of its Interim Poverty Reduction Strategy Paper.

Concurrently, in response to successive dzud of 1999/2000 and 2000/2001, GoM recently approved a *National Program to Establish a System for the Protection of Livestock from Drought and Dzud*, under government resolution no. 47. The resolution sets out a series of responsibilities for *sum*, *aimag* and national government.

### 4.2

#### THE PROJECT AND THE PROGRAM

GoM has requested support from the World Bank for parts of the second-phase of the NPAP and the national program on drought and dzud, and has prepared the proposed *Sustainable Livelihoods Project (SLP)* for financing by IDA to address these parts.

The second phase of the NPAP will be renamed the *sustainable livelihoods program*, and the *sustainable livelihoods project* that is proposed for IDA financing is a four-year investment, as part of this 12-year program. In several respects, the project will *pilot* activities in eight of Mongolia's 21 *aimags*, with a view to scaling approaches up to cover all *aimags* in later phases of the 12 year program.

The development objective of the project is:

*Effective approach & capacity to promoting improved near-term sustainable livelihood strategies demonstrated, validated and ready for scaling up in phase II [of the program].*

This is intended to contribute to the program goal of *Targeted poor [rural & urban middle-vulnerable poor, the poor and the very poor] improve their sustainable livelihood outcomes and reduced vulnerability.*

#### 4.2.1 *Components*

The project includes four components:

- ***Pastoral Risk Management.*** This component will support the preparation and implementation of an integrated strategy to reduce herders' vulnerability to covariant risks due to dzud, drought, disease, and prices.
- ***Micro-Finance Services Outreach.*** This component will support structural change in commercial and civil society provision of microfinance services (savings and credit), in order to improve the outreach of these services to poor and vulnerable households and individuals in rural areas.
- ***Local Initiative Fund.*** This component will support the development of demand-driven mechanisms to facilitate beneficiary groups to prioritize, select, co-finance, and execute investments in basic infrastructure and social services. The component will build upon the experience of the Local Development Fund (LDF), implemented under phase 1 of the NPAP, through the continuation of this fund in 21 *aimags*. In addition, the component will support a new fund, to be piloted in 8 *aimags*.
- ***Project Management.*** This component will support project management. In particular, it will seek to progressively devolve responsibilities to *aimag* and *sum* levels within local government. Overall coordination, monitoring and evaluation, and fiduciary oversight will be held at a central/national level.

#### 4.3 *PASTORAL RISK MANAGEMENT COMPONENT*

This component will support the GoM National Program on drought and dzud, and reduce households' and individuals' vulnerability to the risk of drought and dzud, through the development of an *integrated, field-tested pastoral risk management strategy framework*, which is flexible enough to respond to the need for regional-specific fine-tuning. It will focus on eight of Mongolia's 21 *aimags*.

Pastoral management in Mongolia has been subject to significant change in recent decades, resulting in an increase in the vulnerability of herders to risk.

##### 4.3.1 *Risk cycle*

Conceptually, this component can be viewed as contributing to the actions as part of a risk 'cycle', at micro (individual, household and bag) levels, meso levels (*sum*, and *aimags*), and macro (national) levels. 'Risk' here refers to *covariant risk*, i.e. risks that groups of people are subject to, such as climatic events or natural disasters, as opposed to *idiosyncratic risks*, which individuals are subject to depending on their individual circumstances.

#### 4.3.2 *Activities*

The component will carry out activities in the following areas. Further details are provided in *Table 4.1*:

- Integrated *sum*-level risk management plans;
- Pasture and grazing management, including herder organizations;
- Winter preparation of herders and livestock;
- Hay and fodder development and management;
- Water and well development;
- A restocking model as an emergency recovery mechanism;
- Microfinance services for herders;
- Emergency forecasting systems; and
- Implementation capacity building.

#### 4.3.3 *Implementation responsibilities*

The Ministry of Food and Agriculture (MoFA) is primarily responsible for the implementation of the PRM component, in combination with *sum* and *aimag* governments. Inter-disciplinary PRM Working Groups will be established at *sum*-levels to oversee implementation, and a national-level Inter-ministerial working group, including representation from the Ministry of Nature and Environment, will have a key role in synthesizing lessons and feeding experience into policy and legal developments.

#### 4.3.4 *Scale*

The component will work at national, *aimag* and inter-*aimag* and *sum* levels and below. The component supports the testing of selected key strategies outlined in GoM resolution 47: strengthening institutional and organizational mechanisms at macro and meso levels, and pilot-testing activities at micro levels. The eight 'core' *aimags* in which pilot activities are to be carried out are subject to discussion within GoM, but the following were indicated as the likely *aimags* during the field mission of the environmental assessment (west to east):

- Bayan Ulgii; Uvs; Byankhonghor; Overkhangai; Omnogobi; Dundgovi; Tov; and Dornod.

A variety of *sums* will be selected to carry out pilot activities. The selection of the *sums* is yet to be confirmed, but the component will work in 6 *sums* in year 1, scaling-up to work in an additional 16 *sums* in year 3.

#### 4.3.5 *Budget*

*Table 4.2* shows the planned budget for the PRM component, as at 23 September 2001. This reveals greater detail on the planned activities for the component. With the exception of the re-stocking fund, sub-components and activities can be

seen to each account for a small share of the budget (less than 16%). Individual budget-lines also reveal the scale of the planned activities: for instance it is planned that 66 wells will be rehabilitated, and 18 new wells will be drilled in total (under the grazing management sub-component in addition to the well development sub-component).

**Table 4.1 Activities of the PRM sub-components**

| Sub-component  | Household / Bag / Sum / Aimag   | National   |
|--|---|--|
| <i>Integrated sum-level risk management plan development</i> | <ul style="list-style-type: none"> <li>• Support to the iterative process of <i>sum</i>-level risk management planning;</li> <li>• Awareness-raising among herders about the SLP and resolution 47</li> <li>• Participatory workshops to develop annual <i>sum</i>-level PRM plans (including <i>sum</i>- and <i>bag</i>- level responsibilities).</li> </ul> |  |
| <i>Pasture and grazing management</i>                        | <ul style="list-style-type: none"> <li>• Bag / <i>Sum</i> level land use maps;</li> <li>• Improved grazing discipline / practices</li> <li>• Apply / enforce existing land law and grazing rights</li> <li>• Inter-<i>sum</i> emergency winter otor reserves;</li> </ul>  | <ul style="list-style-type: none"> <li>• Repair infrastructure (winter shelters, wells and service points) of 2 existing inter-<i>aimag</i> otor reserves;</li> <li>• Pilot alternative community-based rodent control methods.</li> </ul> |
| <i>Herders' organizations</i>                                | <ul style="list-style-type: none"> <li>• Pilot the development of herders' associations, NGOs, and cooperatives, and training for these associations</li> <li>• Establish association- or NGO- owned and managed revolving multipurpose funds</li> <li>• Establish improved mechanisms to reduce animal losses due to theft and wolves</li> </ul>             |  |
| <i>Winter preparation of herders and livestock</i>           | <ul style="list-style-type: none"> <li>• Household preparations (hay-making and storage, loans for shelter rehabilitation/ construction, firewood preparations, etc);</li> <li>• Strengthen emergency-related anti-parasitic veterinary services.</li> </ul>  |  |
| <i>Hay and fodder development and management</i>             | <ul style="list-style-type: none"> <li>• Pilot mechanized, commercial hay-making;</li> <li>• Pilot household hay-making with animal-drawn harvesters;</li> <li>• Pilot commercial fodder and concentrate production;</li> <li>• Develop and test a model for revolving <i>Aimag</i> emergency fodder funds.</li> </ul>  |  |
| <i>Water and well development</i>                            | <ul style="list-style-type: none"> <li>• Rehabilitation of wells;</li> <li>• Construction of new wells and reservoirs.</li> </ul>   |  |
| <i>Restocking model as an emergency recovery mechanism</i>   |   | <ul style="list-style-type: none"> <li>• In response to demand, restocking, and using resources shifted from LIF and RMF.</li> </ul>   |
| <i>Microfinance services for herders</i>                     |   | <ul style="list-style-type: none"> <li>• Research on savings &amp; credit;</li> <li>• Work with Ag Bank to serve herders' needs;</li> <li>• Piloting of livestock insurance.</li> </ul>  |
| <i>Emergency forecasting systems</i>                         |   | <ul style="list-style-type: none"> <li>• Improve emergency forecasting (weather &amp; vegetation data);</li> <li>• Improve dissemination of information to herders.</li> </ul>   |
| <i>Implementation capacity-</i>                              | <ul style="list-style-type: none"> <li>• Capacity-building and training for <i>sum</i> officials, <i>bag</i> governors, and selected <i>aimag</i></li> </ul>  | <ul style="list-style-type: none"> <li>• Project management and implementation group at</li> </ul>   |

|                 |  |   |
|-----------------|--|---|
| <i>building</i> | representatives to implement the component through PRM Working Groups. | MoFA;<br><ul style="list-style-type: none"> <li>• Inter-ministerial national level PRM Working Group to assess program policy implications;</li> <li>• M&amp;E of the PRM component.</li> </ul> |
|-----------------|--|---|

**Table 4.2 Planned budget for the pastoral risk management component**

| Sub-component /budget line              | US dollars       | %    | Relevant details  |
|---|------------------|------|---|
| Government personnel                    | 268,480          | 6.2  |   |
| Capacity building                       | 306,700          | 7.1  | Mainly international inputs and workshops. Includes a small amount for PCs and motorbikes.  |
| Grazing management                      | 157,200          | 3.6  | Includes: <ul style="list-style-type: none"> <li>• 24,000 for pilot rodent control activities (training, laboratory equipment and safety gloves and masks)</li> <li>• Inter-<i>aimag</i> otor reserves including 90 new stone animal shelters, 30 wooden rehabilitated shelters, drilling of 6 new wells, and rehabilitation of 2 new wells.</li> </ul> |
| Winter preparation                      | 48,000           | 1.1  | Including 16 pilot animal dips, and a lump sum of 12,000 for animal shelters  |
| Support and training to herders' groups | 577,200          | 13.4 |   |
| Fodder and haymaking                    | 650,500          | 15.1 | Includes 372,500 for machinery and buildings, 50,000 to pilot horse-drawn mowers and rakers, and a 200,000 revolving fund   |
| Well construction and rehabilitation    | 244,400          | 5.7  | 64 wells to be rehabilitated, 12 new wells to be drilled  |
| Livestock insurance piloting            | 616,000          | 14.3 |   |
| Emergency forecasting system            | 200,000          | 4.6  |   |
| Restocking fund                         | 1,000,000        | 23.2 |   |
| Recurrent costs                         | 240,000          | 5.6  |   |
| <b>Total</b>                            | <b>4,308,480</b> |      |   |

#### 4.4

#### **MICROFINANCE OUTREACH SERVICES**

The SLP microfinance component seeks to address the problem of inadequate access that poor people have to financial services, by increasing micro-finance outreach to poor households in a financially sustainable manner. Better outreach should enable poor households to access savings products, insurance products, credit at prices they can afford, and other financial services.

Currently, credit is the area of micro-finance that is most well developed in Mongolia, but the shortage of loanable funds means that poor households are unable to qualify to borrow from most providers, with the exception of NPAP.

Demand for credit is overwhelming, evidenced by levels of interest from 1% per day to 60% per annum. At these interest rates, the poor cannot afford to invest in their assets, and micro-enterprises and micro-finance providers cannot be financially viable.

The component will seek to improve access to financial services by the following strategies:

- Savings-linked access to increased supply of funds for credit;
- Development of an expanded range of micro-finance products tailored to the needs of the poor;
- Investment in capacity-building for financially sustainable micro-finance outreach to the poor; increased revolving loan fund activities, building on NPAP phase 1;
- Strategic links between micro-finance providers and herder associations and *sum*- and *aimag*- level NGOs;
- Savings-based resource mobilization through savings products, coordination of donor support for microfinance, a line of credit to fund microfinance outreach to the poor, and the creation of an apex body (the *Mongolia Microfinance Outreach Foundation*), to coordinate a national program of microfinance outreach.

The *Mongolia Microfinance Outreach Foundation* would be the main thrust of the component, to be established by MoFE over two years. In the transition period, the focus of activities will be on the privatization of *sum*-level revolving funds as part of a strategy to improve capacity and financial sustainability, product diversification, and links with the PRM component. The latter will support pilots in the establishment and development of herder NGOs as managers of revolving loan funds and extension of savings-based products in alliance with the licensed banking sector.

#### 4.4.1 *Implementation arrangements*

The microfinance component will be overseen by the Ministry of Finance and Economy (MoFE), and the proposed *Microfinance Outreach Foundation* will report to MoFE. Partner MFIs will apply to and be held accountable to the foundation.

#### 4.5 *LOCAL INITIATIVE FUND (LIF/LDF)*

This component will continue to support the LDF that was established under NPAP, but in parallel will establish a new fund which will facilitate a transition from the LDF to a more demand-driven, participatory fund that can over time become incorporated into the regular local government budget process. The objective of the LIF is:

To create an accountable and community-responsive mechanisms developed and adopted to facilitate community prioritization, selection and participation with government in financing and execution of investments in basic infrastructure.

This approach responds to the acknowledged strengths of the LDF: it has built capacity and experience in the operation of funds, and is the only investment fund that *sums/khoroos* have discretion over. But the approach seeks to correct the weaknesses of the LDF: community participation has been weak, resulting in poor community commitment to operation and maintenance, and the poor perceive that many of their pressing needs were not addressed, because *sum* and *aimag* planners focused on sector priorities & 'higher-level' requirements.

#### 4.5.1 Key aspects of LIF design

The LIF will be built on the capacity, experience and momentum created under the Local Development Fund (LDF) and facilitate a transition from mostly top-down LDF operations to a more participatory, demand-driven facility. This facility would respond to both *sum* level and lower level (*bag*) needs and priorities, initially through both the new fund and the LDF in a twin-track approach, but then later through a single facility (the LIF) with two funding windows. The eventual aim is to create a facility that will be sustainable without international funding: funding would come from local *sum/duureg* funds and central government. Table 4.3 gives some basic details of the LIF and LDF.

**Table 4.3 The LIF and LDF**

| <i>Local Initiatives Fund</i>   | <i>Local Development Fund</i>  |
|---|--|
| <ul style="list-style-type: none"> <li>• Piloted in eight 'core' <i>aimags</i></li> <li>• Piloting in one <i>aimag</i> and one <i>sum</i> in PY1, to be extended to two <i>sums</i> in each of the eight <i>aimags</i> within 6 months to a year (during PY2)</li> <li>• In PY3 the LIF will be introduced in the remaining <i>sums</i> in these eight <i>aimags</i> (127), i.e. LIF will absorb the LDF to become one fund with two windows</li> </ul> | <ul style="list-style-type: none"> <li>• Will continue to operate in all <i>sums/khoroos</i> in the country</li> <li>• Each <i>sum/khoroos</i> to be allocated a budget ceiling</li> <li>• New procedures will be introduced, along with training, to develop a more participatory demand-driven approach, thereby facilitating its integration with the LIF in the 8 core <i>aimags</i></li> <li>• In the other 13 <i>aimags</i>, continuation (or total allocated amounts) of the LDF will be conditional on its performance, including its performance in becoming more demand-driven.</li> </ul> |

#### 4.5.2 *Likely projects to be financed*

Under the LIF, or under a more demand-driven LDF, there is a degree of uncertainty over what types of sub-projects will be implemented: the 'menu' of sub-projects will be open, and the funds are intended to be fully demand-driven.

However we can make predictions, based on the experience of the LDF, and our field observations. Typical activities will be the rehabilitation of health facilities, school buildings and dormitories, roads and bridges, and domestic drinking water supplies, for example. Financing will not be provided under LIF for economic/private investments. It will be limited to investment in public infrastructure facilities.

It is of note that the participatory process will be progressively channeled towards a set of sub-projects that have been proven to be successful, and are economically, socially and environmentally 'viable', and their operation/maintenance is sustainable. *Box 4.1* lists examples of LDF sub-projects funded under NPAP thus far.

#### *Box 4.1 LDF financed activity areas*

*Public works:*

- Maintenance of feeder roads, repair of bridges
- Renovation of buildings for public use
- Improvement of water supply systems
- Improvement of communal services and sanitation systems
- Community forestry
- Fuel collection

*Education:*

- Renovation of *sum* schools
- Establishment of bag schools for out-of-school children
- Establishment of *sum* school farms
- Provision of electric power for remote *sum* schools and dormitories
- Strengthening of training facilities

*Rural health services:*

- *Sum* hospital and maternity home renovation
- Bag feldsher transport and equipment
- *Sum* hospital transportation
- Training of Community Health Volunteers

*Pre-school:*

- Expansion of kindergarten services
- Kindergarten repair and establishing *ger* kindergartens
- Establishment of Community kindergarten and training of community education volunteers
- Pre-school teacher training
- Production of toys
- Establishment of kindergarten farms
- Food contribution for children from poor households

*Support for Disabled:*

- Special equipment needs of institute training of employing disabled adults
- Purchasing of specialized equipment for disabled persons, e.g. Braille kits and paper, specialized typewriters
- Support to mentally and physically handicapped children to attend nurseries and kindergartens

#### 4.5.3

#### ***Implementation arrangements***

The demand-driven nature of the LIF gives bag and *sum/duureg* community's major decision-making authority, ownership and responsibilities for proposed community investments. Bag groups will be the main institutional unit at grassroots level for identifying community priority needs and elaborating these into sub-project proposals. These proposals will be agreed by the *khurals* and then submitted to the PAC management teams (PAC/MTs) that will be established at *sum* level and *aimag* levels. The *sum* PAC/MT will be the main body at *sum* level for decision-making and final approvals for sub-projects, and for technical and financial monitoring.

The project management unit for the LIF component will be located in MoFE.

#### 4.5.4 *Training, capacity and awareness*

Capacity building and training for both beneficiaries and government personnel is seen as a key strategy element in the LIF to drive the community participation and to sustain impact.

It is planned that bag and *sum* communities will be trained in group organization and leadership development, technical skills in planning, simple accounting/bookkeeping, procuring, implementing, maintaining and managing sub-projects.

In parallel, it is planned to strengthen capacity of local government personnel in community participatory approaches, and group organization, technical, managerial, maintenance, and monitoring skills, including financial management and monitoring. This will enable them to be better able to facilitate and assist communities and groups.

Community awareness and access to information is recognized as an important strategy element of the LIF. A two-way information flow between local communities' government and key stakeholders will be facilitated. This will include information about *inter alia* the objectives, methodology and procedures of the LIF, sub-project implementation experience, market opportunities, prices, and demand for new products, and legal issues.

#### 4.5.5 *Budget*

While the final budget is being finalized, the provisional total costs of this component are currently estimated at USD 7.1 million, with the funding provided to finance sub-projects under LIF and LDF representing about 87% of the total.

#### 4.6 **IMPLEMENTATION ARRANGEMENT FOR THE OVERALL PROJECT**

Apart from the specific arrangements for the individual components described above, arrangements for managing the overall project have been proposed. The Office of the Prime Minister will have overall responsibility for the project, through a national committee embracing both the sustainable livelihoods program and social assistance activities.

Furthermore, a Livelihoods Support Program Office (LSPO) will be created, acting as a secretariat to the national committee. This will be similar to the role of PAPO under the NPAP - it will provide oversight, coordination, monitoring and evaluation, policy guidance etc, for a range of projects promoting sustainable livelihoods. This LSPO will house a 'project facilitation unit' dealing specifically with the World Bank financed SLP.

This chapter presents the environmental and socio-economic context of relevance to sustainable livelihoods in Mongolia, and of particular relevance to the activities of the SLP.

### 5.1 POVERTY

The report of the dedicated social assessment provides details on the demographic and socio-economic profile of Mongolia (*Annex 8*). Incidence of poverty has increased across Mongolia in the past decade. It is higher in *aimags* that are more remote from the center (*Dornod, Uvs, Bayan Olgii* and *Bayankhongor*), but the percentage of households below the poverty line is below the national average in three of the *aimags* likely to be the 'core' *aimags* for PRM component activities (*Tov, Omnogobi* and *Dundgobi*). The poorest people overall are those in *sum* and *aimag* centers in the more remote *aimags* who cannot afford to move to more central urban centers where opportunities are greater, and have limited support networks and few income-earning opportunities.

### 5.2 POPULATION

Almost forty-three percent of Mongolia's population lives in rural areas, i.e. 1.03 million out of Mongolia's total population of 2.4 million, according to the population and housing census of 2000. Forty-five percent of the population are under the age 15, and 70% of the population are under 35, but the population growth rate is declining (from 2.6% quoted in 1990 to 1.4% in 2000). The proportions of men and women are 49.5% and 50.5% (Mongolian Statistical Yearbook, 2000). Population and livestock distribution is depicted in *Figure 2*.

### 5.3 ETHNICITY AND GENDER

There are over 30 ethnic groups in Mongolia. *Khalkh* Mongols are the national majority (90%) and are the ethnic majority in six of the eight core *aimags*. *Kazakh* are the majority ethnic group in *Bayan Olgii* and *Buriad* are in the majority in five *sums* of *Dornod*. *Uvs* is the most ethnically diverse of the pilot *aimags*, where *Dorvod* and *Bayad* are the main groups.

Cultural differences among the different ethnic groups are relatively minor. All groups speak mutually comprehensible Mongolian dialects except for the *Kazakh*. The *Kazakh* are Islamic while other groups practice a mixture of Buddhism and shamanism. Despite this, *Kazakh* livelihoods are not significantly different from those of other ethnic groups.

*Khalkh* Mongolian is the official national language and the language of instruction in schools except in those areas with high numbers of *Kazakh*

speakers. Language or tribal differences have not become significant political or social issues in Mongolia, although the movement of armed *Tuvan* gangs across the border to parts of *Uvs* to steal livestock, and the return of Mongolian Kazakhs from Kazakhstan are more localized migratory patterns from which social concerns arise.

Information is not currently available to disaggregate social indicators by ethnicity. An indication of variation among ethnic groups can be inferred from *aimag*-level data: for example a higher level of maternal mortality is evident in *Bayan Olgii* (majority Kazakh).

The gendered division of labor within herding households sees men customarily undertaking herding and heavy manual work and women responsible for domestic tasks and preparing dairy products. However both men and women may take up the work of the opposite sex when the need arises. In settled areas, family-run businesses usually involve all members of the family. It is acceptable for both women and men to hold down salaried jobs but women may have heavier workloads as they are also considered to be responsible for domestic work.

It is doubtful that there will be varying attitudes between ethnic groups about participation of women in the project. While gender and ethnicity are means by which people identify themselves, there was no evidence in the field sites visited during the dedicated social assessment of community groups organized along these lines.

#### 5.4 LIVELIHOOD-ENVIRONMENT LINKAGES

*Annex 8* includes a table describing the typical livelihood strategies of households of different levels of well being in Mongolia. *Sections 5.5-5.8* below describe livestock and pastoralism in Mongolia. Sustainable livestock management is closely associated with sustainable pasture management - hence the key livelihoods-environment linkage in rural Mongolia is that between livestock and the natural habitat of pastures.

Despite the dominance of livestock-pasture management in rural livelihoods, several other aspects of the environment are of importance to rural people's livelihood strategies and vulnerability. Some of these are dealt with in further detail in *sections 5.9-5.11*. Examples, drawn from the *Participatory Living Standards Assessment* and from our field observations, include:

- *Groundwater*. Shallow wells (less than 5m depth) and deeper wells constructed with *sum/aimag* support in the past. Water is essential for livestock health and productivity well as human health and sanitation. Herders often divide their water resources between livestock and human (e.g. livestock at the lake, humans from the well);

- *Surface water resources.* Rivers, streams, and lakes of varying size.
- *Fuelwood.* Use of fuelwood in areas near to forests;
- *Timber and poles.* For construction of *gers*, winter shelters, and household tools and agricultural implements (trailers etc);
- *Berries, nuts and mushrooms.* Seasonally gathered from forests in some areas;
- *Herbs for cooking.* Wild herbs gathered from pasture;
- *Medicinal plants.* There is limited use of medicinal plants, gathered from pasture. Traditional medicines are used to treat livestock as well as people;
- *Waste.* The disposal of solid waste may pose a hazard to human health in Mongolia's urban areas. In smaller urban centers, solid waste is dumped on the outskirts of the *sum* or *aimag* center.
- *Hunting.* Households use and sell meat and fur products from hunting;
- *Dogs.* Dogs are abundant around *gers*, aiding livestock herding, security, and disposal of waste meat and bones.

The PLSA highlighted the importance of good health to herder families, further underlining the importance of water quality, access to health services and access to traditional medicinal herbs and services.

## 5.5

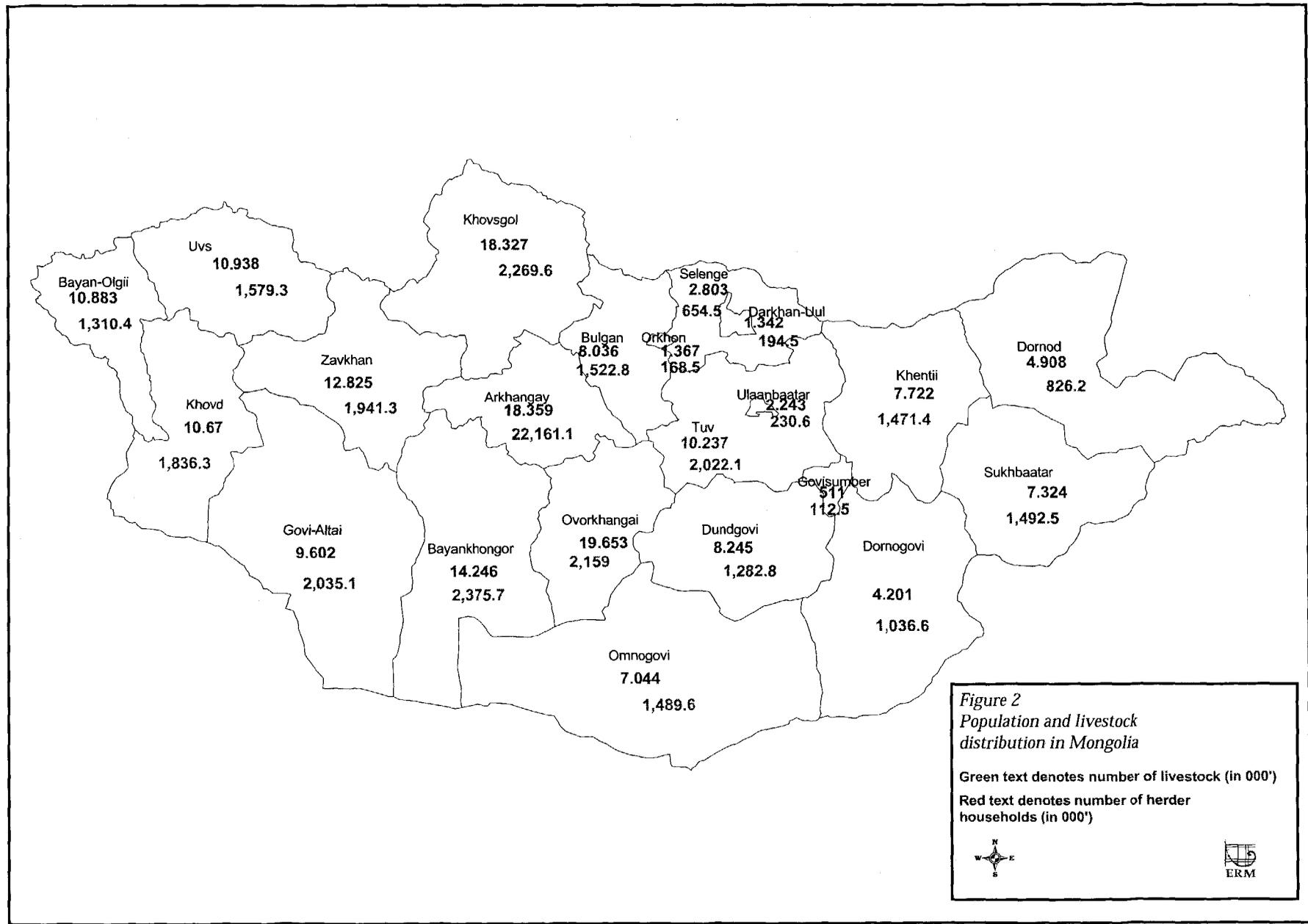
### LIVESTOCK

For the last several decades, between a third and a half of the population of Mongolia has made a living from herding cattle, yaks, horses, camels, sheep and goats, under a nomadic pastoral economy. A substantial proportion of Mongolia's economy is concerned with processing, trade, etc: processing of food and textiles accounts for c.20% of Mongolia's gross industrial product; and trade of livestock products accounts for over 50% of exports.

Since privatization of collectivized livestock in the early 1990s, total livestock numbers have increased from 25.8 million in 1990 to 33.5 million in 1999. There was a nearly threefold increase in the number of herding households from 74,710 in 1990 to 191,526 in 2000. This is partly associated with massive urban to rural migration in the early to mid-1990s, which has now reversed.

But continued increases of livestock number have been halted in the *summer* and winter of 1999/2000 as result of drought followed by *dzud*. The 2001 livestock census is expected to reveal further declines in livestock numbers due to the consecutive *dzud* in the winter of 2001.

Over the same period, herd structures have significantly changed in response to changing market demand. For example, the number of goats increased by 100 percent between 1990 and 2000, reflecting increased opportunities to market cashmere. The number of camels decreased from 537,500 in 1990 to 322,900 in 2000.



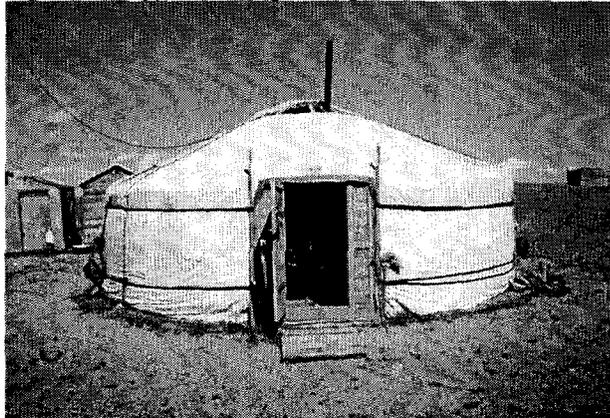
**Figure 2**  
*Population and livestock distribution in Mongolia*

Green text denotes number of livestock (in 000')  
 Red text denotes number of herder households (in 000')

*Figure 4. A herder family during field interviews*



*Figure 5. A typical Mongolian ger*



*Figure 6. A Mongolian herder on horseback*

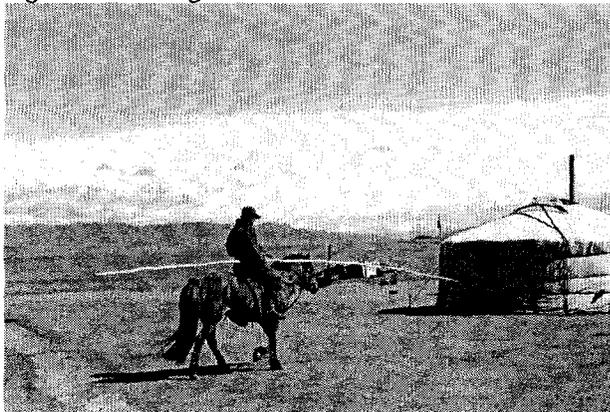
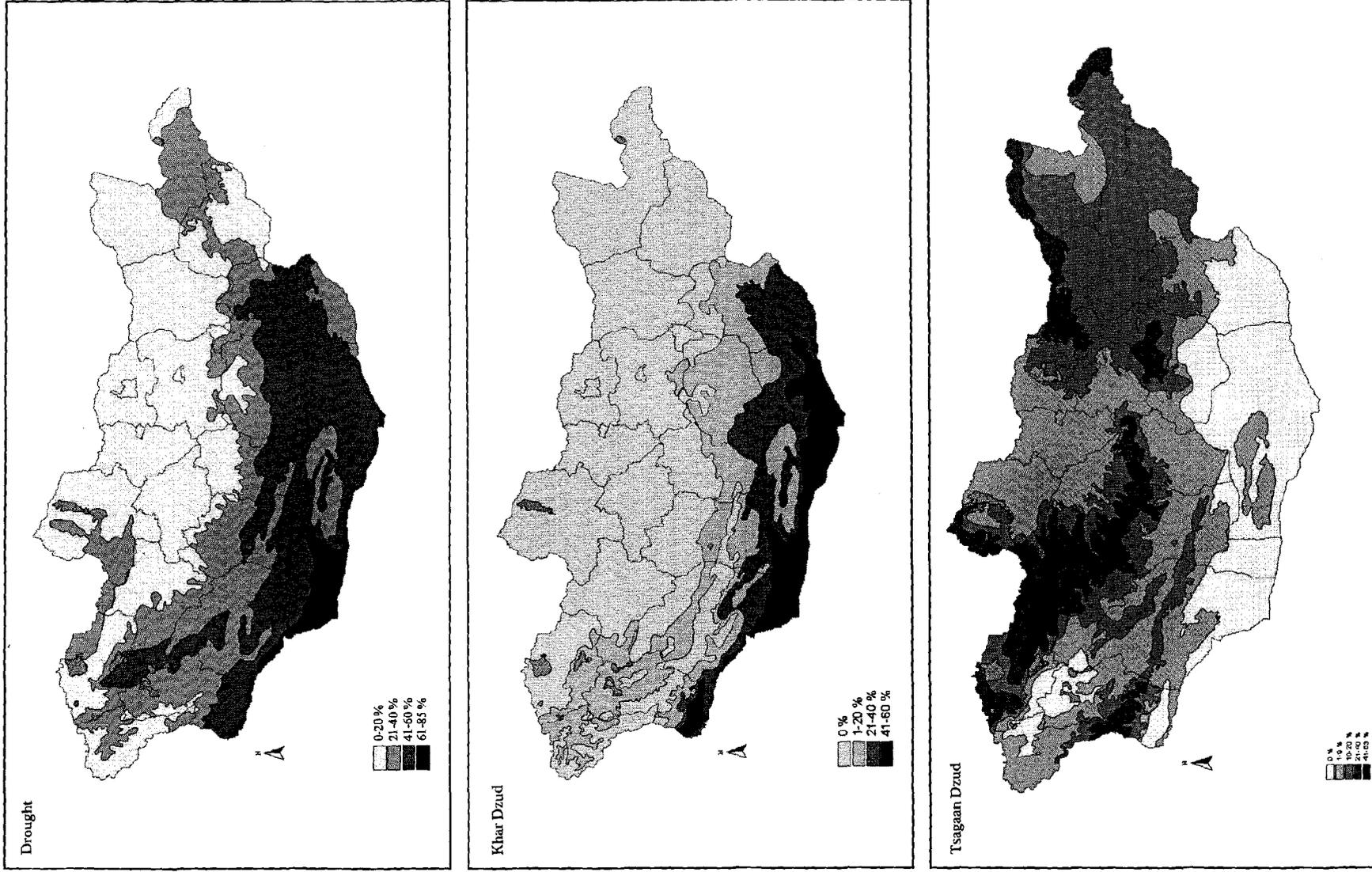


Figure 3 Incidence of drought, khar dzud and tsagaan dzud



## 5.6

### PASTORALISM IN RURAL MONGOLIA

Under the nomadic pastoral economy, family labor is used to manage grazing animals on largely unimproved natural pastures. Rural Mongolians are directly, and almost exclusively dependent on the use, exchange and sale of dairy, meat and other products from their livestock <sup>(2)</sup>.

The following points emphasize the dominance of livestock and in rural people's livelihoods:

- Family labor is used to manage grazing animals on natural habitats of the central Asian steppe and semi-desert grasslands;
- All pasture lands are common property resources;
- There are very few herders who also cultivate crops or fodder;
- Herders' diets and incomes are highly seasonal, for example in dairy products (high *summer* and early autumn), fresh meat (*summer* and early autumn), stored meat (winter), cashmere wool marketing (early *summer*);
- Cash-based markets are poorly distributed, herders have to rely on visiting traders, and herders often have to barter their products for goods;
- Herders are nomadic, transporting their movable *ger* in order to locate suitable pastures, according to the seasons;
- Herders rely on livestock for animal-drawn transport (yak and horse drawn trailers), horses for rapid local transport and to assist in herding;
- Herders also rely primarily on livestock for dung as fuel;
- There is great prestige attached to the breeding of racehorses and participation in regional and national traditional racing events.

#### 5.6.1

##### *Transition from central planning*

Prior to the 1990s, most livestock were owned by collectives (*negdel*) each of which comprised the area of one *sum*, and which were collectively owned by their members, who contributed their labor to the management of the livestock. Individual herders were allowed to keep a small number of private livestock for personal use.

During the first phase of privatization in early 1990s, the collective livestock, machinery, buildings etc were distributed among *negdel* members, but the transition from central planning proved to be difficult for herder livelihoods. Production *risk* was transferred from the state to individual herders simultaneously with the dismantling of the existing social and economic

(2) Most Mongolian herders are pastoralists by definition. The usual definition is that 'pastoralists' receive over 50 percent of gross household income (cash income and the imputed value of own-produce consumed within the household) from livestock-related operations. Nomadism implies movement of the entire household at intervals throughout the year, and the lack of a permanent base.

organization of herding. Herders suffered from a collapse in their terms of trade due to the retention of price controls on herder products alongside market liberalization for inputs or household items herders need to buy. This, in combination with shortages of petrol, meant that rural markets disappeared, and cash ceased to circulate in the countryside.

In response, herders retreated into species diversification, livestock-accumulation and barter in an attempt to protect minimum consumption levels and reduce risk. Poverty grew rapidly, and herders became more vulnerable to environmental, economic, and social risks from which they had been protected for almost 50 years. The foundering of the formal arrangements for pasture allocation, without the official re-establishment of customary rules, led to increasing disorder in rangeland and water use.

## 5.7

### SOCIAL CAPITAL

In rural Mongolia, there are social conventions, inter-household trust and relations within households that can be considered as a significant asset to individuals and households.

- ***Intra-household relations.*** Generally speaking, roles are defined by gender and age. Women participate significantly in livestock management, and additionally carry most of the responsibility for home-making activities such as milking, cooking, collecting fuel, and sewing. Men as well as women manage livestock range over the pastures, but apparently men travel longer distances to take livestock to better pasture in times of emergency and to go hunting. In many households, boys are kept out of education, to manage livestock, while girls are kept in education. This pattern emerged following liberalization, but is now decreasing in frequency.
- ***Khot ail groups.*** Households usually group together in *khot ail* groups, made up of extended family and friends. *Khot ails* cooperate in daily herding tasks such as shared herding and marketing. Some *khot ails* have strong leaders who make decisions on behalf of the group, while others cooperate much more flexibly.
- ***Neg nutginkhan.*** In some cases, a number of *khot ails* group around a shared ecological feature, such as a river, and provide a basis for sharing information and possibly cooperation. 'Neg nutginkhan' means 'the people of one place', and there are similar terms such as *neg usniikhan* (the people of one well) or the 'people of one valley'.
- ***Conventional pasture rights.*** All herding groups have a clear idea about where 'their' seasonal pastures are, and, although there are no explicit mechanisms to exclude other households, encroachment by others is widely considered to be trespass. Protection of winter-spring pastures from out-of-

season grazing by others has become a priority task as traditional grazing discipline has broken down following liberalization.

- **Rural-urban links.** In many cases, there are links between rural households and extended family in *aimag* and *sum* centers. These may take the form of remittances from income earned in urban centers (among relatively wealthy families), and provision of meat and other livestock products from rural-based to urban-based parts of the family.

## 5.8

### ECOLOGICAL REGIONS

Along with recent administrative history and access to markets, ecological variations determine the pattern of nomadic pastoralism in Mongolia. Mongolia is commonly divided into five major ecological regions, each with different dominant livestock species and livelihood patterns. *Table 5.1* summarizes.

In the mountainous *Altai* region, herders move in a largely vertical pattern, covering long distances between upland and lower seasonal pastures. These movements are often channeled through mountain passes used by large numbers of people and animals several times a year. In the *Khangai-Khuvsqull* region, also mountainous but with extensive forest steppe areas, movements are more spread out and horizontal, although *summer* pastures still tend to be at high altitudes, with winter pastures at mid-altitudes, and inter-seasonal pastures along river valleys. In the *Gobi*, water sources dominate movements for much of the year, giving rise to moves towards and away from water. In all ecological zones, exceptional long-distance moves are undertaken in response to severe weather conditions.

#### **Box 5.1 Livestock movements: administrative history and markets**

Movement patterns are influenced by many factors other than ecology. Two are especially important. *Recent administrative history* has constrained the movement patterns of many households. After the 1921 revolution, the new administrative division of *aimags* cut across many customary migration routes, especially hampering Gobi herders who had previously used neighboring mountain valleys for *summer* pasturing. The ecological complementarity between zones, which is very useful to herders, was broken in some cases. Important differences in *market access* between regions also strongly affect herding patterns. The Central and Eastern steppe area has limited access to markets, and the Altai region has its main markets in Russia, which are vulnerable to changing political and economic relationships.

**Table 5.1 Ecological variability in Mongolia**

| Ecological region                 | Ecological characteristics  | Main livestock species  |
|-----------------------------------|---|---|
| <i>Khangai/Khuvs gul</i>          | <ul style="list-style-type: none"> <li>• Mountain slopes and valleys</li> <li>• Forest &amp; steppe</li> <li>• Cold snowy winters, annual precipitation 200-400 mm, 60-100 frost-free days</li> <li>• Largely an equilibrium ecosystem</li> </ul> | Yak, sheep, goats<br>horses, some cattle  |
| <i>Selenge/Onon basin</i>         | <ul style="list-style-type: none"> <li>• Main watershed of Lake Baikal</li> <li>• Cold snowy winters, annual precipitation 250-400 mm, 70-120 frost-free days</li> <li>• Largely an equilibrium ecosystem</li> </ul>                              | Cattle and sheep,<br>associated with<br>irrigated and rain fed<br>cropping                |
| <i>Altai</i>                      | <ul style="list-style-type: none"> <li>• High mountains and desert valleys</li> <li>• Cold snowy winters, annual precipitation 400-500 mm, 60-120 frost-free days</li> <li>• Equilibrium ecosystem in north, non-equilibrium in south</li> </ul>  | Cattle, sheep, goats,<br>and horses in the<br>north, sheep, goats,<br>camels in the south |
| <i>Central and Eastern steppe</i> | <ul style="list-style-type: none"> <li>• Treeless central Asian grass steppe</li> <li>• Cold snowy winters, annual precipitation 150-250 mm, 110-140 frost-free days</li> <li>• Equilibrium ecosystem</li> </ul>                                  | Sheep, goats, horses,<br>cattle   |
| <i>Gobi</i>                       | <ul style="list-style-type: none"> <li>• Semi-desert and desert</li> <li>• Cold winters/hot summers, annual precipitation 100 mm but highly variable, 90-130 frost-free days</li> </ul>   | Sheep, goats, camels  |

*Adapted from D.P. Sheehy and J. Byambadorj, 2001, Environmental Assessment: Pastoral Risk Management.*

## 5.9

### LAND DEGRADATION AND DESERTIFICATION

Land degradation and desertification are widely recognized as significant problems in Mongolia. The Land Administration Authority estimates that approximately 11 million hectares or 7% of the total land area is degraded to some extent. But as Table 5.2 indicates there are many figures quoted for areas of land degradation, some of which are conflicting. This may be due to the difficulty of measurement, even using satellite data, in a country where desert comprises c.40% of the land area, and to the annual variability of vegetative growth.

However there is consensus among scientists, national and local government, and herders that land degradation is increasing, particularly around certain features, such as urban areas, roads and wells, and in areas with little water. In addition, there are areas of *undergrazing* in some remote locations, which can equally lower the livestock productivity of pasture.

The principal factors leading to degradation and desertification are considered to be:

- Climate change (especially increased drought);
- Overgrazing from concentration of livestock near population centers, wells and along the main roads in proximity to market;

- Wind erosion of cultivated areas and abandonment of cultivated land;
- Degradation due to rodent and insect damage to pastures;
- Damage caused by vehicles.

**Table 5.2 Areas of land and land degradation in Mongolia**

This table shows some of the available statistics on land degradation, some of which is conflicting: while the Land Administration Authority estimates that 11 million hectares are degraded to some extent, the UNDP MAP-21 estimates the total area of damaged or depleted land is over 121 million hectares. These differences are most probably due to different means of measurement, and the issue of the area of land subject to degradation is complicated by the large proportion of Mongolia's land that is desert, comprising 41.3% of Mongolia's land area. Note that the total area of degraded pasture (as estimated by the Land Administration Authority) in the 8 core *aimags* is 4,279,000 ha, i.e. 39% of the area estimated to be degraded to some extent by the LAA, and 2.9% of Mongolia's pastureland.

|  | Area (hectares)     | Source   |
|--|---------------------|--|
| Total Mongolia Land Area   | 156,410,000 (100%)  | GoM 2000 <i>Mongolian Statistical Yearbook 2000</i>                      |
| Rangeland for agricultural purposes  | 130,541,000 (83.5%) | GoM 2000 <i>Mongolian Statistical Yearbook 2000</i>                      |
| Degraded to some extent  | 11,000,000 (7%)     | Land Use Policy Institute (now Land Administration Authority)            |
| Total area of damaged or depleted land   | 121,700,000 (77.8%) | UNDP 1998 MAP-21: Mongolian Action Plan for the 21 <sup>st</sup> Century |
| Pastureland severely degraded due to intensive use of pasture through the year       | 8,600,000 (5.5%)    | UNDP 1998 MAP-21: Mongolian Action Plan for the 21 <sup>st</sup> Century |
| Area of grasslands damaged due to use without scheduling of periods for regeneration | 30%                 | UNDP 1998 MAP-21: Mongolian Action Plan for the 21 <sup>st</sup> Century |
| Area of <i>govi</i> desert   | (41.3%)             | UNDP 1998 MAP-21: Mongolian Action Plan for the 21 <sup>st</sup> Century |
| Increase in extent of sandy area over last 40 years                                  | 38,000 (0.024%)     | UNDP 1998 MAP-21: Mongolian Action Plan for the 21 <sup>st</sup> Century |
| Area of pasture estimated to be heavily degraded                                     | 7%                  | National Environmental Action Plan 2000                                  |
| Degraded pasture areas in selected <i>aimags</i> :                                   |                     |  |
| <i>Bayan Olgii</i>   | 465,900             | Land Use Policy Institute (now Land Administration Authority), 1997      |
| <i>Bayankhongor</i>  | 462,400             |  |
| <i>Dornod</i>  | 605,000             |  |
| <i>Dundgovi</i>  | 610,100             |  |
| <i>Omnogovi</i>  | 647,600             |  |
| <i>Ovorkhangai</i>   | 495,200             |  |
| <i>Tuv</i>   | 216,800             |  |
| <i>Uvs</i>   | 776,000             |  |
| Subtotal 8 core <i>aimags</i>  | 4,279,000           |  |

### 5.9.1 *Climate change*

The majority of informants in Mongolia, including government officials, academic experts, and herders, believe that the increased frequency and magnitude of drought and dzud, are due to climate change. However evidence of climate change in Mongolia remains equivocal, and it is not clear that climate change would necessarily lead to increased frequency of drought or dzud.

The Institute of Meteorology and Hydrology of Mongolia has an international reputation for the study of climate change. In June 2001, the institute hosted a China-Mongolia symposium on climate change in arid and semi-arid regions in northern Asia, at which several analyses including future climate scenarios, assessment of the impact of climate change, and drought assessment and monitoring were presented:<sup>(3)</sup>

- According to records from the last 60 years, the annual air temperature in Mongolia has increased by an average of 1.56C. This increase was greater in the winter (3.61C), lesser in spring (1.4-1.5C), and a decrease in summer (-0.3C).
- General circulation models show that air temperature would increase by 1.8-2.8C by 2040 and 2.8-4.6C by 2070.
- Soil carbon and nitrogen will decrease significantly as a result of climate change, levels of precipitation will increase but the increase in evapotranspiration is expected to increase 7-10X the increase in precipitation.

### 5.10 **WATER RESOURCES AND QUALITY**

Access to water resources is an issue for human and livestock consumption, and is a major factor influencing the availability and management of grazing land. It is estimated that 42.2% of people have access to a safe water supply. Limited access to safe water is considered to be a significant factor explaining the increase in rates of infectious disease observed in the last few years. Diarrhoeal diseases occur mostly in *sum* and *aimag* centers.<sup>(4)</sup>

There are three major drainages in Mongolia: rivers in the west drain to the enclosed great lakes basin, rivers in the east drain to Russia, via the Onon Gol and Ulz Gol, and to China, and rivers drain via the Selenge Gol to Lake Baikal in Russia. Although Mongolia's water resources are relatively low in absolute volumes compared with other countries, given Mongolia's small population the amount of water per person is relatively high. The annual water reserves available for use in Mongolia total in 34.6 km<sup>3</sup> of which 6.1 km<sup>3</sup> are groundwater resources. Surface water (rivers, streams and lakes) is extensive in northern and central regions, but govi and steppe areas in the southern parts of the country have to rely on solely on groundwater resources. The quality of groundwater in steppe and govi regions has high mineral content (0.7-1.2 g per liter, compared to

(3) Institute for Meteorology and Hydrology 2001 Fourth Mongolia and China symposium on climate change in arid and semi-arid regions in northern Asia.

(4) UNDP 1998 WASH-21: Issues and position papers on national water sub-sector policy

1g per liter maximum established in Mongolia’s water quality standards). The low quality of drinking water causes a high occurrence of liver, gallbladder, stomach, intestine and teeth diseases.

**5.11 BIODIVERSITY AND PROTECTED AREAS**

Mongolia’s diversity of species is due to its position at the transition from desert to steppe to taiga. There are low levels of endemism to Mongolia *per se*, but Mongolia’s ecosystems remain relatively intact, in contrast to ecosystems in neighboring countries: for instance the Gobi desert ecosystem is of global importance since it supports several species or sub-species that are already extinct in China. Mongolia’s anthropogenic grasslands are of particular interest, and cannot be found on the same scale elsewhere.

*Annex 9* provides detail on some key features of Mongolia’s biological diversity. The features of Mongolia’s biodiversity that is of most relevance to this project, apart from the need to avoid contravention of protected area regulation, are its economic importance, particularly to the poor, and the value of Mongolia’s agricultural biodiversity.

**5.11.1 Economic and social importance of biodiversity**

Based on secondary sources of information, and our field observations, it appears that biological diversity is economically important in several ways, listed in *Table 5.3*. This EA has not found any formal assessment of the relation between living standards and dependence on biological diversity, but some indications from our interviews and field observations are also provided in *Table 5.3*.

**Table 5.3 Economic and social importance of biodiversity**

| <i>Economic importance</i>  | <i>Importance for maintaining living standards</i>  |
|---|---|
| <ul style="list-style-type: none"> <li>• Biodiversity, particularly among grasses and herbs, may make a significant contribution to the ecological resilience of pastures;</li> <li>• Beneficial predators, for example birds of prey, control pest species;</li> <li>• Natural habitats of pasture and forest provide medicinal and food plants that are gathered from the wild; it is estimated that there are 845 species of medicinal plants, and 120 species of food plants, such as seeds for bread and pine nuts in Mongolia (National Biodiversity Action Plan);</li> <li>• Natural habitats provide mammals that can be hunted and traded for their meat and fur.</li> </ul> | <ul style="list-style-type: none"> <li>• Herders are reliant on biodiversity to maintain pasture (&amp; therefore) livestock productivity</li> <li>• Pastures and forests provide traditional medicines (for both people and livestock) used where modern medicines are not available or not affordable</li> <li>• Some species can provide ‘safety net’ income, following loss of livestock due to dzud or at any other time of need: for example small-scale hunting to provide meat and fur for sale.</li> </ul> |

### 5.11.2 *Agrobiodiversity*

There are thirty-two recognized breeds of livestock, four each of horses, camels and cattle, fifteen of sheep and five of goats. Examples of local breeds' characteristics include horses from Tes and Galshar, renowned for their speed and endurance, and the sheep from Gobi Altai and Bayad, known for their large size and high quality fleeces.

### 5.11.3 *Protected areas*

A total of 20,530,588 ha are currently designated as protected areas (13% of Mongolia's total area). Mongolia's protected areas system consists of four designations, described in *Table 5.4*.

**Table 5.4 Protected Area Designations in Mongolia**

| Designation                 | Current number | Total area    | Protected status  |
|-----------------------------|----------------|---------------|---|
| Strictly protected areas    | 12             | 10,494,283 ha | Representative of unique features and have preserved their original condition. Of scientific or cultural significance.<br>Internal zonation into pristine zones, conservation zones, and limited use zones.               |
| National Conservation Parks | 14             | 1,133,420 ha  | Relatively well preserved, with cultural, scientific, educational or ecological importance. Designated for tourism development.<br>Internal zonation into special zones, travel and tourism zones, and limited use zones. |
| Nature Reserves             | 16             | 1,823,580 ha  | Designated to create conditions for protecting, or restoring natural features.  |
| Monuments                   | 6              | 79,305 ha     | Natural unique formations, designated to protect historical and cultural monuments.   |

This chapter presents our conclusions on the potential environmental and social impacts of the SLP. The chapter discusses both the *positive* impacts and the *negative* impacts of the project, and begins with the assessments' conclusions on the overall impacts of the project. Specific impacts are described in more detail for each of the components.

### 6.1 OVERALL ENVIRONMENTAL IMPACT

The SLP has the potential to deliver a significant overall positive environmental impact, through a contribution to reduced land degradation in Mongolia. This conclusion has been reached based on the following reasoning:

- As cited in Chapter 5, at least 7% of Mongolia's pastureland (around 11 million ha) is suffering from land degradation and desertification.
- Also as cited in Chapter 5, there is evidence of climate change in Mongolia, which is probably accelerating land degradation directly due to drought, and indirectly due to the socio-economic impact of drought and dzud.
- In addition, current pasture management patterns in Mongolia are accelerating land degradation, particularly in localized areas, for example due to concentration of herds around *sum* centers and *aimag* centers, partly as a result of the impact of dzud and drought, resulting in patterns of livestock distribution and pasture over-use that have adverse effects on the sustainability of pasture.
- Therefore, successful actions to reduce herders' vulnerability through pastoral risk management offer a significant opportunity to contribute to reduced extent and severity of land degradation - *indeed it will be necessary to reduce land degradation in order to reduce herders' vulnerability to drought & dzud.*
- Community-level or bag-level management planning of pasture is proposed as a key part of the project's integrated approach to pastoral risk management. Our field observations and discussions with herders indicate that the empowerment of herders or herder associations to manage their pasture is of potential for reducing land degradation, both in times of drought and dzud, and at all other times.

### 6.2 OVERALL SOCIAL IMPACT

The sustainable livelihoods project has the potential to deliver an overall positive social impact, by empowering of herders to manage their livelihoods, and by

contributing to rising living standards among poor households and herder households.

This conclusion is based on the following reasoning for the 13 *aimags* where the LDF and microfinance component will operate:

- The intensive learning ICR carried out for the PAVGP concluded that the PAVGP had a positive impact on poverty. The continuation of the LDF should maintain and further extend this impact.
- Limited access of poorer households to microfinance, limits the ability of the poor to act to reduce their poverty and reduce their vulnerability through savings, asset accumulation, consumption smoothing and livelihood diversification.
- The design of the LIF component is based on the recognition of the perceived weakness of the LDF to adequately target the poor and to ensure social investments were demand driven. By paying additional attention to these issues, the SLP should ensure that positive social impacts are maximized and negative impacts avoided.

Our conclusion is based on the following reasoning for the 8 core *aimags* where the LDF, LIF, PRM and microfinance components will operate:

- Drought, dzud, land degradation, and increased vulnerability of herders is leading to significant reductions in living standards among poor and middle-poor herder households; and as cited in Chapter 5, the Mongolian rural economy and society centers around livestock management;
- Also cited in Chapter 5, lower living standards in rural Mongolia are associated with rising malnutrition, increased incidence of disease, and lower school attendance. As herders lose their livestock, they are increasingly attracted to *sum* and *aimag* centers, in order to reduce their insecurity, leading to concentrations of livestock around these centers, and further falls in livestock productivity and survival;
- Herders that have lost all of their livestock, are vulnerable to social breakdown in *sum* and *aimag* centers, resulting in malnutrition, depression, increased incidence of drunkenness among men, divorce, and increased incidence of domestic violence;
- This project, through the combined actions of the PRM, LIF and microfinance components has potential to contribute to increased empowerment of rural people over their livelihood strategies, and thereby halt & reverse the fall in living standards among the poor and middle-poor (i.e. low income earners) of rural areas.

Differences in livelihoods between the ethnic groups are too minor to warrant distinct approaches in the project design for different ethnic groups. The SLP design allows for decision-making on component details to be made at more local levels, which should allow for the preferences of different ethnic groups to be met. Many Kazakh people do not speak or read Mongolian and thus their access to project information would be restricted if it were only distributed in Mongolian. No ethnic beliefs or customs were identified that might conflict with or be adversely affected by the project activities. Sacred sites are unlikely to be at risk from planned project activities.

*Annex 8* notes a number of stakeholders' concerns about the project's social impact, and their indicators of success for the SLP. These form the basis of the measures proposed in the SLP.

### 6.3

#### *IMPACTS OF ACTIVITIES UNDER THE PRM COMPONENT*

The potential of the whole project to have a positive environmental impact on reduced land degradation is largely due to the pastoral risk management component. Indeed, this component is likely to be proven to be an essential complement to community infrastructure or rural microfinance in achieving environmentally sustainable reductions in herder vulnerability in rural Mongolia. The potential of the component to deliver positive improvements in reduced land degradation - in the core eight *aimags* - should far outweigh any localized environmental impacts of activities to be supported by the project.

The pastoral risk management component therefore has the potential to contribute to several commitments of the GoM to address land degradation:

- Mongolian Action Program for the 21<sup>st</sup> century: several activities, such as creating an integrated approach to land use planning, under actions to achieve the sustainable use and protection of land resources, and actions to combat desertification;
- National Environmental Action Plan (draft, 2000): actions under environmental and natural resources management, and to abate desertification;
- Biodiversity Conservation Action Plan for Mongolia (GoM 1996): action 3.2.10 to prevent pasture deterioration through overgrazing.

*Table 6.1* indicates which of the component's activities we consider may have localized negative impacts, and which we consider vital to ensuring the PRM component succeeds in delivering an *integrated* approach to pastoral risk management, and in so doing has a positive impact on land degradation. *Table 6.2* indicates the specific risks associated with activities, and sections 6.3.2-6.3.7 provide further detail.

### 6.3.1 *Impacts of small-scale developments under the component*

Rural Mongolia is very sparsely populated, and has very few large-scale infrastructural developments. Most of the developments under the PRM component are small in scale: the significance of the *direct* negative environmental impacts is likely to be small. This is especially the case in comparison to developments that are increasing in frequency, for instance mining projects, or petrol stations at *sum/aimag* centers.

However, in the event that some of the activities are scaled-up to wider areas, for example following their successful piloting, there may be cumulative impacts. A good example is rodent control: while in the pilot stage, the significance of the negative environmental impacts may be small, but when scaled-up, impacts could become significant. This provides the SLP with an opportunity to ensure that the pilot activities fully integrate the mitigation of environmental risks, in order that negative cumulative impacts upon scaling-up are avoided.

### 6.3.2 *Pest control*

A species of vole *Microtis brandtii*, commonly referred to as 'mice' in Mongolia, is widely seen by stakeholders as an agent of pasture degradation over large areas. Field observations indicated that local infestations of the rodents are widespread, and several informants described how areas as large as entire *sums* are infested by the voles. But *M.brandtii* is rare outside steppe areas with sandy soils, and does not occur in taller grass pastures.

In response to this problem, over the past two years, MoFA has been carrying out large-scale aerial distribution of seed treated with Zinc phosphide in order to control the rodent. Discussions of the FAO project preparation team with MoFA officials led to this method being excluded from financing under this project, in favor of piloting of alternative methods. The activity to pilot alternative methods presents a key opportunity to influence the development of environmentally sustainable methods of controlling this pest in Mongolia. Current plans are to pilot the development of the use of a biopesticide, Saliminol 239, which is based on *Salmonella enteridis* bacteria, and has been developed and used in the former Soviet Union and Cuba for some years.

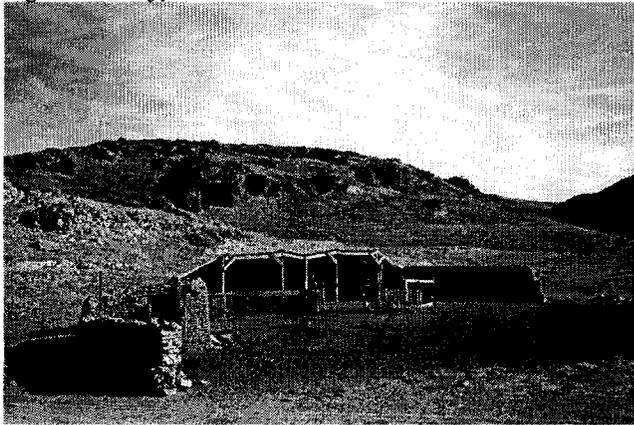
#### *Salmonella based rodenticides*

As part of this environmental assessment, we have investigated public information on Salmonella-based rodenticides. Extensive Internet searches yielded no reference to this approach, but a search on databases of international journal abstracts found thirteen journal papers between 1972 and 2001 on the subject. The database output, with abstracts, is given in *Annex 10*. Several of the papers concern technical testing of the biopesticides on rodents, while two (one English, one Swedish), concern associated human safety issues.

*Figure 7. Trucks delivering hay supplies for winter in Omnogobi*



*Figure 8. A typical winter shelter*



*Figure 9. A woman in Ovorkhangay displaying medicinal herbs*



**Table 6.1 Environmental impacts of activities under the Pastoral Risk Management Component**

Key: ✓✓✓ vital to positive impact, ✓✓ significant positive impact, ✓ limited positive impact, \*limited negative impact

| Activity   | Positive impact | Negative impacts | Comment   |
|--|-----------------|------------------|---|
| <b>Integrated risk forecasting, management and contingency planning</b>  |                 |                  |   |
| Improve emergency forecasting (weather & vegetation data);   | ✓✓              |                  | Should have positive impact as part of  |
| Improve dissemination of information to herders.   | ✓✓              |                  | An integrated approach to risk management.  |
| Support to the iterative process of <i>sum</i> -level risk management planning;                                    | ✓✓✓             |                  | Improved risk management is likely to lead to better local natural resource management.   |
| Awareness-raising among herders about the SLP and resolution 47  |                 |                  |   |
| Participatory workshops to develop annual <i>sum</i> -level PRM plans  |                 |                  | As above  |
| <b>Pasture and grazing management</b>  |                 |                  |   |
| Bag / <i>Sum</i> level land use maps;  | ✓✓              |                  | This activity is central to ensuring that herders can be empowered to sustainably manage their pasture and land resources   |
| Improved grazing discipline / practices  | ✓✓✓             |                  | Control of out of season grazing, improved otor, better regulations, and attempt to maintain winter stocking below carrying capacity will all contribute to more balanced grazing pressure.   |
| Apply / enforce existing land law and grazing rights   | ✓✓✓             | *                | Improved pasture allocation on basis of widely accepted rights will contribute to better grazing management. Access rights of poor herders with few animals need to be safeguarded.   |
| Inter- <i>sum</i> emergency winter otor reserves;  | ✓✓              |                  | Reserves will allow grazing pressure to be better spread over available pasture in drought and dzud years, rather than continuing to exploit stressed pastures. The reserves will be used only temporarily, and there will be sufficient time to allow pastures to recover following use in dzud years.   |
| Repair infrastructure (winter shelters, wells and service points) of 2 existing inter- <i>aimag</i> otor reserves; | ✓✓              | *                | Otor reserves are of importance to improving pastoral risk management. Their environmental benefits outweigh the risk of relatively insignificant negative impact associated with localized degradation around new wells, or building construction.   |
| Pilot alternative household-based rodent control methods.  | ✓✓              | *                | Rodent control is an important part of pasture recovery in heavily degraded areas. But there are potentially negative impacts depending on methods used. Biological poisoning with Salmonella is proposed, but this may carry significant human health risks when the pilot-tested approach is scaled up. Engaging the Ministry in an investigation of alternative methods could have significant wider benefits. |

**Table 6.1 Environmental impacts of activities under the Pastoral Risk Management Component (continued)**

Key: ✓✓✓ vital to positive impact, ✓✓ significant positive impact, ✓ limited positive impact, \*limited negative impact

| Activity   | Positive impact | Negative impacts | Comment   |
|--|-----------------|------------------|---|
| <b>Herders' organizations</b>  |                 |                  |   |
| Pilot activities to support the development & training of herders' groups/associations, NGOs and cooperatives;               | ✓✓✓             |                  | Likely to empower herders to be able and willing to manage pasture & land more sustainably  |
| Establishment of revolving multi-purpose funds, managed by associations/NGOs;  |                 |                  | Can contribute to better pasture and land management by herder associations.  |
| <b>Winter preparation of herders and livestock</b>   |                 |                  |   |
| Household preparations (hay-making and storage, loans for shelter rehabilitation/ construction, firewood preparations, etc); | ✓✓              |                  | Winter preparation is a vital part of reducing livestock losses due to dzud, and as part of the integrated approach should contribute to reduced land degradation. The incremental increase in timber or fuelwood use that will result from this activity is likely to be insignificant in comparison to wider patterns of timber and fuelwood use.   |
| Strengthen emergency-related anti-parasitic veterinary services  |                 | *                | Potentially harmful effects associated with the storage, disposal and packaging of the chemicals. Training of veterinarians could mitigate this.  |
| <b>Hay and fodder preparation</b>  |                 |                  |   |
| Pilot mechanized, commercial hay-making;   | ✓✓              | *                | Each of these activities should contribute to sustainable pasture management as part of the integrated strategy.  |
| Pilot household hay-making with animal- drawn harvesters;  | ✓✓              |                  | The avoidance of local oil spills or disposal or spare parts or disused machinery could be integrated into the piloting of mechanized haymaking, so that, when scaled-up, following the pilot, there will be no significant environmental impact.   |
| Pilot commercial fodder and concentrate production;  |                 | *                | There may be localized impacts associated with storage facilities or processing of concentrates, but these are highly unlikely to be significant.   |
| Develop and test a model for revolving <i>Aimag</i> emergency fodder funds.  | ✓✓              |                  | Negative impacts may occur if hayfields are not periodically fallowed (100 % biomass removal) to allow the ecosystem time to recover. Increased hay availability in winter may reduce (to a certain extent) the grazing pressure on winter pastures in winter/early spring. Hay storage by the <i>sum</i> emergency fodder funds may have a very positive impact on poor herding households who benefit from the fodder funds in times of need. The positive social and economic impacts of increased hay availability will outweigh the possibly negative environmental impacts. |

**Table 6.1 Environmental impacts of activities under the Pastoral Risk Management Component (continued)**

Key: ✓✓✓ vital to positive impact, ✓✓ significant positive impact, ✓ limited positive impact, \*limited negative impact

| Activity  | Positive impact | Negative impacts | Comment  |
|---|-----------------|------------------|--|
| <b>Water and well development</b>   |                 |                  |  |
| Community-based rehabilitation of wells;  | ✓✓              | *                | Water and well development will have an overall positive environmental impact, as long as user rights are clearly demarcated, since water improvement will spread existing grazing pressure over a wider, reducing grazing pressure around existing wells: the project will be taking a community-based approach, so this should be ensured. |
| Construction of new wells and reservoirs in areas where grazing resources are underutilized due to lack of water                              | ✓✓              | *                | If this community-based approach is not taken, the risks of spreading degradation to new wells (as well as failing to solve that around the existing) will be higher.  |
| <b>Restocking model as an emergency recovery mechanism</b>  |                 |                  |  |
| In response to demand, restocking, using resources shifted from LIF and RMF.  | ✓✓              | *                | Positive, if restocking is also used to improve livestock management and grazing practices: this is exactly what is planned under the SLP. But there is a risk of restocking exacerbating land degradation if it is not allied to sustainable pasture management.  |
| <b>Microfinance services for herders</b>  |                 |                  |  |
| Research on savings & credit;   |                 |                  | No impact.   |
| Work with Ag Bank to serve herders' needs;  |                 |                  | Positive if savings encourage assets to be held in bank accounts rather than in livestock.   |
| Piloting of livestock insurance.  |                 |                  | Improved risk management is likely to lead to better local natural resource management.  |
| <b>Institution-building and organizational capacity-building</b>  |                 |                  |  |
| Capacity-building and training for <i>sum</i> officials, bag governors, and selected <i>aimag</i> representatives to implement the component; |                 |                  | Improved institutional capability is likely to lead to enhanced ability to co-manage natural resources.  |
| Project management and implementation group at MoFA;  |                 |                  | No direct positive or negative impacts.  |
| Inter-ministerial national level PRM Working Group to assess program policy implications.   |                 |                  | Key opportunity to involve Ministry of Nature and Environment, and to mainstream action to reduce land degradation into national policy and legal developments.  |
| M&E of the PRM component  |                 |                  | Key opportunity to learn lessons on impact on land degradation   |

**Table 6.2 Risks of activities with limited negative impacts, depending on their location and exact nature.**

| <b>Activity</b>  | <b>ECO</b> | <b>LAND</b> | <b>H2O</b> | <b>WAST</b> | <b>HUNT</b> | <b>HEAL</b> | <b>STOR</b> | <b>Mitigation &amp; Monitoring</b>  |
|--|------------|-------------|------------|-------------|-------------|-------------|-------------|---|
| Pilot alternative household-based rodent control methods             | x          |             | x          | x           |             | x           | x           | <ul style="list-style-type: none"> <li>Select bio- or chemical pesticide with least environmental and human health impact. Integrate environmental &amp; safety issues into development &amp; evaluation of the pilot.</li> </ul>   |
| Strengthen emergency-related anti-parasitic veterinary services      |            |             |            | x           |             | x           | x           | <ul style="list-style-type: none"> <li>Ensure vets are trained to store, handle and apply treatments and dispose of wastes safely.</li> </ul>   |
| Pilot mechanized, commercial hay-making                              |            |             |            | x           |             |             |             | <ul style="list-style-type: none"> <li>Support to only existing enterprises is proposed.</li> <li>Integrate environmental concerns (e.g. disposal of oils or parts) into design and evaluation of the pilot.</li> </ul>   |
| Pilot commercial fodder and concentrate production                   |            |             | x          | x           |             |             | x           | <ul style="list-style-type: none"> <li>Ensure solid waste associated with packaging or inputs is disposed of carefully, away from watercourses etc</li> <li>If storage facilities are to be constructed, ensure seepage of any effluents from the storage is contained and not allowed to ensure watercourses.</li> <li>Integrate environmental concerns into the design and evaluation of the pilot.</li> </ul>  |
| Rehabilitation of wells and construction of new wells and reservoirs |            | x           |            |             |             |             |             | <ul style="list-style-type: none"> <li>As is already foreseen, ensure user rights, and herder-association based arrangements in the areas around the wells.</li> </ul>  |
| Emergency restocking.  |            | x           |            |             |             |             |             | <ul style="list-style-type: none"> <li>Ensure that restocking is allied to measures to encourage sustainable land management, such as herder groups and <i>sum</i>-level land use plans.</li> <li>As is already planned, maintain the rule that restocked animals are bought in the same local area as the restockees so there will be no immediate increase in the total livestock in the area.</li> <li>As is already planned, consider timing of restocking carefully, in order that restockees are able to have their new stock fully prepared for winter.</li> </ul> |

**Key**

ECO = Indiscriminate ecological impact, LAND = Localized land degradation, H2O = Pollution of watercourses or streams, WAST = Solid waste disposal, HUNT = Increased hunting, to unsustainable levels, HEAL = Human health risks in handling, storage etc, STOR = Land or water contamination during transport or storage.

- Friedman, CR., Malcom, G., Rigau-Perez, JG., Arambulo, P., and Tauxe, RV. 1996 *Public health risk from Salmonella-based rodenticides*. The Lancet **347**: 1705-1706. The authors draw attention to a rodenticide, "salmocoumarin" (Biorat), which is produced in Cuba and sold and distributed in developing countries world wide for the control of rats and mice, particularly in agricultural settings. The product contains *S. enteritidis* and warfarin. Because of doubts about the efficacy of such a product and concerns about the employment of a human pathogen in a rodenticide, the use of this product is questioned.
- Andersson, SA. and Nilsson PO. 1991 *Bacteriological warfare against rats and mice*. Svensk-Veterinartidning **43**: 4, 173-176. The use of cultures of *Salmonella* spp. earlier this century to control rats and mice is described. The same species (*S. typhimurium*, *S. enteritidis* and *S. dublin*) are seen in disease outbreaks in animals and man at the present time, and it is suggested that their use as rodenticides may have introduced them to the ecosystem.

The papers conclude that there are significant risks to wider human health, since the biopesticide, in effect, distributes *Salmonella*, which is also a human pathogen. This evidence suggests that development of this biopesticide for wider use in Mongolia would carry the potential of human health risks, and therefore the activity would contravene the World Bank safeguard policy on pesticides. The project preparation team has proposed that expert opinion on the pathogenicity of Saliminol 239 is sought, and if it is confirmed to pose human health risks, its use should be excluded from the SLP.

#### *Alternatives*

If Saliminol contains live bacteria, the SLP should carry out a full review of the potential alternative methods for rodent control, using an integrated pest management approach. A key observation, cited to this assessment by several independent informants, is that the rodent infestation is a *symptom* of pasture degradation, rather than a *cause*: pasture management in combination with integrated pest control methods therefore offer the opportunity to tackle the rodent problem while avoiding significant environmental and human health impacts. When the SLP identifies what approach to take to piloting IPM methods, it will be essential to adhere to an environmental management plan to ensure the integration of environmental and human health concerns into the development and piloting of any approach.

*Annex 11* lists the properties of the most commonly used chemical rodenticides, as listed in the WHO guidelines on the use of pesticides. Some of these are known to be highly toxic to other species and to humans. The following rodenticides are considered to be the least toxic to humans and non-target species:

- *Brodifacoum*, an organobromine that is stable at room temperature and insoluble in water. If it is used correctly it is not hazardous to humans or wildlife;

- *Chlorophacinone* is very stable in most conditions, and is of low toxicity to birds;
- *Phosphine*, a colorless gas with only a slight solubility in water, which had rarely led to poisoning to humans, mainly due to carelessness;
- *Warfarin*, a colorless crystal with a low solubility and relatively high stability. Warfarin may be the most suitable rodenticide to use in a human environment, as it has no major effects on humans.

### 6.3.3 *Rehabilitation and construction of wells*

The PRM component will rehabilitate sixty-six wells, and construct 18 new wells (compared to a total of 5,800 former wells that are currently not in use due to lack of repair). It is unlikely that there will be any cumulative effect on groundwater resources, since the total expected extraction of groundwater will be a tiny fraction of total groundwater resources. For the three *aimags* where SLP will invest in the construction of new wells, groundwater availability will be a criterion for siting of wells, based on hydro-geological surveys carried out by MoFA.

A second issue is localized pasture degradation around wells. The activities of land use planning, land certification, and construction of new wells will combine to reduce localized land degradation around existing wells:

- Although rehabilitation & construction of wells could lead to localized pasture degradation around wells, the project intends to carry out activities of land use planning and certification of herders' tenure in advance of well rehabilitation and construction, as part of an integrated strategy on pastoral management.
- The SLP will give priority to construction and rehabilitation of wells in areas where pasture is currently underutilized due to water scarcity. The breakdown of existing wells during the economic transition has led to unnecessary concentration of herds around too few functioning wells. This will lead to an immediate reduction of livestock concentrations around existing wells. This reduction will be maintained over subsequent years due to better land use planning and land certification.

### 6.3.4 *Restocking*

Restocking will take place in case in *sums* that have experienced a declared dzud, and animal losses at *sum* level are greater than 15 %. Risks of increased land degradation as a result of restocking will be minimized since restocking is not likely to add to the total number of animals, since it will be fully integrated into the broader pastoral risk management component:

- There is a risk of an overall increase in livestock numbers, without better distribution, leading to increased severity of land degradation, particularly around *sum* and *aimag* centers. But immediate increases in livestock numbers

due to restocking will be avoided by maintaining the rule that restocked animals are distributed only within a local area. This is specified in the Project Implementation Manual. Under PAVGP, of the 95,000 animals distributed to 1,728 herder households, the vast majority was procured from within the same district or sub-district. Procurement from within the same local area also ensures that restocked animals are of local genetic provenance and therefore suitable for local pastoral ecology. Furthermore, the allied activities of land use planning and improved grazing management should prevent longer term increases in livestock numbers as a result of herders' or restockees' wish to increase their herd sizes;

- There is a risk of loss of restocked livestock due to drought and dzud, leaving beneficiaries with debts that they are unable to re-pay, and a possibility of aggravating social problems. According to PIM criteria, all beneficiaries must have proven herding skills and to have owned viable or near viable herds prior to the dzud. All restocked livestock are to be insured and restocking will only be implemented in combination with actions to reduce risk that restocked livestock might die due to drought and dzud.

Under the PAVGP, most restocking was carried out over June-August. This is because restockees would not have sufficient hay or pasture to enable their new stock to survive through the spring or *summer*. Autumn restocking was avoided since it would not allow restockees sufficient time to prepare the stock for winter, or may leave potential restockees without stock, or with too few stock, over *summer*. The SLP will continue the practice of the PAVGP, and consider the timing of restocking carefully, in order to enable restockees' to prepare their new and old stock for winter and the risk of dzud without having to over-use their pastures.

### 6.3.5 *Veterinary services*

The PRM component will support the provision of veterinary services for the control of parasites that compromise animals' winter survival. The disposal of wastewater from anti-parasitic livestock dips may carry risks of the pollution of watercourses, since dips need to be sited in the vicinity of a water source, but negative impacts are unlikely to be significant. A common practice is to channel the wastewater to divert it away from watercourses, and generally speaking, Mongolians take great care to keep their surface and well water clean. Training of veterinarians and herders, plus vigilance for negative impacts by environmental inspectors and rangers are required mitigation efforts.

A further issue is the creation of increased levels of disposal of packaging and unused medicines, although we expect the quantities involved will be minimal.

### 6.3.6 *Hay-making and inter-sum/inter-aimag otor reserves*

The location of haymaking and otor reserves has been planned to ensure that they are not in any of Mongolia's protected areas, including strictly protected areas and national parks. In addition, it is important to ensure that the establishment of inter-sum and inter-aimag reserves does not lead to significant displacement of herders from their traditional /conventional otor or winter pasture areas: indeed the project preparation team has ensured the exclusion of areas with such risks in discussions with MoFA.

Mechanized haymaking is to be piloted over a negligible area (200 ha). However, were mechanized haymaking to be scaled-up over a greater area, there may be some limited localized risks of oil or fuel pollution of watercourses. There is an opportunity to ensure any machinery is designed to enable straightforward maintenance by herders, based on the availability of spare parts and available materials. There is an opportunity to include examination of possible actual environmental impacts during the pilot, in order that mitigation of pollution can be integrated into the designs /approach resulting from the pilot.

## 6.4 *RURAL MICRO-FINANCE*

The RMF component is not expected to have any direct environmental impacts, although it may have some indirect impacts.

### 6.4.1 *Possible positive impacts*

Indirectly, through contributing to reduced poverty and increased control of poor people over their livelihoods, particularly in combination with the pastoral risk management component, it has potential to deliver positive environmental impacts. For example, the component may result in herders converting part of their livestock assets (which herders in effect use as savings), into cash savings, thereby reducing their numbers of livestock. In combination with increased empowerment of herders or herder association to manage their pastures with bag-level plans or certified land-users' rights, the micro-finance component should enhance the options that herders have to sustainably manage their environmental assets.

### 6.4.2 *Uncertainty*

But predicting individuals' asset management strategies may not be so straightforward. An individual herder may seek to increase as well as diversify their asset portfolio, and may use their ability to access savings and credit to increase their herd sizes. Also, some individuals may use their improving asset base to invest in alternative income-generating activities. A negative impact on land degradation or of income-generating activities on the environment cannot be ruled out.

There is therefore an opportunity to ascertain whether the improved access to microfinance does indeed result in a more sustainable management of the environment by herders. Affirmation of this result should create significant interest among government, NGOs and international agencies working towards sustainable development in Mongolia. *We therefore propose that examination of this issue is explicitly included in preparations for and during the project MTR and ex-post evaluation.*

## 6.5 LOCAL INITIATIVES FUND

Due to the demand/community driven nature and 'open menu' approach of the LIF project component, and therefore the unpredictability of specific LIF sub-projects, it is relatively difficult to assess their potential environmental impacts. However, in general terms, the negative impacts of community infrastructure projects are *not* likely to be significant.

Whether any sub-projects will have significant negative impacts will depend on their scale, location, and other factors, and will be context-specific and localized. Those with potentially significant environmental impacts should undergo environmental screening or DEIA, under the Mongolian system of EIA, before a decision on approval.

Table 6.3 below summarizes the probability of environmental impacts potential LIF/LDF sub-projects, partly based on experience of the LDF to date.

### 6.5.1 Screening and monitoring

One of the key requirements to prevent any negative environmental impacts is sufficient capacity and qualification of the staff responsible for the environmental management. Therefore, it is essential to provide adequate training to the environmental officers in *aimag* and *sum* centers in environmental screening, monitoring, and assessment/measurement of environmental impacts.

There is an opportunity to include specific activities to encourage development of environmental NGOs at the *aimag* (and possibly *sum*) levels. This would increase the environmental capacity at local levels as well as widen the community involvement in the project. Environmental NGOs can play a role in environmental monitoring and well as implementation of sub-projects with environmental components. This can also be done in conjunction with other World Bank initiatives to catalyze the development of environmental NGOs in Mongolia.

### 6.5.2 Potential environmental impacts

If implemented successfully, the LIF/LDF could have overall positive environmental and social impacts, such as:

- Improvement of health care and sanitation facilities;
- Improvement of education and training facilities.

### 6.5.3

#### *Suggestions to enhance environmental benefits of the LIF*

The LIF component provides an opportunity to encourage communities to undertake projects with explicit environmental objectives. For example, *sum* and *aimag* centers have significant and visible problems with collection and disposal of solid waste, suggesting potential projects could address solid waste management. Examples such as forest regeneration in mountainous regions, and tree planting in the areas affected by soil erosion were eligible and were financed under the LDF previously.

“Environmental” projects will be eligible under the LIF, but the key change with LIF, as described in chapter 4 is to ensure a more demand-driven approach, and a greater self-help contribution. There is no reason to expect no demand for projects with “environmental” objectives. In fact a demand-driven approach is essential to ensure the economic, social and institutional sustainability of all sub-projects: for instance, tree planting would fail to achieve either environmental or social objectives unless the community has a stake in tree survival.

#### ***Box 6.1 Potential environmental projects under LIF***

- |  |
|--|
| <ul style="list-style-type: none"><li>• Solid waste management. (In fact previously under LDF solid waste was cleared as part of preparations for housing sites).</li><li>• Tree planting for timber, fuelwood and erosion control.</li><li>• Community propagation of seed banks for crop seeds, medicinal plant seeds etc.</li></ul> |
|--|

**Table 6.3 LIF/LDF potential direct environmental impacts**

| <i>Activity</i>   | <i>Probability of environmental impacts</i> |                 | <i>Comments</i>   |
|---|---|-----------------|---|
|   | <i>positive</i>                             | <i>negative</i> |   |
| <i>Current LDF activities</i>   |   |                 |   |
| Maintenance and rehabilitation/repair of minor roads and tracks and bridges               | medium                                      | medium          | <ul style="list-style-type: none"> <li>• Construction of bridges may prevent destruction of river beds at crossings;</li> </ul>   |
| Renovation of buildings for public use, including schools, hospitals, kindergartens, etc. | low   | low             | <ul style="list-style-type: none"> <li>• Potential impacts may include disposal of building materials, and health and safety issues during construction</li> </ul>  |
| Improvement of existing domestic water supply systems                                     | medium                                      | low             | <ul style="list-style-type: none"> <li>• Positive impacts may include safer drinking water and health improvements</li> </ul>   |
| Improvement of communal services and sanitation systems                                   | high  | low             | <ul style="list-style-type: none"> <li>• Health improvements due to better sanitation</li> </ul>  |
| Community forestry  | high  | low             | <ul style="list-style-type: none"> <li>• Positive impacts of tree planting</li> </ul>   |
| Fuel collection   | medium                                      | medium          | <ul style="list-style-type: none"> <li>• Reduction of the incidence and spread of forest fires due to collection of dead wood; negative impacts of cutting trees for fuel wood</li> </ul>                                     |
| Establishment of <i>sum</i> school and kindergarten farms                                 | none  | none            | <ul style="list-style-type: none"> <li>•</li> </ul>   |
| Provision of electric power for remote <i>sum</i> schools and dormitories                 | medium                                      | medium          | <ul style="list-style-type: none"> <li>• Potential positive impact of reducing the consumption of fuel wood; potential negative impacts of localized air pollution if local generator is used</li> </ul>                      |
| Production of toys for kindergartens  | none  | low             | <ul style="list-style-type: none"> <li>• Difficult to assess potential negative impacts without further knowledge of manufacturing methods proposed; use of plastics in manufacture may have environmental impacts</li> </ul> |
| Transport and equipment for rural health services   | none  | low             | <ul style="list-style-type: none"> <li>• Disposal of medical wastes</li> </ul>  |
| <i>Potential LIF activities</i>   |   |                 |   |
| Rehabilitation/construction of domestic wells   | medium                                      | medium          | <ul style="list-style-type: none"> <li>• Potential positive impacts on pasture due to better distribution of livestock as a result of more wells; potential negative impacts on water levels and availability</li> </ul>      |
| Rehabilitation of Small community irrigation systems                                      | low   | medium          | <ul style="list-style-type: none"> <li>• Impacts on water courses and salinization</li> </ul>   |

There are few conceivable alternatives to the activities planned under the PRM component that will deliver reduced vulnerability of herders, since the pastoral economy is the dominant feature of rural Mongolia. Indeed, the activities planned under both the PRM and LIF components are being addressed by several other internationally funded initiatives.

In this chapter we consider four alternatives: (i) that the pastoral risk management is implemented without the vital activities listed in chapter 6, (ii) the use of financial incentives, taxes, or direct government intervention in the pastoral economy; (iii) that the LIF component is carried out without adherence to environmental screening and assessment required under Mongolian law; and (iv) the 'no-project' situation.

### 7.1 PRM COMPONENT WITHOUT COMMUNITY-BASED APPROACHES

In the alternative that the PRM component is implemented without several of the activities that we conclude are vital to ensuring reduced land degradation, the potential of the component to deliver reduced land degradation is significantly reduced, and the risks of negative environmental and social impacts are significantly increased. Our reasoning set out in chapter 6 establishes that the potential positive impact of the PRM component centers upon the following activities:

- Support to the establishment of herders' groups/associations, NGOs and cooperatives;
- Support to the iterative process of *sum*-level risk management planning;
- Improved grazing discipline / practices;
- Apply / enforce existing land law and grazing rights.

Implementation of only the activities within the PRM component that carry the least positive potential, and greatest negative risks – such as fodder & concentrate preparation, pest control, veterinary services, well construction, restocking – would weaken the entire project strategy and place positive social and environmental at risk.

### 7.2 USE OF FINANCIAL INCENTIVES, TAXES, OR DIRECT GOVERNMENT INTERVENTION

Interviews and consultation with stakeholders in national and local government indicates that community-driven approaches to pastoral management are not yet well founded in Mongolia, (although there are notable exceptions such as the work of the Center for Policy Research carried out with UNDP funding). Responses to the question of how to address land degradation commonly include either a return to elements of the central planning and management carried out

prior to liberalization, or a heavy reliance on taxes or financial incentives to reduce livestock numbers and influence livestock distribution.

But analysis of rural livelihoods indicates that these approaches would fail to address the driving forces of land degradation and the increasing vulnerability of herders: indeed they would be likely to further disenfranchise the poorest herders from decision-making on pasture management, potentially lead to increased poverty and increased conflict over degrading pastures, and offer little prospect for reducing pasture degradation.

### 7.3 *LIF COMPONENT WITHOUT ADHERENCE TO SCREENING AND ASSESSMENT*

In the alternative that the LIF and LDF proceed without effective environment and social screening and assessment, it is possible that there will be localized negative environmental and social impacts of sub-projects, depending on the nature of the sub-projects. As set out in chapters 6 and 8, it is necessary for screening and assessment to be integrated into the sub-project implementation system.

### 7.4 *'NO PROJECT' SITUATION*

In the 'no-project' scenario, poverty and land degradation are likely to increase in extent and severity in the eight 'core' *aimags* and the pilot *sums* within these *aimags*. The same conclusion may be drawn for all other *aimags* - if it is the case that the LIF and LDF succeed in targeting the rural poor, and if the RMF component allows herders to liquidate livestock into cash more readily - since reduced poverty may allow herders to more sustainably manage their pasture resources.

This chapter describes the proposed environmental and social management plan (EMP) for the SLP. *Tables 8.2 and 8.3* detail the EMP actions, responsibilities, training requirements and costs. In addition *Annex 12* provides draft screening forms, guidance and checklists that are referred to in the EMP.

## 8.1

## KEY PRINCIPLES

This EMP has been prepared on the basis of the following principles.

Firstly, we have sought to avoid considering environmental and social sustainability of the SLP in isolation. Instead we have considered:

- (i) *How can sustainability (i.e. environmental, social, economic and institutional sustainability) be ensured at bag-, sum- and aimag- levels? and*
- (ii) *How can the SLP's contribution to this sustainability be maximized?*

For example, it would be counterproductive if the SLP was to place a disproportionate burden on *sum-* or *aimag-* level environmental inspectors while other projects, such as mining projects, with greater negative impacts require a significant proportion of their time.

Secondly, since the SLP is intended to be progressively decentralized, we consider that the bulk of environmental inputs to this project are required at *aimag* and *sum* levels. At these levels, there is an opportunity to build on the close working relationship of agricultural, environmental, social and health officers, and improve awareness of sustainable pasture management among all officers.

Thirdly, the SLP provides an opportunity to build a closer working relationship and a shared understanding between MoFA and MNE on the issue of sustainable pasture management.

Fourthly, the EMP does not propose an elaborate system of screening and assessment for activities or sub-projects within the SLP components. Instead, it is proposed that environmental and social considerations are fully mainstreamed into the process for identifying, planning, implementing and monitoring activities or sub-projects. The forms and checklists in *Annex 12* are intended to be merged fully with the LDF/LIF project implementation manual, and the overall system of project management. In addition, the approach taken is to ensure vigilance and screening in order that any activities or sub-projects requiring further assessment can be fed into the locally owned environmental assessment procedures used by *aimag* environment officers and agencies, and MNE.

Full details of the recommendations of the dedicated social assessment can be found in *Annex 8*. Most of these have been recognized in the design of the SLP. Key recommendations are:

- *Broaden the stated target groups for SLP so they include all groups implicitly included in project documents.* This is to ensure that stated target groups reflect actual beneficiaries, and that account is taken of the role of middle income and better off households in building sustainable livelihoods. Target groups would therefore include herding and settled communities in rural and peri-urban areas, with a focus on the able bodied poor and low-income households vulnerable to impoverishment and economic shock.
- *Calculate local contributions under the LDF/LIF on a project-by-project basis, rather than by a standard percentage.* This will ensure that local contributions are coherent within the project design, reasonable for poor households and that expected local contributions are easily understood by everyone. In other words, local government and the community should agree upon what part of the labor and what type of materials local people are able to contribute to a given project.
- *Develop three-way contracts* under LDF/LIF and PRM components between local government, groups or herders' associations using the facilities and specific individuals who are to hold primary responsibility for maintenance. This will make responsibilities clear for the maintenance of infrastructure.
- *Members of sum local government (most likely in the social welfare and service center) should act as community social workers.* This will ensure that poorer herding households gain access to herder associations, are included in pasture risk management, and will benefit from PRM activities.
- *Allow for local-level monitoring systems that are meaningful to local people, and ensure a clear M&E system that is manageable at wider levels.* For example, the project should distinguish between what higher administrative levels need to monitor and what local people need/want to monitor about project activities.
- *Integrate further social assessment exercise into the system of identifying, planning and monitoring projects.* Social issues are integrated into the EMS proposed in *Annex 12*. This includes a means of identifying any requirements for focused topical studies to answer questions of immediate relevance to the project as they arise.

The resettlement policy framework for SLP will apply to (i) construction and/or rehabilitation of small scale infrastructure sub-projects, such as roads, bridges, buildings, structures, water supply and sanitation facilities, and other civil work, and (ii) potential eviction of people from land to be used under the SLP. *Annex 13* describes the resettlement policy framework in full.

The SLP will avoid or minimize any potential relocation of people by exploring alternate designs, including through full consultation with potential affected people during the process of screening for social impacts. Affected people will be fully consulted during the planning and implementation of resettlement activities.

Where involuntary resettlement or negative impacts are unavoidable, it will follow the Constitution of Mongolia (Article 16, sub-article 3) and the Mongolian Law on Land, November 11, 1994 (Article 37) in that all affected people should be:

- Provided with an equivalent amount and type of land in the area for their losses;
- Compensated at replacement cost for structures and other property/assets;
- Given transportation assistance and assisted with the move.

The SLP will take the following measures to ensure that, in cases where resettlement is unavoidable, social impacts are minimized or avoided:

- All sub-projects requiring resettlement will prepare a resettlement plan;
- The compensation, resettlement and rehabilitation activities or community options will be satisfactorily completed before funds are disbursed for the sub-project;
- Affected people will be able to file complaints to the project authorities in the following order: *Bag, Sum, Aimag* and finally to LSPO in Ulaan Bataar;
- The cost of compensation and rehabilitation will be the responsibility of the local government at the *sum* level;
- Community solutions and options for resettlement will be eligible for funding from the Local Initiative Fund (LIF);
- All project related staff and consultants will be provided orientation and training on resettlement issues and implementation;
- The SLP will assign staff at the central and *aimag* levels to guide and monitor resettlement activities;
- Monitoring for resettlement matters will be a regular part of project monitoring.

*Table 8.3* below sets out clear actions and responsibilities required to ensure that these measures are implemented, and the screening system proposed for the project includes screening for all social impacts including resettlement (see *Annex 12*).

The SLP will adopt an ethnic minorities development strategy to guide its approach to working with ethnic minority communities. The principles underlying the ethnic minorities development strategy are:

- ethnic minorities will benefit from the Project;
- potentially adverse effects on ethnic minorities caused by project activities will be avoided or mitigated.

The strategy will be based on the Constitution of Mongolia which states that: “No person should be discriminated against on the basis of ethnic origin, language, race, age, sex, social origin and status, property, occupation and post, religion, opinion or education. Everyone should have the right to act as a legal person” (Article 14, sub-article 2); and the “Right to fair acquisition, possession and inheritance of moveable and immovable property” (Article 16, sub-article 3).

The strategy will be based on the Mongolian law under which there are no differences in the entitlement of the different ethnic groups to natural resources.

In areas inhabited by ethnic minority communities, project implementation will be based on the following procedures:

- there will be informed participation of the ethnic minority people themselves;
- local preferences will be identified through direct consultation;
- indigenous knowledge will be incorporated into project approaches; and
- sub-project proposals will be determined and prioritized by the ethnic minority communities themselves.

Project staff and community mobilizers in *aimags* such as *Bayan Olgii*, *Uvs*, and parts of *Dornod* will be of the same ethnic group as the ethnic minority beneficiaries themselves.

Additional information dissemination and community outreach will be made to ethnic minority communities. For example, in Kazakh areas and other ethnic minority areas where needed, the local language will be used in print, media and in consultation. This is also confirmed in the Constitution of Mongolia, which allows “national minorities” are allowed to use their native languages (Article 8, sub-article 2).

Under the LIF component, more flexibility in the choice of sub-projects within the project menu will be allowed for ethnic minorities, especially as strongly requested by the people themselves. One example is the pressing community need and frequently requested service for the rehabilitation of housing for Kazakh returnees.

Monitoring and evaluation activities will include monitoring of the progress of the project among ethnic minority communities. Regular project progress reports will integrate all *sum* and *aimag* reports on the fulfillment of the project's ethnic minority development strategy.

## 8.5

### TRAINING

The EMP also refers to training requirements associated with the specific actions proposed. Put together, the training can be seen to address a number of areas:

- The need to improve awareness of sustainable livelihoods and pastoral risk management among government officials and herders. There is a natural tendency to equate pastoral risk management (i.e. reducing people's vulnerability) with pasture management, but there is a clear difference. This is required in advance of the project launch workshops and at intervals throughout the project. This proposal responds to our observation that understanding of pastoral risk management is relatively weak, compared to understanding of animal husbandry for example, among these officials. Expertise on pastoral risk management is strong within research institutes of both MoFA and MNE.
- Training for the LSPO, PMUs, APACs and SPACs on the screening and reporting system proposed for the project, as set out in *Annex 12*. This can be mainstreamed into the training that will be required for the smooth operation of the entire project management system, and in demand-driven approaches under the LIF/LDF;
- Training to build the capacity of local environmental inspectors, to ensure adequate screening of impacts of the PRM component. The requirement for this should be confirmed or rejected at the end of PY1 in the *sums* in which the PRM activities have been focused;
- Training in integrated pest management for relevant personnel, associated with the pilot activities in pest control;
- On-the-job training for staff of the LSPO or the PMU of the microfinance component, through working with international consultants, in advance of MTR and ex-post evaluations, to determine whether increased access to microfinance, results in herders changing their asset management strategies, and whether that includes a reduction in livestock numbers.
- Bringing together groups of environmental inspectors and officers from *aimag* and *sum* levels, to encourage inter-*aimag* and inter-*sum* training, for example in ideas for environmentally positive LDF sub-projects.

There is also a number of information and training needs arising from the

dedicated social assessment. Suggestions are set out in *Table 8.1*.

**Table 8.1 Suggestions to address information and training needs in social assessment**

|  |
|--|
| <b>Herders associations</b>  |
| <ul style="list-style-type: none"><li>• seminars providing information on the relative advantages of working in association, being formally registered, as either co-operatives or NGOs.</li><li>• training/seminars in business and financial management and seminars in marketing that would directly link them to market information and sources of supply/ buyers of livestock products.</li></ul> |
| <b>Bag leaders</b>   |
| <ul style="list-style-type: none"><li>• Training in group meeting and leadership skills, group organization, proposal formation and writing, community participation, including gender issues and outreach to poor households.</li></ul>   |
| <b>Community Social worker training</b>  |
| <ul style="list-style-type: none"><li>• Professional social work training, with attention to gender issues and outreach to poor households.</li></ul>  |
| <b>Overall Information needs</b>   |
| <ul style="list-style-type: none"><li>• Post public information about project activities - activities financed under SLP, breakdowns of monies available for and spent on each activity - at <i>sum</i> government offices. In Kazakh speaking <i>sums</i> these posters should be posted in Kazakh language.</li></ul>  |

## 8.6

### **COSTS OF THE EMP**

The costs of the EMP are modest and can be easily incorporated into costs of project management. There are few financial costs (c. USD 55,000), and the majority of that is a *sum* (c. USD 50,000) to cover contracting of local consultants to carry out any environmental screening, or assessments that may be required. Other costs are the time required of officers at national, *aimag* and *sum* levels to ensure environmental sustainability is maximized, totaling c. 37 man-months, and inputs to be made by the World Bank to monitoring and review at MTR and at the *ex-post* evaluation.

**Table 8.2 Environmental management plan: key issues and actions**

| Issue  | Action   | Responsibility  | By When  | Training  | Cost   |
|--|--|---|--|---|--|
| <b>Project appraisal and launch</b>  |  |   |  |   |  |
| Pastoral risk management is not widely understood by stakeholders to be more than pastoral management alone. | <ul style="list-style-type: none"> <li>Invite local experts on pastoral risk management to contribute to project launch workshops</li> <li>Invite representatives from UMENGO and from MNE institutes to project launch workshops</li> </ul> | LSPO / PAPO and MoFA, in liaison with MNE   | During preparation for project launch workshops in Spring 2002 | There is an opportunity to provide training in issues of pastoral risk management to MoFA, MNE and <i>aimag</i> staff in advance of the launch workshops. | 5000 USD to cover participation of local experts in sustainable pasture management in workshops or to facilitate training in sustainable pasture management. |
| <b>Key social assessment issues</b>  |  |   |  |   |  |
| Need to ensure targeting of all social groups cited in project document                                      | <ul style="list-style-type: none"> <li>Broadening of stated target groups so that they include all target groups stated in the project documents</li> <li>Monitoring of inclusion of target groups</li> </ul>                                | LSPO  | Continuous   | Include targeting as a topic in training on PRM or sustainable livelihoods  | No incremental costs   |
| Ensure access of poorer households to herder associations, and are included in PRM activities                | <ul style="list-style-type: none"> <li>Assign <i>sum</i>-level staff with responsibility to work with the poorest to ensure this</li> </ul>  | <i>Sum</i> -level environment officers and inspectors, or social department staff | Continuous   | As above on targeting   | No incremental costs   |
| Need to base monitoring and evaluation on information that is meaningful to local people                     | <ul style="list-style-type: none"> <li>Identify what local people want to monitor the project for</li> <li>Carefully distinguish between local people's monitoring needs, and the needs of higher administrative levels</li> </ul>           | LSPO, with <i>aimag</i> and <i>sum</i> -level staff                               | During inception   | None  | No incremental costs   |
| Resettlement issues  | <ul style="list-style-type: none"> <li>Implement resettlement plan as set out in <i>Table 8.3</i></li> </ul>   | LSPO  | Throughout   | None  | No incremental costs   |
| Ensuring ethnic minorities receive benefits of the project   | <ul style="list-style-type: none"> <li>Implement ethnic minorities development plan</li> </ul>   | LSPO  | Throughout   | None  | No incremental costs   |

**Table 8.2 Environmental management plan: key issues and actions (continued)**

| Issue  | Action   | Responsibility  | By When   | Training  | Cost   |
|--|--|---|---|---|--|
| <b>Pastoral risk management component</b>  |  |   |   |   |  |
| Vigilance for, screening of, and monitoring of specific developments under the PRM component, whilst avoiding increased workload for environment officers and inspectors | <ul style="list-style-type: none"> <li>Environmental inspectors and officers kept fully informed of PRM activities through involvement in PRM working groups</li> <li><i>Aimag / sum</i> level environmental officers &amp; inspectors include reporting on PRM in regular reporting to Governors &amp; MNE</li> </ul> | PRM Working Groups  | Continuous  | During PRM activities in the pilot <i>sums</i> in PY1, conclusions should be drawn on whether environmental officers and inspectors require additional training to improve screening for PRM component impacts. | <ul style="list-style-type: none"> <li>Man-days for environmental inspectors and officers to participate in PRM working groups;</li> <li>50,000 USD to cover any contracted inputs for screening or assessment that are required.</li> </ul> |
| Include environmental officers in capacity-building and training on pastoral risk management   | <ul style="list-style-type: none"> <li><i>Sum</i>-level environmental inspectors included in PRM Working Groups' training</li> <li><i>Aimag</i>-level environmental officer identified and included in PRM <i>aimag</i>-level coordination and implementation units</li> </ul>   | <ul style="list-style-type: none"> <li>MoFA agree with <i>aimag/aum</i>-level governors of level of involvement of environmental officers and inspectors</li> <li>Environmental officers and inspectors attend</li> </ul> | <p>By end of first quarter of the project (July 2002)</p> <p>Continuous through the project</p> | This action directly concerns training.   | Included in costs of capacity-building and training sub-component  |
| Environmental inputs to annual <i>sum</i> -level PRM plans   | Environmental inspectors included in participatory workshops to develop annual PRM plans   | <ul style="list-style-type: none"> <li><i>Sum</i> governors agree involvement with environmental inspectors</li> <li>Environmental inspectors attend workshops</li> </ul>   | Annually in advance of the participatory workshops  | Training requirements for this are addressed above.   | 32 mandays (1 man-day annually of environmental inspectors' time)  |
| Potential to include environmentally positive projects under multi-purpose funds   | <i>Sum</i> and <i>aimag</i> level agricultural and environmental officers draw up list of possible environmentally positive projects   | <i>Sum</i> and <i>aimag</i> -level environmental inspectors   | During discussions on multipurpose funds at <i>aimag</i> and <i>sum</i> levels                  | Environmental officers should be brought together to share ideas and experience on environmentally positive sub-projects.   | Environmental officers will be APAC and SPAC members therefore no incremental cost.  |
| Lesson learning on sustainable pasture management as part of M&E of the component  | PRM Working Groups, including environmental officers, consider lessons learned   | PRM Working Groups  | During PRM Working Group lesson learning discussions  | Training requirements are included above.   | Included in cost of PRM Working Groups   |

**Table 8.2 Environmental management plan: key issues and actions (continued)**

| Issue   | Action  | Responsibility  | By When  | Training  | Cost   |
|---|---|---|--|---|--|
| Inclusion of MNE in interministerial national PRM Working Group   | <ul style="list-style-type: none"> <li>MoFA invite MNE to participate in this interministerial group</li> <li>MNE identify regular officer for inclusion in the group</li> </ul>  | MoFA, with MNE  | By project start in Spring 2002, & regular attendance thereafter   |   | No incremental cost  |
| Potential to include MNE / Land Administration Authority data on land use in bag- and <i>sum</i> -level land-use maps | <ul style="list-style-type: none"> <li>MoFA Implementation Unit discuss land-use data with LAA</li> <li>Exchange of ideas and information between <i>sum</i>-level officers involved in preparation of land-use and LAA officers</li> </ul>   | MoFA, with <i>sum</i> -level agricultural inspectors and LAA  | Continuous   | n/a   | No additional cost in MoFA / <i>sum</i> inspectors' time<br><br>20 man-days from LAA (5 per year)  |
| Human health risks associated with piloting of biopesticides  | <ul style="list-style-type: none"> <li>Reconsider the SLP approach to pest control: abandon proposal to pilot Salmonella-based pesticides and adopt piloting of IPM</li> </ul>  | MoFA with World Bank project appraisal team   | end of November 2001   | n/a   | Cost of piloting IPM activities component are unlikely to differ greatly from the cost of piloting biopesticides   |
| Need to reduce or mitigate environmental impact of pest control   | <ul style="list-style-type: none"> <li>Information in this report to be passed to <i>aimag</i>-level environmental officers</li> <li><i>Aimag</i>-level environmental officers participate in discussions on integrated pest management with MoFA / agricultural inspector</li> <li><i>Aimag</i>-level environmental officers implement EMP for pilot IPM measures</li> </ul> | MNE pass this information onto environmental officers<br><br><i>Aimag</i> -level environmental officers               | By project start (Spring 2002)<br><br>During project inception / as part of investigation of alternatives in pest control<br><br>During implementation of pest control | Training in IPM approaches for relevant staff may be required | Negligible incremental cost of mitigating environmental risks.<br><br>15 man-days of <i>aimag</i> -level environmental officers' time per pilot<br><br>10,000 USD to cover cost of training in IPM |
| Opportunity to associate health & sanitation awareness with well rehabilitation and construction                      | <i>Sum</i> and <i>aimag</i> officers in charge of well rehabilitation and construction invite <i>aimag</i> and <i>sum</i> level health officers, and nurses to train well-users in sanitation issues  | <i>Sum</i> and <i>aimag</i> officers in charge of well rehabilitation and construction, with health officers / nurses | During well rehabilitation and construction activities   | None required   | 168 man-days (2 man-days of health officers / nurses time per well)  |

**Table 8.2 Environmental management plan: key issues and actions (continued)**

| Issue  | Action  | Responsibility                                       | By When                                  | Training  | Cost   |
|--|---|--|--|---|--|
| Sharing of experience and lessons learned with other initiatives in pasture management & environmental capacity                          | MoFA and MNE jointly draw up list of all ongoing initiatives<br><br>MoFA and MNE regularly arrange meetings between individuals from project implementation units to share lessons & raise mutual awareness   | MoFA and MNE   | Continuous                               | None required   | 20 man-days of relevant officers in total over 4 years   |
| <b>Microfinance Outreach Services</b>  |   |  |  |   |  |
| Will liquidation of livestock assets into cash savings reduce livestock numbers?   | Examination of this issue through participatory appraisal of micro-finance impact in advance of and during project MTR and ex-post evaluation.  | LSPO with assistance from World Bank Task Manager    | In advance of MTR and ex-post evaluation | Training of key counterparts in MoFE, MoFA, and MNE as part of this investigation                               | No incremental costs (inputs of local consultants on appraisal of microfinance impact are included in project budget).   |
| <b>Local initiatives fund / Local development fund</b>   |   |  |  |   |  |
| Vigilance for, screening of, and monitoring of sub-projects, whilst avoiding increased work-load for environment officers and inspectors | <ul style="list-style-type: none"> <li>PMU in MoFE to prepare management system for LIF / LDF targeting, project identification and reporting that includes key sections on environment [based on annexed draft - yet to be done], agreed with MNE</li> <li>MoFE ensure awareness of LDF / LIF officers of shortlist of projects requiring limited environmental review</li> <li>Aimag / sum level environmental officers &amp; inspectors include reporting on LIF / LDF sub-projects in regular reporting to Governors &amp; MNE</li> </ul> | PMU in MoFE with MNE assistance, plus APAC and SPACs | By project launch                        | Training in screening and monitoring system during capacity-building in targeting, participatory approaches etc | <p>Incremental costs:<br/>5 man-days MoF / MNE time in total</p> <p>252 mandays of <i>aimag</i>-level environmental officers (4 years X 21 <i>aimags</i> X 3 man-days per year)</p> <p>Plus use of the budget for necessary contracted inputs in screening and assessment (cited above under PRM component).</p> |

**Table 8.2 Environmental management plan: key issues and actions (continued)**

| Issue  | Action   | Responsibility   | By When  | Training   | Cost  |
|--|--|--|--|--|---|
| Potential to encourage environmentally positive projects   | <ul style="list-style-type: none"> <li>MoFE draws up list, based on draft (based on draft included in annex)</li> </ul>  | PMU in MoFE  | By project start in Spring 2002  | See above under PRM multipurpose fund                                    | Negligible cost in man-hours  |
|  | <ul style="list-style-type: none"> <li>Inform <i>aimag</i> and <i>sum</i> level managers of the eligibility of environmental projects</li> </ul>   | <i>Aimag</i> and <i>sum</i> -level managers of LDF / LIF | At launch of LDF / LIF   |  | Included within LDF / LIF management  |
|  | <ul style="list-style-type: none"> <li>Proactively raise awareness among <i>sum</i> and bag-level beneficiaries of the eligibility of environmental projects / businesses</li> </ul>   |  | Continuous through the project   |  |   |
| <b>National and international project monitoring and evaluation</b>  |  |  |  |  |   |
| Requirement for concise analysis of environmental impact, based on information from <i>aimag</i> and <i>sum</i> levels | <ul style="list-style-type: none"> <li>MoFE and MoFA agree with MNE and World Bank, a concise format for annual reporting on environmental impact, and on synthesis reports in preparation for project mid-term review and ex-post evaluation</li> <li>MoF and MoFA complete annual and synthesis reports using this format</li> </ul> | LSPO, MoFE and MoFA, in liaison with MNE and World Bank  | <ul style="list-style-type: none"> <li>amend and agree draft format [to be annexed] by project launch</li> <li>complete annual reports in September of each year; complete synthesis reports in advance of MTR and evaluation</li> </ul> | Limited training in the use of reporting formats adopted for the project | 20 mandays in total (5 mandays of MoF / MoFA officers per year)   |
| Requirement for environmental evaluation & lesson learning in MTR and ex-post evaluation                               | World Bank appoint local or international environmental specialist, with approval of MNE, to provide inputs to MTR and ex-post evaluation  | World Bank Task Manager                                  | In advance of MTR and ex-post evaluation   | None required  | To be resourced by World Bank.  |
| <b>Total costs</b>   |  |  |  |  | <ul style="list-style-type: none"> <li>USD 55,000</li> <li>Approximately 26 manmonths of officers' time</li> <li>World Bank inputs</li> </ul> |

**Table 8.3 Involuntary Resettlement and Land Acquisition Procedures**

| Resettlement Procedures  | When  | Who is responsible                    |
|--|---|---------------------------------------|
| 1. Assign staff at central and <i>aimag</i> levels for guiding and monitoring social matters. (These can be the same staff assigned to environmental screening and monitoring).  | Start of overall project implementation.                                | LSPO                                  |
| 2. Provide orientation to central, <i>aimag</i> and <i>sum</i> project staff on resettlement guidelines, approval and implementation procedures. Provide detailed training to Community mobilizers in screening and implementation procedures.   | Start of project implementation in particular location                  | LPSO                                  |
| 3. Consultations during <u>bag and sum meetings</u> :<br>a. Consult with people during community outreach/public relations activities regarding potential negative social impact related to proposed sub-project proposals;<br>b. Discuss local government and community approaches to solving any potential negative impacts;<br>c. Obtain agreement from affected households on proposed options and/or compensation;<br>d. Document the agreement and have signatures from head of household and bag/ <i>sum</i> official; signed documents should be attached to sub-project proposals.            | At bag and <i>sum</i> consultations during community outreach           | SPAC members and Community Mobilizers |
| 4. Screening of <u>designs for construction and rehabilitation of proposed civil works in each submitted sub-project</u> (see checklist in <i>Annex 12</i> ):<br>a. Review designs for impact on affected people due to land acquisition and/or impact on property, assets and business;<br>b. Approve designs if there are no negative social impacts or if mitigation measures are appropriate;<br>c. If designs are not approved, request for redesign or alternative plans or for specific mitigation measures and re-submit;<br>Conduct 2 <sup>nd</sup> review of re-submitted designs and so on. | During review of sub-project proposals                                  | SPAC                                  |
| 5. Prepare <u>resettlement plan</u> for affected people, if required. It should include:<br>a. a baseline survey of affected households (name of head of household, age, sex, occupation, no. of household members), impact on type and amount of land/property/assets/business;<br>b. detailed information on amount of compensation and other assistance to be provided to the affected households <u>or</u> community options;<br>c. schedule for compensation provision and assistance;<br>d. cost estimate and funding source <u>or</u> community options.  | After approval of sub-project proposal and before disbursement of funds | Community Mobilizer                   |
| 6. After satisfactory provision of compensation and other assistance <u>or</u> completion of community options, request for disbursement of funds for sub-project.   |   | SPAC                                  |
| 7. Monitoring of social matters and preparation of short report for LPSO. (A standard format can be developed for this report). World Bank will conduct spot checks during supervision missions.   | Semi-Annual   | APAC                                  |

| <i>Resettlement Procedures</i>  | <i>When</i> | <i>Who is responsible</i> |
|---|-------------|---------------------------|
| 8. Integrate all <i>sum</i> and <i>aimag</i> reports for inclusion into regular project progress reports. | Semi-Annual | LSPO                      |

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Natasha Pairaudeau authored a dedicated social assessment, from which we have drawn several conclusions and recommendations in this report.

## *ANNEX 2 - ITINERARY*

- |                      |   |
|----------------------|---|
| 2 September 2001     | <ul style="list-style-type: none"><li>• Arrival in Ulaan Baatar</li></ul>   |
| 3-7 September 2001   | <ul style="list-style-type: none"><li>• Meetings with stakeholders and key informants in Ulaan Baatar</li></ul>   |
| 8 September 2001     | <ul style="list-style-type: none"><li>• Visit to UNDP project day in Tov Aimag</li></ul>  |
| 9 September 2001     | <ul style="list-style-type: none"><li>• Travel to Mandalgovi, Dundgovi Aimag</li></ul>  |
| 10 September 2001    | <ul style="list-style-type: none"><li>• Interviews with Dundgovi aimag governor and officers</li><li>• Visit to Mandalgovi agricultural fair</li><li>• Travel to Dalanzadgovi</li></ul>   |
| 11 September 2001    | <ul style="list-style-type: none"><li>• Workshop and interviews with Umnogovi aimag governor and officials</li><li>• Interview and site visit with governor of Khangor sum, Umnogovi aimag</li><li>• Travel towards Ovorkhangay aimag</li></ul> |
| 12 September 2001    | <ul style="list-style-type: none"><li>• Interview with herders, Bayangol sum, Ovorkhangay aimag</li><li>• Meeting and interviews with Ovorkhangay aimag officers</li></ul>  |
| 13 September 2001    | <ul style="list-style-type: none"><li>• Further interviews with Ovorkhangay aimag officers</li><li>• Travel to Khujirt sum, Ovorkhangay aimag</li><li>• Interview with Khujirt sum officers</li></ul>   |
| 14 September 2001    | <ul style="list-style-type: none"><li>• Interviews with herders and rangers, Khujirt and Batzulii sums, Ovorkhangay aimag, and Lun sum, Tov aimag</li><li>• Travel to Tov Aimag</li></ul>   |
| 15 September 2001    | <ul style="list-style-type: none"><li>• Arrive Ulaan Baatar</li></ul>   |
| 16 September 2001    | <ul style="list-style-type: none"><li>• Writing</li></ul>   |
| 17-21 September 2001 | <ul style="list-style-type: none"><li>• Writing</li><li>• Interviews and wrap-up meetings in Ulaan Baatar</li></ul>   |
| 22 September 2001    | <ul style="list-style-type: none"><li>• Depart Ulaan Baatar</li></ul>   |

### ANNEX 3 - BACKGROUND TO THE SLP

GoM initiated its National Poverty Alleviation Program (NPAP) in 1994, when the economy was in deep crisis, suffering from hyperinflation, a massive population shift from cities to rural areas, and a rapid rise in unemployment and poverty, as a result of the break-up of the Soviet Union and the collapse of COMECON.<sup>1</sup> The NPAP, with support from 15 international agencies, including USD8.85m of IDA credit for the *Poverty Alleviation for Vulnerable Groups Project* (PAVGP; 1996-2000) carried out a broad range of actions including emergency public works, small-scale enterprise development, health, education and social welfare. Under the NPAP, the *Poverty Alleviation Program Office* (PAPO) was formed, reporting to the chairman of the *National Poverty Alleviation Committee* (NPAC), ie the Prime Minister. Following the 1999-2000 *dzud*, a livestock restocking component was added to the PAVGP.<sup>2</sup>

The Mongolian National Statistical Office (NSP) carried out a *Participatory Living Standards Assessment* (PLSA) in 2000, as a building block towards the PRSP. The assessment was the first of its kind in Mongolia, using participatory learning and action methods to broaden and deepen understanding of poverty at the national level, and to provide an opportunity for the voices of rural and urban people to be heard in national policy-making. The need to reduce risk in pastoral livestock production, improve social infrastructure in rural areas and smaller urban centres were among the key conclusions of the assessment.

Based on lessons from experience under NPAP and on the recommendations of the joint Government/ UNDP/ World Bank evaluation mission, Government of Mongolia prior to the general election of July 2000 drafted its own proposals for the scope and content of a second programme to address the major sector issues identified above. This programme was given the working title of the Household Livelihood Capacity Support Programme (NHLCSPP – or LSP for short). Following the change of Government after the July 2000 general elections, the previous Government's proposal regarding LSP was reexamined, endorsed and finalised by the new Cabinet in May 2001. GoM recently approved a National Program to Assist the Protection of Livestock from Drought and Dzud.<sup>3</sup> GoM has requested World Bank support for aspects of this program, and has begun to prepare the SLP for financing by IDA, with possible grant contributions from other agencies.

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(1) The first Living Standards Measurement Survey in 1995 found that 36.3% of the population were below the poverty line.

(2) World Bank 2001 *Implementation Completion Report for the Poverty Alleviation for Vulnerable Groups Project*. Report No. 22232-MN.

(3) Government of Mongolia 2001 *Government Resolutions on Drought and Dzud*. Decree No. 47 and No. 48.

#### ANNEX 4 - WORLD BANK ENVIRONMENTAL ASSESSMENT POLICY

This annex provides further detail on relevant aspects of World Bank policy on environmental assessment.

The World Bank applies environmental and social safeguard policies in the following areas:

| <i>Environmental safeguard policies</i>   | <i>Social safeguard policies</i>  | <i>Legal safeguard policies</i>  |
|---|---|--|
| <ul style="list-style-type: none"><li>• Environmental assessment</li><li>• Natural habitats</li><li>• Pest management</li><li>• Forestry</li><li>• Safety of dams</li></ul> | <ul style="list-style-type: none"><li>• Cultural property</li><li>• Indigenous peoples</li><li>• Involuntary resettlement</li></ul> | <ul style="list-style-type: none"><li>• Projects in disputed areas</li><li>• Projects on international waterways</li></ul> |

In particular, the relationship of the environmental assessment of this project with the project's legal documents is based on the following World Bank Operational Procedures, Best Practices and Guidelines:

- OP4.01, BP4.01, GP4.01 (Environmental assessment);
- OP4.04, BP4.04, GP4.04 (Natural habitats);
- OP4.09 (Pest management).

Following the World Bank environmental and social safeguards screening procedure, the proposed project has been assigned Category B. This means that limited environmental analysis of the SLP is considered appropriate, since the project may have specific negative environmental impacts. Recognition of the SLP's B rating is consistent with regional practice for community-driven project components and for those with significant involvement in the livestock sector. Accordingly, environmental and social assessments are required during project preparation.

In accordance with OP4.01, the environmental assessment of the SLP is considered as an ongoing process, beginning with project identification. Therefore, this report presents the conclusions of a dedicated environmental assessment which is only a part of this ongoing process. The process has included lessons learning from related previous World Bank-financed experience in Mongolia (particularly under the PAVGP) and will continue through project appraisal, implementation, monitoring and evaluation.

The following aspects of World Bank safeguard policies are considered to be of most relevance to the SLP, and are described in further detail below:

- World Bank experience and guidance on environmental assessment of community investment projects;

- World Bank experience and guidance on sectoral-level and strategic environmental assessment;
- Operational policy 4.09 on pest management;
- Operational policy 4.04 on natural habitats.

### 1.1.1 *Environmental assessment of community investment projects*

In conducting this environmental assessment, particular reference has been made to the following policies and best practice:

- Graham, D., Green, K. & McEvoy, K. 1998 *Environmental guidelines for social funds*. Prepared for the World Bank Latin America and Caribbean Region;
- GOPA-Consultants 2001 *Mainstreaming safeguard policy compliance within community-driven development initiatives in World Bank-funded operations*. Report to the World Bank;
- World Bank 1998 *Environmental assessment sourcebook update: Environmental assessment of social funds*;
- World Bank Environmental Assessment Sourcebook, Chapter 6 on *Sector and financial intermediary lending and environmental review*.

These reports refer specifically to cases in which World Bank financing, or parts of this financing, is distributed to intermediaries such as local development funds administered by local government, or other agencies. The community investment fund component under the SLP, for example, are obviously similar cases. Best practice developed from World Bank experience in several parts of the world, indicates that environmental assessments of such funds should develop environmental screening and monitoring procedures for sub-projects to be financed by the funds.

In addition, the following key points arise from experience:

- Community investment funds can proactively seek to finance environmentally beneficial projects;
- The development of screening & monitoring mechanisms for the fund can have knock-on benefits in helping environment ministries in their development of their screening procedures;
- Mainstreaming of environment into the sub-project cycle, requires attention to targeting and promotion of the fund, environmental screening, finding cost-effective and simple means of environmental assessment of sub-projects where it is required, environmental monitoring, and training requirements;
- Community investment funds should be consistent with national sustainable development strategies or land use plans.

### 1.1.2 *Sectoral-level EA and Strategic EA*

In conducting this environmental assessment, reference has been made to the following documents:

- ERM 1999 *Case studies on regional and sectoral EA: an analysis of lessons learned*. Report to the World Bank;
- ERM 1999 *Sectoral environmental assessment*. Report to the World Bank.

- World Bank 1998 *Environmental assessment sourcebook update: Strategic environmental assessment*.

To some extent this environmental assessment can be viewed as a sectoral-level environmental assessment, since the SLP addresses a vast geographical area. In addition, the exact location and nature of many (though not all) of the specific activities to be financed by the SLP is not yet known. This is especially the case for the LIF.

A selection of key issues arising from sectoral-level environmental assessment are:

- Environmental assessment at this level often encounters difficulties in the availability of baseline data, and in the assessment of cumulative impacts;
- Consultation with stakeholders should continue before, during and after the environmental assessment;
- There are significant benefits in sectoral-level assessment, since the need for detailed environmental assessment of sub-projects can be significantly reduced;
- By carrying out sectoral-level assessment, alternatives with lower adverse environmental impacts or greater positive impacts can be identified before sub-projects are identified;
- The sectoral EA process provides an opportunity for more strategic and continuous collaboration between concerned ministries / agencies.

This experience provides the basis for aspects of the environmental management plan in *chapter 8*, and environmental management system in *Annex 10*.

### 1.1.3 *Pest management*

The World Bank policy on pest management states:

*In assisting borrowers to manage pests that affect either agriculture or public health, the Bank supports a strategy that promotes the use of biological or environmental control methods and reduces reliance on synthetic chemical pesticides.*

With particular reference to agricultural pest management, the policy states that the World Bank supports *integrated pest management*, and the safe use of agricultural pesticides. Within the context of the World Health Organization's *Recommended classification of pesticides by hazard and guidelines to classification*, the World Bank applies the following criteria (to both chemical and biological pesticides):

- Pesticides must have negligible adverse human health effects;
- They must be shown to be effective against the target species;
- They must have minimal effect on non-target species and the natural environment;
- Their use must take into account the need to prevent the development of resistance in pests.

Furthermore, the World Bank requires that any pesticides it finances must be manufactured, packaged, labelled, handled, stored, disposed of, and applied

according to standards acceptable to the Bank. The World Bank does not finance pesticides in WHO categories IA and IB at all, or in category II, if they are likely to be accessible to lay personnel, farmers, etc.

#### 1.1.4 *Natural habitats*

The World Bank policy on natural habitats states that the Bank supports the protection, maintenance and rehabilitation of natural habitats. The Bank promotes and supports natural habitat conservation and improved land use by financing projects designed to integrate the conservation of natural habitats and the maintenance of their ecological functions into national and regional development.

The policy goes on to state:

*“The Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its siting and comprehensive analysis demonstrates that overall benefits from the project outweigh the environmental costs.”*

The policy defines 'natural habitats' as 'land and water areas where (i) the ecosystem's biological communities are formed largely by native plant and animals species, and (ii) human activity has not essentially modified the area's primary ecological functions. Under this definition, a significant proportion of Mongolia's pastures can be regarded as natural habitats.

## **ANNEX 5 - MONGOLIAN POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK**

### **1.1.1 *General Legal Framework***

One of the provisions of the new Constitution adopted in 1992 was Article 16, which assures the citizens of Mongolia, right to a healthy, safe environment and the right to be free from environmental pollution and ecological imbalance.

Article 6 of the Constitution states that the land, its groundwater, forests, water, wildlife, plants and other natural resources are public property and are protected by the state. Land other than pastures, common use land, and land for state special needs is owned by the citizens of Mongolia. Article 16, paragraph 2, states that citizens of Mongolia have a right to live in an ecologically clean environment and to be protected from environmental pollution and ecological imbalances. Other basic laws have provisions on environmental issues as summarized in the box.

The EIA law of 1998 is the key law concerning environmental assessment in Mongolia. Detail on this law is given below

### **1.1.2 *Policy and Institutional Framework***

In June 2000 the new Government came in power and presented Action Program to the nation. The Action Plan has specific sections on the Government policy on environment.

The strategic objective of the Government is to ensure sustainable economic development based on ecological balance and restoration of natural resources by creating favorable legal conditions for protection of natural resources and by promoting public participation. The following measures will be undertaken to achieve the strategic objective:

- Develop and implement long-term and phased environmental management plans and programs integrated with regional and economic development concepts
- Improve environmental legal system specifically with regard to the integration of roles and responsibilities of central state administrative organizations, local administrations, NGOs and communities.
- Encourage and support any initiatives on cleaner production technologies

### *Box 1. Key environmental laws of Mongolia*

- Article 17 of the Constitution states that all citizens are obliged to protect the environment. Article 38.4 lists the plenary rights of environmental protection.
- Civil Code, 1994 Article 87 states that the land, except that under private ownership of Mongolian citizens, as well as the subsoil and its resources, forests, water resources, and fauna are the property of the state; other land, except pastures and areas under public and special use, may be owned only by citizens of Mongolia.
- Articles 100.17 includes provisions regarding land ownership, lifetime possession, inheritance, use for an indefinite period, use of land surfaces by owners of immovable property, rights to limited use, transfer of rights, confiscation, etc.
- Law on Government, 1993, Article 11 defines the plenary rights of the state in respect of environmental protection and the efficient use of natural resources.
- "Law on Administrative and Territorial Units and Their Management, 1992, Article 5 provides that the financial resources of administrative and territorial units consist of the accumulation of taxes and payments charged in accordance with the laws of Mongolia over income from all kinds of production and services, land, natural resources, and business entities.
- Articles 14.17, 15.3, 16.3, 19.3, and 19.7 contain provisions regarding environmental protection, use of natural resources, and restoration of damages.
- Law on the Legal Status of Cities and Villages, 1993, Article 6 contains legal provisions for land ownership by cities and villages. Articles 17.4 and 19 assign cities and villages certain powers and duties regarding land use and environmental protection, and establish citizen obligations to protect the environment
- Law on Health Article 4 includes measures to be taken for the protection of public health, including prevention of pollution of the soil, water, plants, and air, as well as appropriate measures to improve environmental quality.
- Law on Tax, Articles 16 and 17 states that state and local taxes include taxes on natural resources.
- Law on Foreign Investment, 1993, Article 10.2.3 states that foreign investors should be responsible for environmental protection and restoration. Article 12 provides the legal basis for land ownership by economic entities with foreign investment.
- Law on Borders, 1993, Articles 20 and 21 provide for hunting and protection of wildlife and the environment in border areas.
- Law on Administrative Penalties, 1992, Articles 46 and 51 provide mechanisms for administrative and judicial appeals.
- Criminal Law, 1993, Chapter VII contains provisions on criminal liability, including: violations of regulations governing use of mineral resources (including gold, other precious metals, gemstones, etc.); violations of laws on land and water use; arson in forests or steppe areas; illegal cutting of trees or damaging of forests; illegal hunting, air pollution, etc.
- A package of 17 new environmental laws was passed between 1995 and 2000, including a general Environmental Protection Law as well as specific laws on land, hunting, water, forests, protected areas, natural plants, air, protection from chemicals and environmental impact assessment.

- Establish standards for protection and restoration of natural resources
- Strengthen measures on protection, restoration and proper use of forest resources. Develop and implement Action Plan on Forestry.
- Expand and improve management of Special protected areas. Take measures on improving living conditions of inhabitants in surrounding areas.
- Regenerate endangered species of plant and wildlife
- Improve institutional performance and operations of the environmental monitoring network. Refurbish equipment and facilities used for monitoring of environmental degradation, meteorological forecast and radiation.
- Improve environmental information system and statistical data
- Provide legal incentives for long-term land possession by individuals and organizations to encourage sustainable use of land resources
- Provide assessment to desertification process and implement programs to arrest land desertification and degradation.
- Control rodents and insect to protect forest, land and pasture resources
- Improve solid waste management in the main urban centers.

Environmental regulations and policies have been implemented in three administrative levels. In the central level, Ministry of Nature and Environment is main body for implementing of the Government policies.

The mission of the Ministry of Nature and Environment (MNE) is to ensure Mongolia maintaining an ecological balance and to ensure that its present and future citizens can live a clean and healthy environment consistent with sustainable development objectives<sup>1</sup>. The objectives of MNE are to:

- *monitor implementation of environmental legislation;*
- *organize the rehabilitation of natural resources damaged by unlawful actions;*
- *approve, monitor, and provide technical assistance to local authorities and state agencies for implementation at the local level;*
- *provide coordination across sectors and among regions;*
- *establish limits on resource use and to develop and have approved appropriate standards of environmental quality; and*
- *promote research and development, international cooperation, and the dissemination information on environmental issues;*

It is notable that the MNE is given responsibility for organizing the implementation of environmental policy, rather than directly implementing it. The structure of MNE is reflected in the Government Resolution.

MNE has the following units:

- Environmental Strategic Management and Planning Department
- Department of Environment Policy Coordination

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(1)<sup>1</sup> *Business Strategy and General System of Structure of the MNE*

- Administration and Management Department
- Information, Monitoring and Evaluation Department
- International Cooperation Division

There are three agencies allied with MNE namely: Environmental Protection, Land Administration Authority and Agency of Environmental Monitoring and Hydrology.

### 1.1.3 *Local government in Mongolia*

Local Government in Mongolia consists of 21 aimags, divided into 334 soums, which in turn divided into of 1,630 bags. The central body at all levels of local government is the Governor. The Governors are the representatives of the State and directly report to the respective higher-level Governors. The Governor of the aimag and city is proposed by the respective khurals and appointed by the Prime Minister.

There are also citizens' representative khurals at each level of the government. However, their powers are largely powers of approval, supervision and direction. In fact, the real decision-making power has come to be concentrated in the hand of governors, while the khurals have to come to exist only to approve the decisions of the local governor's office.

The administrative arm of the governor is the governor's office, the structures and staff that are to be determined by resolution of the Government. Aimag core Governors office in each aimag consists of the following units in addition to Governor and Vice-Governor:

- State Administration Department
- Legal Department
- Production, Trade, Agriculture and Environmental Department
- Financial and Economic Policy Department
- Social Policy Department.

In addition, there are numerous agencies under the Governor such as Environmental and Agricultural. Environmental agencies are staffed with 4-6 persons at the aimag level, in addition to the sum-level environmental inspectors and rangers.

Analogously, soum Governor's Offices are limited to a maximum of 5 - 10 persons, such as: the Governor; Vice Governor; Head of Governor's Office; Social Development Officer (education, health care); Agriculture and Environmental Officer; Social Care Officer (Poverty reduction, employment and social care); Operations Officer.

Local government functions are set out in the Law on Administrative and Territorial Units and Their Governance. In addition, there are at least 29 other

laws containing 280 provisions to the functions of local authorities and too numerous of Government Regulations, Ministerial Orders, and other Instructions and Guidelines produced by agencies of the central government. The aimag and soum governors receive numerous orders, guidelines, and directives from the higher level Government, line Ministries and agencies. However, these orders and directives do not have resources both financial and human to implement. Local administrative staff often lacks the managerial and technical capability to design and implement appropriate service delivery and local development support programs.

#### 1.1.4 *EIA Procedures in Mongolia*

The Mongolian Law on Environmental Impact Assessment of 1998 establishes general requirements, procedure and implementing aspects of Environmental Impact Assessment. The main purpose of this laws is to regulate relations to environmental impact assessment and the decision making on the implementation of projects.

The law stipulates that any projects or development initiatives are the subject for Environmental Screening or General Environmental Impact Assessment (GEIA). The project proponent shall submit summary and technical documentation to Ministry of Nature and Environment or to local administrative body in line with Screening Criteria established in the law. Any development projects in agriculture sector except water reservoir, irrigation facilities and cultivation of virgin land are under responsibilities of aimag and soum administrative bodies. On the basis of conclusions of environmental screening and DEIA, one of the following decisions will be made:

- To provide approval for implementation without further assessment, if the project impacts and consequences meet the requirements of existing environmental standards and requirements
- In cases where negative impacts are deemed to be unlikely and/or insignificant. Project implementation may be approved subject to specific conditions regarding management and organizational measures to be taken
- In cases where negative impacts are regarded as likely and or significant, the project may be required to undergo more detailed assessment or Detailed Environmental Assessment (DEIA)

If a DIEA is required, the project proponent is responsible for contracting a licensed organization to conduct or implement the DEIA in accordance with the requirements set out in the GEIA. Any entities can obtain a license from Ministry of Nature and Environment. The application for license shall contain information of organization and personal information of proposed environmental experts. The DEIA report shall contain the following information:

- Local environmental conditions (climatic and atmosphere data, water, geology, soil, biology, land use and types, physical conditions, historical heritage, socio-economic conditions etc.)
- Project alternatives and costs
- Recommendation for the mitigation of environmental adverse impacts
- Analysis and evaluation of the extent and scope of any negative impact and its consequences
- Environmental risk assessment
- Environmental Management Plan
- Environmental Monitoring Plan
- Outcome of public consultation
- Other issues related to the project.

Once DEIA is completed, the project proponent is required to inform any concerned organizations, as well as the general public, about the results of the DEIA and to submit the report to the organization which carried out the original DEIA for revision and approval. The project proponent is also required to develop an environmental management and monitoring plans with the following information:

- Measures to reduce or mitigate adverse environmental impacts which have been identified during the DEIA and budget and timing of planned activities
- The Environmental Monitoring Plan shall contain activities to monitor changes revealed during the project implementation and relevant ways of reporting results as well as methodology for monitoring

Enforcement and monitoring of the implementation of Environmental Management Plan in compliance with the terms and conditions of EIA permit is the responsibility of local government agencies. To this end, local governments receive copies of all relevant EIA reports and letters from the MNE. The law also required for environmental audit in case of damage occurred to human health and environment from economic activities. For this purpose, MNE shall appoint working group to verify cases with DEIA report. If the audit finds the entity which had conducted the DEIA is liable for damage, MNE will require to conduct the DEIA again or may suspend license of the entity.

The law specifies rights and obligations of project proponents and license-holder. In accordance with EIA procedures, a licensed organization has the following responsibilities and rights:

- A licensed organization is expected to work systematically to improve the qualifications of experts in carrying out the DEIA, to keep abreast of current developments in science and technology, and to collect up-to-date information on matters related to the protection of the environment and natural resources
- A licensed organization is expected to make a contract with the project proponent to furnish an accurate estimate of the costs of carrying out the DEIA in the most economical way.

- A licensed organization is expected to keep confidentiality of relevant information on technology, equipment and business activities of the project proponent.
- A licensed organization is expected to be responsible for the result of the DEIA.
- A licensed organization is expected to amend if necessary the DEIA report in response to comments and suggestions obtained from relevant agencies and public.
- A licensed organization shall have right to obtain all necessary documentation and if necessary to have free access to premises of the project proponent.

Under the EIA procedures, the roles and responsibilities of the project proponent are as follows:

- Submit to MNE and the government units in aimag and soums the required documentation of and information about the project in due time and provide additional information if the decision making official requests to do so.
- If after the GEIA, it is decided that a DEIA must be carried out, the project proponent has to negotiate with an organization licensed to carry out DEIA
- The project proponent is also required to develop an environmental management and monitoring plans and to obtain the permit before the project implementation.
- The project proponent is expected to meet promptly all terms and conditions of applicable permits and to diligently implement any approved environmental management and monitoring programs.
- Provide information and entry access to own premises to duly authorized representatives from a license-holder contracted to carry out the DEIA.

#### 1.1.5

#### *International conventions*

Mongolia is signatory to the following conventions:

- Vienna Convention for the Protection of the Ozone Layer
- Montreal Protocol on Substances that deplete the Ozone Layer
- UN Framework Convention on Climate Change
- Convention to Combat Desertification
- World Heritage Convention
- Convention on International Trade in Endangered Species (CITES)
- UN Convention on Biological Diversity
- Cooperation for Environmental Protection (Bilateral agreements with the governments of Russia, People's Republic of China, and the People's Republic of Kyrgyzstan).

## **ANNEX 6 - LIST OF PAPERS REVIEWED**

### **Government of Mongolia:**

Government of Mongolia 2001 *Government Resolutions on Drought and Zud: Decree Nos. 47 and 48.*

National Statistical Office of Mongolia 2001 *Participatory Living Standards Assessment 2000*

### **Papers relating to the PAVGP and the preparation of the SLP:**

World Bank 2001 *Implementation Completion Report: Poverty Alleviation for Vulnerable Groups Project.* Report Number 22232-MN.

Batkin, A., Bumhorol, T., Mearns, R. And Swift, J. 1999 *Independent Evaluation of the National Poverty Alleviation Programme.* Government of Mongolia/UNDP/World Bank.

Hanstad T. and Duncan, J. 2001 *Land Reform in Mongolia: Observations and Recommendations.* RDI Reports on Foreign Aid and Development #109.

Swift, J. 2001 *Managing the Risk of Drought and Zud: Concepts and Issues:* Report to FAO.

Carloni, A. et al 2001 *Mongolia: Sustainable Livelihoods Project Preparation Support Mission Draft Aide Memoire.*

Chaturvedi, S. 2001 *Mongolia: Sustainable Livelihoods Project Community Investment Fund Component.* Report to Government of Mongolia/World Bank.

Skees, J. and Enkh-Amgalan, A. 2001 *Examining the Feasibility of Livestock Insurance in Mongolia.* Report to GoM / World Bank.

Cheng, E. 2001 *Mongolia: Sustainable Livelihoods Project Rural Microfinance Component.* Report to Government of Mongolia / World Bank.

John Morton 2001 *Report of a Consultancy on Pastoral Risk Management in Mongolia.* Report to Government of Mongolia / World Bank.

Miller, D. 2001 *Mongolia: Sustainable Livelihoods Project Pastoral Risk Management Strategy and Action Plan.* Report to Government of Mongolia / World Bank.

Sheehy, D. And Byambadorj, J. 2001 *Mongolia: Sustainable Livelihoods Project Environmental Assessment Pastoral Risk Management.* Report to Government of Mongolia / World Bank.

### **Sources of baseline environmental data:**

Environmental Protection Agency 2000 *Mongolia Special Protected Areas of Mongolia.* Ulaan Baatar.

National Agency for Meteorology, Hydrology and Environment Monitoring of Mongolia 2001 *Fourth Mongolia and China Symposium on Climate Change in Arid and Semi-arid Regions over the Northern Asia.* Ulaan Baatar.

National Statistical Office of Mongolia 2001 *Mongolian Statistical Yearbook 2000*. Ulaan Baatar.

UNDP 1998 *WASH-21: Issues and position papers on national water sub-sector policy*. Ulaan Baatar.

UNDP 1998 *The Mongolian Action Programme for the 21<sup>st</sup> Century*. Ulaan Baatar.

Government of Mongolia 1996 *Biodiversity Conservation Action Plan for Mongolia*. Ulaan Baatar.

Government of Mongolia 2000 *National Environmental Action Plan Executive Summary and Volume 1 Main Document*. DRAFT.

**Background papers on EA and World Bank Policy:**

World Bank 1989 *Environmental Assessment Sourcebook Volume 1 Policies, Procedures and Cross Sectoral Issues*.

Graham, D.J., Green, K., and McEvoy, K. 1998 *Environmental Guidelines for Social Funds*. Report to the World Bank.

Gopa Consultants 2001 *Mainstreaming Safeguard Policy Compliance Within Community Driven Development Initiatives (CDDs) in World Bank Funded Operations: An Exploratory Study Focusing on Africa*. Report to the World Bank.

## **ANNEX 7 - STAKEHOLDERS CONSULTED**

### **Meetings in Ulaan Baatar 3-9 September**

#### **3 September 2001**

Mr Puntsagsuren Head, Policy Planning Division Ministry of Food and Agriculture (MoFA)  
Ms Onon Director, Poverty Alleviation Programme Office (PAPO)  
Mr Banzragch State Secretary, Ministry for Nature and Environment (MNE)

#### **4 September 2001**

Mr Enkh-Amgalan Centre for Policy Research  
Dr Dolgormaa, Senior Expert (EIA), MNE  
Dr Banzragch DG EPA, General State Inspector, Environmental Protection Agency (EPA)  
Ms Davaasuren Executive Director, Union of Mongolian Environmental NGOs (UMENGO)

#### **5 September 2001**

Ms Carloni, Dr Remenyi, Mr Liu, Mr Baas FAO project preparation team  
Mr Hanimhan Deputy Director of Strategic Planning and Policy Department, Head of External Relations, MoFA  
Mr Dalantainyam Dagvaa MoFA  
Dr Natsagdorj Director, Institute of Meteorology and Hydrology  
FAO team inception Meeting to discuss project preparation, including PAPO (including Mr UrlBatar), Ministry of Finance and Economy, Ministry of Education, MNE (Mr Bayesgalan), MoFA, Ministry of Social Protection, FAO team

#### **6 September 2001**

UMENGO meeting [to be inserted]  
Mr Siisel Senior Partner Consulting Unit  
Dr Tsogtbaatar Director Institute of Geoecology

#### **7 September 2001**

Mr Gankhuyag Director, Land Administration Authority  
Dr Khuldorj National Programme Coordinator, Secretary of NCSD, Mongolian Action Programme for the 21 Century (MAP 21)  
Mr Enkhbat Director Credit Department, Trade and Development Bank of Mongolia  
Prof. Erdenebaatar Research, Information and Extension, Mongolian State University of Agriculture  
Dr Badarch Mongolian Nature and Environment Consortium  
Ms Buyant Environmental Protection NGO

8 September 2001

Visit to UNDP MAP-21 project open day

Field visit to Dundgovi, Omnogovi, and Ovorkhangai Aimags 10-15 September

**10 September 2001 - Mandalgovi (Dundgovi Aimag centre)**

|                      |  |
|----------------------|--|
| Governor             | Dundgov Aimag  |
| Ms.Sh.Otgontsetseg   | Secretary of the aimag PAPO                                  |
| Mr.N.Radnaagotov     | Head of Division of Sports and Physical Culture of the aimag |
| Ms.D.Burmaa          | Head of Employment Coordination Division                     |
| Mr.A.Tsolmon         | Director of Social Policy Department                         |
| Mr.Sh.Baljinyam      | Staff of Social Policy Department                            |
| Mr.D.Ganbold         | Staff of Social Policy Department                            |
| Mr.T.Bazardar        | Head of Environmental Bureau                                 |
| A total of 5 herders | Informal interviews at the Mandalgovi agricultural fair      |

**11 September 2001 - Dalanzadgobi (Omnogovi Aimag centre)**

Workshop participants:

+ further detailed interviews with:

|               |                       |
|---------------|-----------------------|
| Mr Otgonbayar | Environmental Officer |
| Ms Zoya       | PAPO secretary        |

**11 September 2001 - Omnogovi Aimag**

|          |             |
|----------|-------------|
| Governor | Khangor sum |
|----------|-------------|

**12 September 2001 - Arvaykheer, (Ovorkhangay Aimag centre)**

|                         |              |
|-------------------------|--------------|
| Individual herder + son | Bayangol sum |
|-------------------------|--------------|

Joint meeting with:

|               |   |
|---------------|---|
| Mr Shoovdor   | Chairman of the governor's office   |
| Mr Tserenyam  | Chairman of the Environment Agency  |
| Ms Banzar     | Officer of the Health Agency  |
| Mr Tserenyam  | Chairman of the Environment Agency  |
| Ms Odonchimeg | Officer for social development policy                                     |
| Ms Enkhbuya   | Officer of industrial and environmental division of the governor's office |

+ further detailed interviews with:

|                  |   |
|------------------|---|
| Mr Tserenyam and | Environment agency chairman and Environmental officer                                   |
| Ms Enkhbuya      |   |
| Ms Banzar and    | Head of health agency and Officer for social development policy                         |
| Ms Odonchimeg    |   |
| <br>             |   |
| Dr David Dyer    | Program Director for Agricultural Development, Gobi Regional Economic Growth Initiative |

*13-14 September 2001 - Ovorkhangay Aimag*

|                           |                                      |
|---------------------------|--------------------------------------|
|                           | Governor, Khujirt sum                |
|                           | Agricultural inspector, Khujirt sum  |
|                           | Environmental inspector, Khujirt sum |
| <br>                      |                                      |
| Ms Enktua                 | Ranger, Batulzii sum                 |
| Herder Khot Ail           | Batulzii sum                         |
| Felt-makers by river      |                                      |
| Herder Khot Ail near road | Lun sum (Tov Aimag)                  |

**Further Meetings in Ulaan Baatar 17-21 September**

*19 September 2001*

Presentation of Aide Memoire at MoFA:

|                        |   |
|------------------------|---|
| Mr Dawadorj            | MoFA                                      |
| Mr Puntsagseren        | MoFA                                      |
| Mr Bayesgalan          | MNE                                       |
| Mr Merkdaddak          | MoFA                                      |
| Mr Dalantainyam Dagvaa | MoFA                                      |
| Mr Baas                | FAO                                       |
| Mr Erdenbattur         | Mongolian State University of Agriculture |
| Mr Sambalhundev        | MoFA                                      |

|                 |                                  |
|-----------------|----------------------------------|
| Mr Khurenbaatar | Tacis National Coordinating Unit |
|-----------------|----------------------------------|

*20 September 2001*

FAO team wrap-up including PAPO, Ministry of Finance and Economy, Ministry of Education, MNE, MoFA, Ministry of Social Protection, FAO team

*21 September 2001*

|                               |   |
|-------------------------------|---|
| Mr Banzrucht and Dr Banzrucht | State secretary, MNE and D-G of EPA                             |
| Ms Oyundar                    | Director, International Cooperation Department, MNE             |
| Mr Puntsagseren               | MoFA  |
| Andrew Laurie                 | Eastern Steppe Biodiversity Project, UNDP-GEF                   |
| Gordon Johnson                | Team Leader, Environment and Natural Resources Management, UNDP |
| Ms Onon                       | PAPO  |

## ***Annex 8 - Summary of Findings and Recommendations of the Dedicated Social Assessment, December 2001***

### ***Role of the Social Assessment in Project Design***

#### *Overall purpose and scope*

The overall question the social assessment sought to answer was how the proposed project activities will affect the intended beneficiaries and other key stakeholders. Several topics were pursued to that end: (i) the compatibility of the project design with the livelihood strategies of the socio-economic groups targeted; (ii) differences in livelihood strategies of richer and poorer households within the project area and the risk of inequalities being worsened by the project or benefits being captured disproportionately by elites; (iii) potentials for the proposed project to foster the participation of the poorer and more vulnerable members of society; (iv) the potential role of local institutions in the same process; and (v) the possible impact of the project on ethnic minority groups within the project area.

The assessment focused on the core *aimags* where the project is to be implemented in its first phase. Based on this analysis, recommendations are made for ensuring:

- ⇒ that the project is designed to avoid adverse impacts and minimize social costs to local society;
- ⇒ that poorer and more vulnerable members of society actually benefit from activities directed towards them, that they are supportive of the final project design, and actively involved in its implementation.

The Social Assessment has been conducted in keeping with World Bank recommendations for Social Assessment as described in GP10.05.

#### ***Methodology***

The following methods were used to gather information for the social assessment:

- A review of literature and socio-economic studies of the project population residing within or near the proposed project area. Sources consulted are listed in the bibliography at the end of the report;
- A review of government statistics;
- In-depth interviews with government representatives, NGOs and representatives of research institutions;
- In-depth household interviews and group discussions. A total of 38 household interviews were conducted.

Short field visits were made to five of the eight pilot *aimags*. Two *sums* in Tov were visited in short day trips from the capital, and a two week field trip was conducted to Uvs, Bayan Olgii, Bayankhongor and Ovorkhangai *aimags*.

Interviews were conducted in a total of 14 *bags* in 9 *sums*. The *sums* visited are listed below.

**Table 1. Sums visited**

| aimag        | sum          | distance to aimag centre, km | bags visited          | ecological zone               |
|--------------|--------------|------------------------------|-----------------------|-------------------------------|
| Tov          | Zuunmod town | at centre                    | Zundelger             | steppe                        |
| Tov          | Erdene       | 80                           | Bag 5                 | steppe                        |
| Uvs          | Zuunkhangai  | 340                          | Khairkhan, Bayangol   | mountain steppe               |
| Uvs          | Ulaangom     | at centre                    | Bags 5, 7, 9          | urban and open steppe         |
| Uvs          | Omnogobi     | 180                          | Namir, Bayangol       | gobi and mountain forest      |
| Bayan Olgii  | Olgii        | at centre                    | Bag 8                 | urban and mountain steppe     |
| Bayan Olgii  | Ulaankhus    | 45                           | Bags 8, 5             | mountain steppe               |
| Bayankhongor | Bayankhongor | at centre                    | no bag level visits   | urban                         |
| Ovorkhangai  | Nariin Teel  | 120 approx                   | Shargiin, Undurkhumug | gobi, steppe, mountain forest |

As may be appreciated, the TOR for the social assessment required an extensive range of topics to be studied in a short period of time, while budgetary, time and travel constraints prevented extended field visits from being conducted. A decision was made to prioritise potentially vulnerable ethnic minority groups in the selection of *aimags* to be visited. This resulted in Uvs and Bayan Olgii being selected as the main field sites. While these are both appropriate sites for studying ethnic diversity, they are two of the most remote of the core *aimag* and thus do not present some of the problems typical of the more central *aimags* (high concentrations of people and livestock, high levels of conflict over pasture use).

Because of these constraints, the social assessment aims to provide an overview of the main social issues to be addressed in the design and implementation of the SLP. Areas which warrant more in-depth research as part of the on-going process of social assessment are also identified in the recommendations at the end of the report.

Early drafts of the main conclusions and recommendations were discussed in detail with the social assessment team (CSD staff) and LSPO officers prior to the consultant's departure from Mongolia.

The full social assessment report provides details of the findings and recommendations, and annexes. Summary of Key Findings and Recommendations. Summaries of the findings and recommendations are given below.

| <b>Targeting</b>   |   |
|--|---|
| <b>KEY FINDINGS</b>  | <b>RECOMMENDATIONS</b>  |
| <ul style="list-style-type: none"> <li>• Actual project benefits are expected to reach beyond the stated target groups.</li> <li>• 'Better-off' and 'middle – vulnerable' households have a role to play in building sustainable livelihoods, but do not have access to sufficient credit to develop enterprises that would create jobs.</li> <li>• Many of the very poorest households continue to have welfarist expectations of government; previous projects have very publicly targeted 'poor households' but, since they have not provided handouts, PAPO officers have had to face demands for immediate assistance from the very poorest, that they are not in a position to fulfill.</li> </ul> | <p>⇒ Broaden the stated target groups for SLP so they include all groups implicitly included in project documents. Target groups would therefore include <u>herding and settled communities in rural and peri-urban areas, with a focus on the able-bodied poor and low-income households vulnerable to impoverishment and economic shock.</u></p> <p>⇒ Ensure that public information campaigns transmit clearly, throughout the life of the project, the message that the SLP is intended to improve the livelihoods of poorer households, but is not a programme of government handouts.</p> |

| <b>Community Participation</b>  |   |
|---|---|
| <b>KEY FINDINGS</b>   | <b>RECOMMENDATIONS</b>  |
| <ul style="list-style-type: none"> <li>• Local government officials and local people are often unsure what is meant by “community participation”, and local authorities sometimes emphasise beneficiary obligations (e.g. local contributions) over beneficiary involvement in decision-making.</li> <li>• Local conditions advocate against herding families gaining ready access to information about local government activities.</li> <li>• The demands of nomadic life mean that members of herding households may find it impractical to regularly attend project-related meetings or to take on lengthy obligations related to project activities.</li> <li>• Local people expressed their views and opinions very openly in social assessment fieldwork interviews.</li> <li>• A lack of clarity over levels of local contribution (and suggested contributions which are relatively high for poor households) risks putting an additional tax burden on beneficiaries rather than fostering their active participation in the project.</li> <li>• Procedures that are kept as straightforward and as clear as possible are most likely to ensure the informed participation of beneficiaries.</li> </ul> | <p>⇒ Simplify the steps for implementing project activities at local levels (especially as regards the LIF – see recommendations below): ensure, on the one hand, that elements essential to local people’s informed participation are clearly defined and not subject to misinterpretation, but on the other hand, that steps in PIP related to participation are not over-designed.</p> <p>⇒ Include steps in PIP for public meetings to take place, but leave it up to local people in each situation to determine how many meetings are necessary and practicable, and how these public forums are to take place.</p> <p>⇒ Clarify and simplify procedures for beneficiary contributions: do away with expressing local contributions as a percentage of total investment: instead, employ agreements negotiated locally between benefiting parties and the local authorities, about the types of labour and locally available materials beneficiaries are able to contribute.</p> <p>⇒ Establish uniform procedures for developing maintenance agreements between beneficiaries and local authorities.</p> <p>⇒ Ensure information is posted publicly (at <i>sum</i> government offices) informing people of project information for all project activities (not just LIF), but keep these simple and low cost (a sign informing the public of the implementation of the activity under SLP; a breakdown of monies available for and spent on each activity; completion dates; responsible parties). In Kazakh speaking <i>sums</i> these posters should be posted in Kazakh language.</p> <p>⇒ Include the arrangements recommended above as basic content of the radio information campaign.</p> |

| <i>Pastoral risk management</i>   |  |
|---|--|
| KEY FINDINGS  | RECOMMENDATIONS  |
| <ul style="list-style-type: none"> <li>• Evidence from existing herders' groups/NGOs show that there are obstacles to incorporating poorer households (especially those with few skills to offer or who are viewed by others as lacking initiative) into these groups.</li> <li>• While some poorer herders may need a simple introduction and encouragement to be accepted into a herders' association, other poor households have members with deep-rooted problems (alcoholism, disability) preventing them from gaining the confidence of others and being involved in community initiatives.</li> <li>• Better-off herders make use of a wider variety of pastoral resources and can therefore be expected to draw more benefits from the PRM activities than poorer herders.</li> <li>• Herders' associations can only be formed on the initiative of herders themselves; local governments have a peripheral rather than central role to play in the process.</li> <li>• The organisation of herders into their own associations can be expected to form more slowly than the pace of overall project implementation.</li> </ul> | <ul style="list-style-type: none"> <li>⇒ Seek finance for social work training to enable a member of <i>sum</i> local government (most likely in the social welfare and service centre) to act as a community social worker to assist the poor in gaining access to existing herders' associations, and ensuring they benefit from other PRM activities.</li> <li>⇒ Develop a programme of incentives to encourage herders to work together in larger units.</li> <li>⇒ Make publicity about herders' associations (the advantages of association, and the experiences of successfully operating associations aimed at spreading interest) one of the main topics covered in public radio broadcasts.</li> </ul> |

| <i>Pastoral risk management (cont.)</i>   |  |
|---|--|
| KEY FINDINGS  | RECOMMENDATIONS  |
| <ul style="list-style-type: none"> <li>• Possession certificates have been readily issued for winter campsites and shelters but authorities are more hesitant to issue land possession certificates for pasture land (Tov appears to be the only core <i>aimag</i> where possession certificates have been issued to groups or individuals for pasture land).</li> <li>• Existing agreements on land use drawn up by local authorities are subject to annual changes, depending on available pasture in a given year.</li> <li>• Herders' traditional systems of pasture use rely on the shared distribution of risk; it is understood that herders are customarily entitled to infringe on pastures used by others in times of drought or <i>dzud</i> and for this reason herders tend to be opposed to the allocation of pastures for individual use.</li> <li>• Both PAPO and MOFA representatives interviewed for the social assessment stated that they do not want to use SLP funds to finance the issuance of land possession certificates, because of sensitivities surrounding the issue.</li> </ul> | <ul style="list-style-type: none"> <li>⇒ Fully tap the potential for improving pasture management through strengthening systems of negotiation between local authorities and local people.</li> <li>⇒ Avoid becoming involved in the issuance of possession certificates for pasture to either individuals or groups.</li> </ul> |

| <i>Pastoral risk management (cont.)</i>   |  |
|---|--|
| KEY FINDINGS  | RECOMMENDATIONS  |
| <ul style="list-style-type: none"> <li>• <i>Sums</i> that border Tuva in Uvs <i>aimag</i> are facing a serious problem of cross border raids and herders who remain in these <i>sums</i> are among the poorest in the province. They cannot fully benefit from SLP activities until the security situation is improved.</li> <li>• It is doubtful that self-help groups will be able to deal adequately with armed gangs and arming citizens to defend themselves against incursions across international borders is likely to only add to the situation of lawlessness.</li> <li>• Security is particularly important for these groups in times of <i>dzud</i>; herders in these areas have suffered losses over the last two winters that could have been avoided had available pasture near border areas been secure from livestock rustlers.</li> </ul> | <p>⇒ Seek support from security forces to resolve the security problems in areas along the northern border, and to defend the livelihoods of herders in these areas not only in times of <i>dzud</i>, but throughout the year.</p> |
| <ul style="list-style-type: none"> <li>• Some herders who lost all livestock moved to settled areas but claim they have no skills but herding, and would like to restock to be able to herd again. Currently all households in <i>bags</i> at <i>sum</i> centres are ineligible for restocking activities.</li> </ul>   | <p>⇒ Include households in <i>sum</i> centres in restocking activities in special cases. Those herders who have moved to <i>sum</i> centres but wish to return to herding should be eligible for restocking.</p>                   |
| <ul style="list-style-type: none"> <li>• Most people keeping livestock in or near to <i>sum</i> centres balance jobs or other income generating activities with herding and have no desire to increase their herds. However, they too need to be involved for rational negotiations on pasture management to take place –</li> </ul>  | <p>⇒ Include <i>sum</i> centre <i>bags</i> in grazing management activities.</p>   |

|                              |  |
|------------------------------|--|
| currently they are excluded. |  |
|------------------------------|--|

| <b>Local Initiative Fund</b>  |   |
|---|---|
| <b>KEY FINDINGS</b>   | <b>RECOMMENDATIONS</b>  |
| <ul style="list-style-type: none"> <li>• There is a widespread need for further financing for basic public infrastructure, both for minor repairs and major rehabilitation/reconstruction.</li> <li>• <i>Sum</i> government officials view decentralization of responsibility for social services and infrastructure to their level (and more local levels) as only one of a number of pressing priorities, including sufficient funding to rebuild structures in serious states of disrepair (rather than only having budgets for maintenance).</li> <li>• Currently the only <i>sum</i> governments involved in contracting and procurement are those located in <i>aimag</i> centres, due to the difficulty for rural <i>sums</i> of coordinating this over long distances.</li> <li>• To date, no directives have been put in place by GoM to decentralise powers to more local levels; debate continues in government over the issue.</li> <li>• Several types of local initiative already exist: these are small-scale projects initiated by <i>sum</i> governments and local people, usually to assist poorer people in <i>sum</i> centres to generate some kind of income; there is a risk that these types of activities, though of great help to poorer households, would not be eligible for LIF funding as they might be interpreted as falling in the category of 'income generating projects for private households'.</li> <li>• There is a lack of clarity in the LIF as to how local people's choices would be 'harmonised' with local development plans if higher level authorities do not have the right to refuse local level proposals.</li> <li>• The LIF is a very complex and ambitious component, taken both the very basic public infrastructure needs in the country, and the current very preliminary discussions about decentralisation in Mongolia.</li> </ul> | <ul style="list-style-type: none"> <li>⇒ Retain the LDF to finance public infrastructure and social services, managed from <i>aimag</i> level, and <i>sum</i> level where it is practical to have the <i>sum</i> involved in contracting and procurement, while emphasising the increased involvement of local people in decision-making processes.</li> <li>⇒ Use the LIF to institute local initiatives (i.e. those not connected with the work of line ministries) managed by <i>sum</i> level.</li> <li>⇒ Hold off on <i>bag</i> managed projects, which are too ambitious at this stage but may become feasible later on; allow these activities to be managed by the <i>sum</i> and focus at <i>bag</i> level on strengthening the systems of public information dissemination and public forums and meetings to include people in the decision-making process.</li> <li>⇒ Realistically, <i>sum</i> PACs (or <i>aimag</i> for some LDF projects) will have to make the final decisions on project selection, and this should be acknowledged openly; there is a risk otherwise of creating tensions and stand-offs if local proposals cannot be refused but conflict with existing development plans.</li> </ul> |

| <i>Local Initiative Fund (cont.)</i>  |   |
|---|---|
| KEY FINDINGS  | RECOMMENDATIONS   |
| <ul style="list-style-type: none"> <li>• Public meetings already take place at <i>bag</i> level; they bring together household heads to discuss and agree on a number of different issues; it appears that people are comfortable to speak freely and express their opinions at these meetings.</li> <li>• Very poor households often experience social problems and it may be very difficult for them to express their views at public meetings.</li> <li>• A network of women's and youth federations is already in place and could play a key role in ensuring local views are incorporated into plans for public spending both at higher levels and at local levels.</li> </ul> | <ul style="list-style-type: none"> <li>⇒ Reduce the number of meetings required by local people to implement LIF: allow each <i>bag</i> to decide how many meetings it needs to hold to get the work done.</li> <li>⇒ Simplify the organisational structure of LIF at local level – it is adequate to ensure that the <i>bag</i> population attends public meetings related to LIF and LDF at which they can volunteer their involvement in the planned project; there is no need to establish a complex series of new project-related “community groups” at local level. Especially in rural <i>bags</i>, the beneficiaries should not be overburdened by administrative responsibilities; these should be carried out by administrators. The beneficiaries' role in LIF and LDF is to identify proposed projects at public <i>bag</i> meetings; their <i>bag</i> leaders then draw up proposals which they submit to the <i>sum</i> PAC. Once the selected projects are agreed on, a public meeting is held in the <i>bag</i> again to agree upon local involvement in the project.</li> <li>⇒ Besides proposals coming from <i>bag</i> level meetings, women's, youth or other interest groups (located at <i>sum</i> level) should be entitled to submit proposals for project financing to the <i>sum</i> PAC.</li> <li>⇒ Promote broader public participation in patterns of public spending for social services by strengthening the ability of local non-government organisations present at <i>aimag</i> level to lobby for the interests of the groups they represent (i.e. to lobby higher levels of government with their suggestions for improving the overall structure of social services to meet local needs).</li> </ul> |

| KEY FINDINGS  | RECOMMENDATIONS  |
|---|--|
| <b>Microfinance</b>   |  |
| <ul style="list-style-type: none"> <li>• Many better-off and middle-income households aspire to creating or expanding small-scale enterprises that would create jobs for poorer households, but find it very difficult to obtain credit to do so.</li> <li>• The past experience with microfinance has created limited views about what microfinance projects can achieve.</li> </ul>   | <p>⇒ Confirm on the advice of microfinance professionals whether it is possible to develop a microfinance system which i) will lend small amounts to the poor at reasonable rates of interest; while ii) making available more flexible loan sizes that will also allow better-off households to use the services.</p>   |
| <b>Project Management</b>   |  |
| <ul style="list-style-type: none"> <li>• PAC secretaries at <i>aimag</i> level expressed concerns that their workloads for the NPAP project had been very heavy, that budgets for their operational costs were not sufficient to allow them to carry out their work properly and responsibilities were not clear cut for some activities.</li> <li>• Plans to include MoFA in implementation of PRM component are welcomed by PAC secretaries and they anticipate this will ease their workloads and bring in the needed professional expertise for this component.</li> <li>• A high turnover of staff within government bodies following elections affects the staff of local governments, <i>khurals</i>, and Poverty Alleviation Councils and means that these representatives have had little first hand experience of incorporating the 'lessons learned' from the previous NPAP project into the SLP.</li> </ul> | <p>⇒ Monitor management issues during project implementation for early identification of any problems arising related to division of project responsibilities, operational budgets or workloads of key project staff.</p> <p>⇒ Create project procedures that are straightforward and closely in line with existing procedures in Mongolia, to ensure administrative procedures are quickly absorbed by staff taking up new posts.</p> |

| <i>Training</i>   |   |
|---|---|
| KEY FINDINGS  | RECOMMENDED TRAINING CONTENT  |
| <p>Suggested areas for training follow on from recommendations and main findings mentioned above.</p> | <p><b><i>Herders' associations</i></b></p> <ul style="list-style-type: none"> <li>⇒ seminars providing information on the relative advantages of working in association, and being formally registered, as either co-operatives or NGOs.</li> <li>⇒ training/seminars in business and financial management and seminars in marketing that would directly link them to market information and sources of supply/ buyers of livestock products.</li> </ul> <p><b><i>Community Social worker/ community mobiliser training</i></b></p> <ul style="list-style-type: none"> <li>⇒ Professional social work training, with attention to gender issues and outreach to poor households.</li> </ul> <p><b><i>Bag leaders</i></b></p> <ul style="list-style-type: none"> <li>⇒ Training in group meeting and leadership skills, group organisation, proposal formation and writing, community participation, including gender issues and outreach to poor households.</li> </ul> |

| KEY FINDINGS  | RECOMMENDATIONS   |
|---|---|
| <b><i>Ethnic Minority Issues</i></b>  |   |
| <ul style="list-style-type: none"> <li>• Ethnic differences do not create conditions in which any ethnic group is disadvantaged in the development process. Kazakh language differences have been accommodated in project recommendations.</li> <li>• As the project expands beyond Phase One, the description of vulnerable ethnic groups as defined by World Bank Operational Directive 4.20 may apply to one small group in one possible area of expansion.</li> </ul> | <ul style="list-style-type: none"> <li>⇒ The preparation of a separate Indigenous People's Development Plan is unwarranted for Phase One of the SLP.</li> <li>⇒ Another assessment should be made of ethnic groups in the area of expansion leading up to Phase Two of the SLP.</li> </ul>  |
| <b><i>Involuntary Resettlement</i></b>  |   |
| <ul style="list-style-type: none"> <li>• Construction of small-scale infrastructure under the PRM and LIF components is very unlikely to cause resettlement of people or the acquisition of personal assets.</li> <li>• The potential threat of herders being pushed out of unused inter-<i>aimag</i> reserves once these are re-established appears to be unfounded.</li> </ul>  | <ul style="list-style-type: none"> <li>⇒ <i>World Bank Operational Policy on Involuntary Resettlement (OP 4.12) is not invoked in the case of the Mongolia Sustainable Livelihoods Project.</i></li> <li>⇒ <i>If the acquisition of productive assets remains a concern for the Bank it is suggested that a proviso be added to both the PRM and LIF components: that no project which involves the acquisition of personal assets should be carried out under the two components.</i></li> </ul> |

| <b><i>Monitoring and Evaluation</i></b>   |  |
|---|--|
| <b>KEY FINDINGS</b>   | <b>RECOMMENDATIONS</b>   |
| <ul style="list-style-type: none"> <li>• Recommendations for Monitoring and Evaluation are based on the experience of implementing manageable participatory monitoring systems for large scale projects elsewhere (not in Mongolia).</li> </ul>           | <ul style="list-style-type: none"> <li>⇒ Distinguish between what higher administrative levels need to monitor and what local people need/want to monitor about project activities.</li> <li>⇒ Establish a framework for local level monitoring systems that is meaningful to local people. This may mean allowing each <i>bag</i> to determine indicators to be used locally. Some <i>bags</i> may choose to monitor a whole series of indicators of community development; others may only wish to know how the money was spent.</li> <li>⇒ Create a monitoring framework for higher administrative levels that is manageable. Higher levels need to measure the extent to which local people participated in project activities and their views of project outcomes. However, this does not need to be gathered in every <i>bag</i> in the core <i>aimags</i>. Many projects that attempt this end up overloaded with information that is never used. Rather, data may be gathered from a representative sample of core <i>aimags</i>. This makes for a more in-depth evaluation which can include qualitative questions as part of the evaluation and allows the views of poorer households to be more meaningfully included.</li> </ul> |
| <b>Continuing the process of social assessment</b>  |  |
| <ul style="list-style-type: none"> <li>○ Requirements of the initial social assessment exercise were wide-ranging; it is anticipated that more detailed information on selected focused topics will be required as the project is implemented.</li> </ul> | <ul style="list-style-type: none"> <li>⇒ Integrate further assessment exercises into the system of monitoring and evaluation; and;</li> <li>⇒ Design focussed topical studies to answer questions of immediate relevance to the project as they arise.</li> </ul>  |

## ANNEX 9 - BIOLOGICAL DIVERSITY IN MONGOLIA

**Table 1. Species diversity**

|                  |  |
|------------------|--|
| Flowering plants | Over 3000 species, including 229 endemic species   |
| Invertebrates    | Numbers of invertebrates are poorly known, but it is estimated that there are 12,000 insect species.   |
| Mammals          | 136 species, including 14 insectivores (mainly shrews), 12 species of bat, 4 species of pika, 3 of hares, 65 species of rodent, 22 species of carnivores (including canids, felids, mustelids and brown bear) and 14 ungulate species.   |
| Birds            | 426 species, including 108 passage migrants, 74 resident species, 231 summer visitors, and 13 winter visitors. The bird fauna is particularly rich in waterfowl and shorebirds.  |
| Reptiles         | 22 species, including agamids, gekkonids, lacertids and snakes. Of particular note are the tatar sand boa ( <i>Eryx tataricus</i> ) and the Mongolian agama ( <i>Stellio stoliczkanus</i> ).   |
| Amphibians       | One species of salamander and eight species of frogs and toads.  |
| Fish             | There are very clear differences in fish fauna between the three main drainage basins. The inland drainage basin has five species, the Arctic Ocean basin has 26 species, and the Pacific Ocean basin supports about 40 species. There are four endemic salt-water species in the inland drainage basin (where only five fish species occur in total). |

**Table 2 Biogeographical regions**

| Region / type | Description  |
|---------------|--|
| Desert        | Vegetation consists of gobi feathergrasses ( <i>Stipa</i> spp.), black sympegma ( <i>Sympegma regelii</i> ), and glasswort ( <i>Anabasis brevifolia</i> ). Oases of poplar ( <i>Populus diversifolia</i> ) and <i>Elaeagnus moorcroftii</i> occur. Other typical plants include saxaul ( <i>Haloxylon ammodendron</i> ). Mammals include the bactrian camel ( <i>Camelus ferus</i> ), the gobi bear ( <i>U. arctos</i> ), the asiatic wild ass ( <i>Equus hemionus</i> ).  |
| Desert-steppe | Vegetation dominated by low grasses and shrubs, such as <i>Cleistogenes songorica</i> and the Taana onion ( <i>Allium polyrrhizum</i> ). Many of central Asia's endemic plants occur in this zone. Mammals include the wild ass, the goitered gazelle ( <i>Gazella subgutturosa</i> ), the long-eared hedgehog ( <i>Erinaceous dauuricus</i> ).  |
| Steppe        | Flats plains and rolling hills vegetated by feather grass and shrubs. Typical grass species are <i>Stipa</i> spp. and <i>Agropyron cristatum</i> and unpalatable shrubs, <i>Cartagana</i> spp. and <i>Artemisia</i> spp. are abundant. Mammals include saiga ( <i>Saiga tatarica</i> ), Mongolian gazelle ( <i>Procapra gutturosa</i> ), marmots ( <i>Marmota sibirica</i> ) and Brandt's vole ( <i>Microtis brandtii</i> ). Enormous herds of migrating gazelle provide a significant spectacle.                                |
| Forest-steppe | A combination of steppe flora and Siberian taiga forest, including species of pine ( <i>Pinus sylvestris</i> ), aspen ( <i>Populus tremula</i> ) and eidelweiss ( <i>Leontopodium ochroleucum</i> ). Mammals include elk ( <i>Cervus elaphus</i> ), wolf ( <i>Canis lupus</i> ), marmots ( <i>Marmota</i> spp.), black kites ( <i>Milvus migrans</i> ), buzzards ( <i>Buteo</i> spp.) and grouse ( <i>Lyrurus tetrix</i> ).  |
| Taiga         | The southern edge of the Siberian taiga, the largest coniferous forest system in the world. It is relatively species-rich. The forests consist mainly of larch ( <i>Larix sibirica</i> ) and siberian pine. A total of 62 mammal and 277 bird species have been recorded in this region, including muck deer ( <i>Moschus moschiferus</i> ), reindeer ( <i>Rangifer tarandus</i> ), sable ( <i>Martes sibirica</i> ), snow leopard ( <i>Uncia uncia</i> ), moose ( <i>Alces alces</i> ), and brown bear ( <i>Ursus arctos</i> ). |
| Alpine        | Low shrubs and herbs, with sedges, mosses and grasses. Flora includes birch ( <i>Betula rotundifolia</i> ), alpine meadow-rue ( <i>Thalictrum alpinum</i> ), and mountain saxifrage ( <i>Saxifraga oppositifolia</i> ). Mammals include argali sheep ( <i>Ovis ammon</i> ) and Siberian ibex ( <i>Capra sibirica</i> ).  |
| Wetlands      | Mongolia's lakes, rivers, and wetlands have fish and other species of conservation value. Wetlands include salt marshes, salt pans, freshwater marshes and river deltas. There are a number of endemic fish species due to historical patterns of lake formation and reduction.  |

Source: Government of Mongolia 1996 *Biodiversity Conservation Action Plan for Mongolia*.

## ANNEX 10 - ABSTRACTS OF JOURNAL ARTICLES ON SALMONELLA-BASED PESTICIDES

The following is an output of a search on databases of international scientific journals on Salmonella-based pesticides, from CAB International databases. A total of thirteen records were found, as follows. A copy of one of these, from *The Lancet*, is also included here.

Search of CAB ABSTRACTS 1972-July 2001 for Doug Smith, ERM  
Salmonella-based rodenticides  
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Record 1 of 13 - CAB Abstracts 1972-1975

TI: [Susceptibility of piglets to Isachenko's bacterium (a variety of *Salmonella enteritidis* used in rodent control)].  
OT: *Izuchenie vospriimchivosti porosyat k bakteriyam Isachenko.*  
AU: Trakhanov-DF; Kadirov-AF  
SO: *Problemy-Veterinarnoi-Sanitarii.* 1972, 42: 248-253.  
LA: Russian  
LS: English  
AB: The authors point out that while a good deal is known about *S. enteritidis* Isachenko used for rodent control in pig houses, little is known at present of the possible pathogenicity for pigs. Piglets 4-6 weeks old were fed heat-killed or live salmonellae, and placed in contact with healthy piglets. Heat-killed salmonellae were non-toxic. Large doses ( $3 \times 10^{10}$ ) of live salmonellae, and contact infection, produced no clinical symptoms. The authors are of the opinion that (1) the administration of salmonellae probably does not produce a true carrier state in piglets even if the organism can be recovered from the faeces and organs; (2) even the administration of large doses does not mean that the animals will necessarily excrete for a long period; (3) however, since the piglets did excrete salmonellae for a certain length of time, this may be of animal health importance.  
PT: Journal-article  
AN: 732205886

Record 2 of 13 - CAB Abstracts 1972-1975

TI: [Taxonomic position of bacteria used as rodenticides].  
AU: Popov-NA  
SO: *Problemy-Veterinarnoi-Sanitarii.* 1972, 43: 42-49.  
LA: Russian  
LS: English  
PT: Journal-article  
AN: 732219118

Record 3 of 13 - CAB Abstracts 1976-1978

TI: Susceptibility of lambs to Isachenko's bacillus (strain 5170 of *Salmonella enteritidis*, used for rodent control).  
AU: Trakhanov-DF; Kadirov-AF  
SO: *Problemy-Veterinarnoi-Sanitarii.* 1977, 57: 113-116; 9 ref.  
LA: Russian  
PT: Journal-article  
AN: 782224561

Record 4 of 13 - CAB Abstracts 1976-1978

TI: Survival of *Salmonella isachenko* in foods.  
AU: Omel'-yanets-TG  
SO: *Voprosy-Pitaniya.* 1976, No. 5, 65-67; 5 ref.  
LA: Russian  
LS: English  
AB: In connection with the use of *S. isachenko* (serotype D) in rodenticides (to combat harvest pests), the possibility of human infection via foods such as meat, bread and milk was studied. Pasteurized milk was inoculated with  $1 \times 10^5$  organisms/ml, and stored at 0-4 deg or 18-22 deg C. The milk was then diluted with a physiological solution and cultured on meat-peptone or bismuth sulphite-agar. The milk was sampled and analysed daily, using specific agglutinating serum, lysozyme and Stern's broth. The numbers of organisms were then plotted against storage time. *S. isachenko* survived for 5 days at 0-4 deg C and for 9 days at 18-22 deg C. Some practical consequences of the use of this type of biocide are discussed.  
PT: Journal-article  
AN: 760430673

Record 5 of 13 - CAB Abstracts 1976-1978

TI: "Baktorodentsid" for the control of rodents (preparation of Salmonella enteritidis).  
AU: Rybin-AP  
SO: Veterinariya,-Moscow,-USSR. 1977, No. 3, 52-53.  
LA: Russian  
PT: Journal-article  
AN: 772294944

Record 6 of 13 - CAB Abstracts 1976-1978

TI: Baktoratindan, an effective rodenticide (composed of diphenadione and Salmonella bacteria).  
OT: Baktoratindan, effektivnoe sredstvo protiv myshevidnykh gryzunov.  
AU: Ostashev-SN  
SO: Veterinariya,-Moscow. 1976, No. 2, 38-39.  
LA: Russian  
AB: "Baktoratindan" was prepared in 10-litre aluminium cans of wheat or oats. The grains were washed with water 3 to 4 times beforehand. Then 5 kg grains were loaded into the cans, and 1.5% of diphenadione, 50 ml of 10% caustic soda were added and thoroughly mixed. The mixture was autoclaved for 1 hour at 2 atmospheres twice in 2 days. After the second autoclaving 2.5 litres of 2-day culture of *S. enteritidis* were added. The bacteria were grown for 48 hours at 37-38 deg C. The preparation contained 8 to 12 milliard cells per g of grain. Three experiments were carried out to test the efficacy of the preparation, which killed rats within 10 to 14 days.  
PT: Journal-article  
AN: 762274622

Record 7 of 13 - CAB Abstracts 1984-1986

TI: Selection and storage of Isachenko's bacterium [*Salmonella enteritidis*] for the production of the rodenticide Baktorodantsid.  
AU: Kuznetsova-OS; Osledkin-Yu-S  
SO: Veterinariya,-Moscow,-USSR. 1985, No.1, 68-70.  
LA: Russian  
PT: Journal-article  
AN: 852257081

Record 8 of 13 - CAB Abstracts 1990-1991

TI: Influence of environmental factors on a Salmonella enteritidis-warfarin preparation for the biological control of harmful rodents.  
OT: Influencia de los factores ambientales sobre un biopreparado microbiologico para la lucha contra los roedores daninos.  
AU: Espino-R; Montero-G; Bornote-J; Diaz-M  
SO: Revista-Cubana-de-Ciencias-Veterinarias. 1989, 20: 4, 267-278; 9 ref.  
LA: Spanish  
LS: English, French, Russian  
PT: Journal-article  
AN: 912225604

Record 9 of 13 - CAB Abstracts 1992

TI: The use of microbial preparations in the USSR.  
AU: Khloptseva-RI  
SO: Biocontrol-News-and-Information. 1992, 13: 2, 27N-32N; 13 ref.  
LA: English  
AB: The most widely used microbial preparations against insect pests in the territories of the former USSR are based on *Bacillus thuringiensis*. The total area of vegetables, fruit crops and cotton fields protected by bacterial preparations amounts to over 2 million ha. Fungal and viral preparations are used on a small scale. Over 5 million ha are protected from rodent pests by Bactorodencide, a preparation based on *Salmonella enteritidis*.  
PT: Journal-article  
AN: 921162640

Record 10 of 13 - CAB Abstracts 1992

TI: Bacteriological warfare against rats and mice.  
OT: Bakteriologisk krigforing mot rattor och moss.  
AU: Andersson-SA; Nilsson-PO  
SO: Svensk-Veterinartidning. 1991, 43: 4, 173-176.  
LA: Swedish  
AB: The use of cultures of *Salmonella* spp. earlier this century to control rats and mice is described. The same species (*S. typhimurium*, *S. enteritidis* and *S. dublin*) are seen in disease outbreaks in animals and man at the present time, and it is suggested that their use as rodenticides may have introduced them to the ecosystem.  
PT: Journal-article  
AN: 922274357

Record 11 of 13 - CAB Abstracts 1996-1998/07

TI: Public health risk from Salmonella-based rodenticides.

AU: Friedman-CR; Malcolm-G; Rigau-Perez-JG; Arambulo-P III; Tauxe-RV

SO: Lancet-British-edition. 1996, 347: 9016, 1705-1706; 5 ref.

LA: English

AB: The authors draw attention to a rodenticide, "salmocoumarin" (Biorat), which is produced in Cuba and sold and distributed in developing countries world wide for the control of rats and mice, particularly in agricultural settings. The product contains S. enteritidis and warfarin. Because of doubts about the efficacy of such a product and concerns about the employment of a human pathogen in a rodenticide, the use of this product is questioned.

PT: Correspondence

AN: 970504430

Record 12 of 13 - CAB Abstracts 1996-1998/07

TI: Efficacy of the rodenticide Salmocoumarin in cattle farms and urban targets.

OT: Efectividad del rodenticida Salmocoumarin en objetivos pecuarios y urbano.

AU: Villafana-F; Montero-G; Diaz-M; Bornote-J

SO: Revista-Cubana-de-Medicina-Tropical. 1995, 47: 2, 83-87; 13 ref.

LA: Spanish

LS: English

AB: Salmocoumarin is a rodenticide containing Salmonella enteritidis [which is a human pathogen, and warfarin]. The authors conducted trials of its efficacy against rodents in 2 cattle farms, a cattle feedlot and on urban waste ground in Cuba, and showed effects on rodent activity, particularly where rodent populations were high.

PT: Journal-article

AN: 970504788

Record 13 of 13 - CAB Abstracts 1998/08-2000/07

TI: Protecting crop yield from 'mice invasion'.

AU: Teniav-AV; Donskva-NM

SO: Zashchita-i-Karantin-Rastenii. 1998, No. 11, 19-20.

LA: Russian

AB: Field experiments were carried out in the Ryazan' region of Russia in 1997-98 on the control of murine rodents in clover and winter cereals and in orchards. The biological control agent Bactorodencide [based on Salmonella enteritidis] and the chemical preparation zinc phosphide, applied on the basis of forecasting, were effective.

PT: Journal-article

AN: 20001106144

**ANNEX 11 - DETAILS OF COMMONLY USED RODENTICIDES.**

The table is summarised from pesticide fact sheets produced by the International Programme on Chemical Safety (a joint initiative of UNEP, ILO AND WHO). The fact sheets can be seen at <http://www.inchem.org/pds.html>

| <i>Common Name</i> | <i>Chemical Group</i> | <i>Synopsis</i>   | <i>Properties</i>  | <i>Unintended Effects</i>  | <i>Absorption</i>  | <i>Exposure</i> | <i>Toxicity to non mammalian species</i> | <i>Precautions in use</i>   |
|--------------------|-----------------------|---|--|--|--|-----------------|--|---|
| Brodifacoum        | Organobromine         | This compound is an indirect anti-coagulant, and an effective stomach poison which inhibits prothombin formation and induces capillary damage. To be effective it usually requires only a single ingestion of a bait formation in one feeding to produce a kill. It is extremely toxic to a broad spectrum of rodents and other small mammals but due to its low bait concentration and its delayed effect it is considered to be only of low acute toxicity hazard to humans | It is an off white odourless powder with a low solubility in water. It is stable at room temperature | Non toxic to plants, is not hazardous to wildlife, humans or domestic animals if used correctly. May effect persons with blood coagulation problems and children | Brodifacoum is mainly absorbed from the gastrointestinal tract, however dermal absorption may also occur | -               | Poisoning of owls                        | Wear protective clothing at all times, respirator, avoid contact with mouth and eyes. Always wash hands before and after use. Clearly mark containers, use only in unoccupied premises nad remove within 24 hours, search and |

| <i>Common Name</i> | <i>Chemical Group</i>   | <i>Synopsis</i>   | <i>Properties</i>  | <i>Unintended Effects</i>  | <i>Absorption</i>  | <i>Exposure</i>            | <i>Toxicity to non mammalian species</i> | <i>Precautions in use</i>   |
|--------------------|-------------------------|---|--|--|--|----------------------------|--|---|
| Chlorophacinone    | Indandione derivative   | Chlorophacinone is a chlorinated, diphenyl indane derivative, an anti coagulant and metabolic inhibitor which is highly toxic to rodents but only slightly to humans and non target organisms. It is compatible with a wide spectrum of bait carriers and has no repellent action | It is a white crystalline solid, with a melting point of 140°C and non corrosive. It is soluble in organic solvents but only sparingly in water. It is stable and resistant to weathering effects. | It can be hazardous to other small mammals and birds as well as humans with bleeding problems and children | Chlorophacinone is mainly absorbed from the gastrointestinal tract, however dermal absorption and dust inhalation may also occur |                            | It is of low toxicity to birds.          | burn rodent bodies<br><br>As this derivative can cause internal haemorrhaging great care must be taken when handling. Wear protective clothing at all times, respirator, avoid contact with mouth and eyes. Always wash hands before and after use. |
| Lindane            | Organochlorine compound | An organochlorine pesticide of moderate mammalian   | It is a colourless crystalline solid   | Can produce taint in some  | Lindane is mainly  | There have been reports of | Toxic to fish, bees and birds.           | Avoid contact   |

| <i>Common Name</i> | <i>Chemical Group</i> | <i>Synopsis</i>   | <i>Properties</i>  | <i>Unintended Effects</i>   | <i>Absorption</i>                                  | <i>Exposure</i>   | <i>Toxicity to non mammalian species</i>     | <i>Precautions in use</i>  |
|--------------------|-----------------------|---|--|---|--|---|--|--|
|                    |                       | toxicity, it degrades slowly in the environment and accumulates in mammalian tissues  | which is very soluble in water. It is very stable in atmospheric conditions and is corrosive to aluminium  | crops, damage to potatoes, leeks, lettuce, onions, radishes and walnuts has been reported with excess use. Can also be harmful to young animals | absorbed orally.                                   | occupational exposure showing digestive, respiratory and neurological effects. In dietary studies in Europe and Asia, lindane has been detected in human fat. | A cumulative effect is evident as egg damage | with mouth and eyes, always protect face and hands. Hands should be washed after use.  |
| Methyl Bromide     | Alkyl halide          | A powerful fumigate gas that is one of the most toxic of the common organichalides. In a massive dosage it is narcotic with a delayed neurotoxic delay. | It is a colourless gas with a sweet odour. Freely soluble in organic solvents although forms a precipitate in water. Very stable in air, non flammable and non corrosive | It is phytotoxic to growing plants  | It is absorbed in the lungs or orally in solution. | Only mild intoxication reported   | Toxic to fish and birds                      | Should only be handled by a trained personnel wearing protecting clothing, not leather or rubber as this is permeable. Wash hands after use, ventilate |

| <i>Common Name</i>   | <i>Chemical Group</i>        | <i>Synopsis</i>  | <i>Properties</i>  | <i>Unintended Effects</i>  | <i>Absorption</i>   | <i>Exposure</i>   | <i>Toxicity to non mammalian species</i>  | <i>Precautions in use</i>  |
|----------------------|------------------------------|--|--|--|---|---|---|--|
| Phosphine            | Phosphide                    | A gas of high toxicity to mammals effecting the gastrointestinal tract and central nervous system                                  | It is a colourless, inflammable gas with a fish like odour. It is slightly soluble in water and spontaneously flammable in air | -  | Inhalation or ingestion of phosphide formulations are the main routes | Poisoning cases are rare generally due to careless handling | -   | area immediately. Wear clean protective clothing at all times, washing after use. Wash hands after use.  |
| Sodium Fluoroacetate | Fluorine containing compound | A water soluble salt of high toxicity. Rapidly absorbed from the gastrointestinal tract but not readily absorbed through the skin. | A colourless, odourless salt which is very soluble in water and also very stable.  | Very toxic to birds, domestic animals and wildlife. Can be harmful to carnivorous and omnivorous species via secondary poisoning | The oral route is the main route                                      | -   | Low toxicity to fish, but extremely toxic to birds and bees and general wildlife. | Wear protective clothing at all times, respirator, avoid contact with mouth and eyes. Always wash hands before and after use. Clearly mark containers, use only in |

| <i>Common Name</i> | <i>Chemical Group</i> | <i>Synopsis</i>  | <i>Properties</i>  | <i>Unintended Effects</i>  | <i>Absorption</i>   | <i>Exposure</i> | <i>Toxicity to non mammalian species</i>                     | <i>Precautions in use</i>   |
|--------------------|-----------------------|--|--|--|---|-----------------|--|---|
| Thallium Sulfate   | Heavy metal salt      | Of high toxicity as a chronic poison due to its cumulation especially in the liver, brain and skeletal muscle. | It is a colourless crystalline solid or white powder which is soluble in water and highly stable under all conditions. It is also corrosive to zinc. | Livestock, domestic animals and wildlife have been poisoned. Carnivorous mammals, birds and sheep by secondary poisoning | Thallium Sulfate is mainly absorbed from the gastrointestinal tract, however dermal absorption is also possible. All produce fatal results. | -               | Moderately toxic to some fish, and highly poisonous to birds | unoccupied premises and remove within 24 hours, search and burn rodent bodies<br><br>Wear protective clothing at all times, respirator, avoid contact with nose, mouth and eyes. Always wash hands before and after use. Clearly mark containers, use only in |

| <i>Common Name</i> | <i>Chemical Group</i>    | <i>Synopsis</i>   | <i>Properties</i>  | <i>Unintended Effects</i>          | <i>Absorption</i>  | <i>Exposure</i>   | <i>Toxicity to non mammalian species</i>  | <i>Precautions in use</i>   |
|--------------------|--------------------------|---|--|------------------------------------|--|---|---|---|
| Warfarin           | Hydroxycoumarin compound | An anti coagulant that is highly toxic to mammals on repeated ingestion but of variable toxicity to different species when given as a single oral dose. It does not accumulate in body tissues. | It crystals are colourless, tasteless and odourless. It has a low solubility in water and most organic solvents and is relatively stable | -                                  | Absorbed from the gastrointestinal tract or by inhalation and to a lesser extent through intact skin | Dematologic side effects have been observed in patients undergoing Warfin therapy | Moderately toxic to birds                 | unoccupied premises and remove within 24 hours, search and burn rodent bodies<br><br>Clean overalls and gloves must be worn. Care washing equipment and hands after use. Label all containers well. After use search and destroy all rodent bodies. |
| Zinc Phosphide     | Inorganic phosphide      | High mammalian toxicity which in the presence of dilute acid will decompose   | It is a grey powder with a high melting point that sublimes  | Its toxicity is lost under exposed | Absorbed from the gastrointestinal   | Most cases are through ingestion by   | Thought to be toxic to fish, birds, cows, | Wear protective clothing,   |

| <i>Common Name</i> | <i>Chemical Group</i> | <i>Synopsis</i>  | <i>Properties</i>   | <i>Unintended Effects</i> | <i>Absorption</i>  | <i>Exposure</i> | <i>Toxicity to non mammalian species</i> | <i>Precautions in use</i>   |
|--------------------|-----------------------|--|---|---------------------------|--|-----------------|--|---|
|                    |                       | to produce phosphine. It does not cumulate in body tissues | when heated in the absence of oxygen. It is insoluble in water, stable when dry but decompose slowly in moist air. Reacts violently with acids, decomposes to inflammable phosphine gas | conditions within 2 weeks | tract or by inhalation of dust or phosphine gas . It does not absorb through intact skin only through abrasions. | accident        | goats, sheep, pigs and wild rabbits      | respirator, avoid contact with mouth and eyes. Always wash hands before and after use. Clearly mark containers, use only in unoccupied premises, remove within 24 hours, burn rodent bodies |

## ANNEX 12 - ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

The following pages set out a proposed system of screening and assessment for the activities to be funded under the SLP. *Figure 1* below sets out a decision tree on the screening and assessment of sub-projects funded by the LIF and LDF.

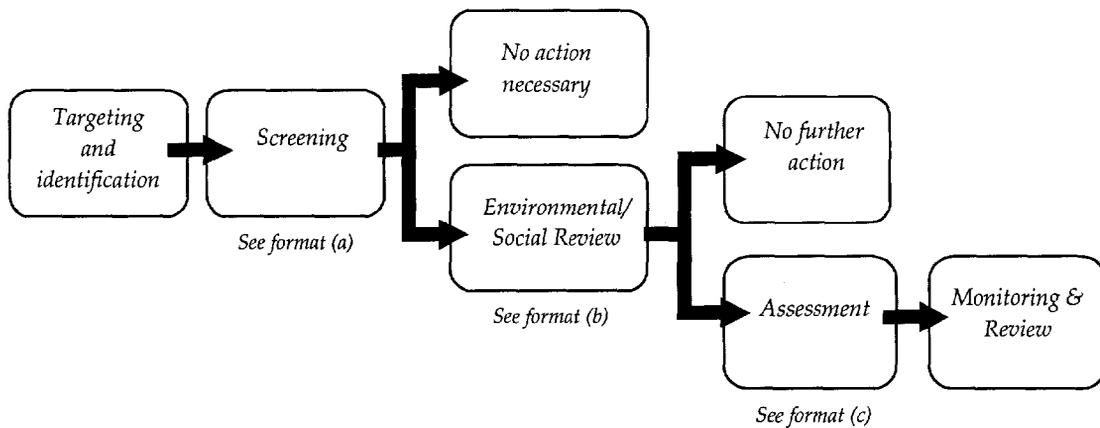
The screening system is sufficiently flexible to be used for the PRM component, should environmental officers / inspectors on aimag- and sum-level PRM working groups identify a need to screen or assess activities under that component.

*Figure 2* sets out lines of reporting and advice in the system proposed here. The reporting system covers the whole project, ie LIF, LDF, PRM and microfinance components. We propose that this system should be merged with the mainstream project reporting system to be used for each of the components.

It is extremely unlikely that the usual Mongolian Detailed EIA (DEIA) system will be required for any activities under the SLP, since all individual activities are small in scale. Hence the proposed system does not overlap with the DEIA system. An alternative, more rapid system of reviews, and assessments is proposed.

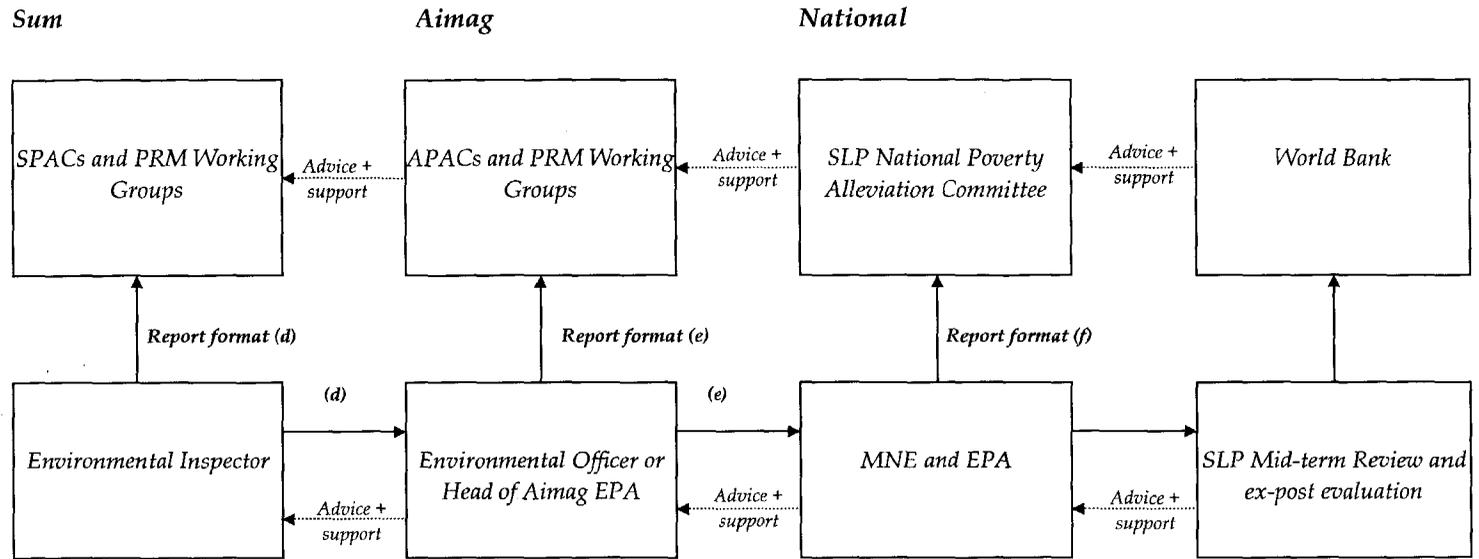
Both diagrams refer to the report or checklist formats that are proposed and set out in this annex.

*Figure 1. Decision tree.*



Following targeting (in the case of the LIF/LDF) and identification (in which environmental staff are involved), each proposed sub-project is checked against the screening checklist to decide whether no further assessment or whether a brief environmental review is required. This decision is based on the type of sub-project. In the case where an environmental review is required, the responsible officer draws conclusions on whether no further action is necessary, or an assessment is required.

Figure 2. Lines of reporting and advice on SLP environmental impact



**Format (a) - Screening checklist**

Which of the following screening categories is this sub-project in? [Tick one only]

| <i>Projects requiring environmental review</i>   | <i>Projects not requiring environmental review</i>  |
|--|---|
| <input type="checkbox"/> Roads, or bridges   | <i>Education:</i>   |
| <input type="checkbox"/> Renovation of buildings   | <input type="checkbox"/> Bag schools  |
| <input type="checkbox"/> Water supply systems  | <input type="checkbox"/> Training facilities  |
| <input type="checkbox"/> Sanitation systems  | <input type="checkbox"/> Sum school farms   |
| <input type="checkbox"/> Community forestry  | <i>Rural health services:</i>   |
| <input type="checkbox"/> Fuel collection   | <input type="checkbox"/> Bag feldsher transport and equipment   |
| <input type="checkbox"/> Electricity connection or generation                              | <input type="checkbox"/> Sum hospital transportation  |
| <input type="checkbox"/> Manufacturing, transport and storage, for example of concentrates | <input type="checkbox"/> Training of Community Health Volunteers                                      |
| <input type="checkbox"/> Otor reserves   | <i>Pre-school:</i>  |
| <input type="checkbox"/> Construction of winter shelters                                   | <input type="checkbox"/> Expansion of kindergarten services   |
| <input type="checkbox"/> Irrigation systems  | <input type="checkbox"/> Kindergarten repair and ger kindergartens                                    |
| <input type="checkbox"/> Veterinary activities   | <input type="checkbox"/> Training of education volunteers   |
| <input type="checkbox"/> Wolf control activities   | <input type="checkbox"/> Pre-school teacher training  |
| <input type="checkbox"/> Rodent control methods  | <input type="checkbox"/> Establishment of kindergarten vegetable gardens                              |
| <input type="checkbox"/> Rehabilitation construction of wells or reservoirs                | <input type="checkbox"/> Food for children from poor households                                       |
| <input type="checkbox"/> Restocking  | <i>Support for Disabled:</i>  |
| <input type="checkbox"/> Other. Please describe: [type here]                               | <input type="checkbox"/> Equipment for disabled persons   |
|  | <input type="checkbox"/> Support for mentally and physically handicapped children to attend nurseries |
|  | <input type="checkbox"/> Other. Please describe: [type here]  |

**Completed by:** [type here]

**Name:** [type here]

**Position:** [type here]

**Date:** [type here]

*Checklist (b) - Environmental and Social Review*

---

|   |             |
|---|-------------|
| Sub-project name                              | [type here] |
| Estimated cost (Tugrig)                       | [type here] |
| What is the project objective and activities? | [type here] |
| How was the site of the sub-project chosen?   | [type here] |

---

**Location**

|   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| Does the project conflict with the plans set out in the sum pastoral risk management plan?<br>If 'Yes', give details: [type here]   | <input type="checkbox"/> | <input type="checkbox"/> |
| Is the project sited within a strictly protected area, national park, nature reserve or natural/historical monument?<br>If 'Yes', give details: [type here]                             | <input type="checkbox"/> | <input type="checkbox"/> |
| Will the project involve the relocation of people or herders' livestock from the site?<br>If 'Yes', give details: [type here]   | <input type="checkbox"/> | <input type="checkbox"/> |
| Does the project involve any land acquisition?<br>If 'Yes', give details: [type here]   | <input type="checkbox"/> | <input type="checkbox"/> |
| Does the project reduce people's access (via roads, location etc) to the pasture, water, public services or other resources that they depend on?<br>If 'Yes', give details: [type here] | <input type="checkbox"/> | <input type="checkbox"/> |

---

**Impacts**

|  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| Does the sub-project require large volumes of construction materials to be taken from local sources (eg gravel, stones, water, timber, firewood)?<br>If 'Yes', give details: [type here] | <input type="checkbox"/> | <input type="checkbox"/> |
| Does the sub-project require, or lead to, the disposal of wastewater, solid waste or any other solids or liquids into streams, rivers or lakes?<br>If 'Yes', give details: [type here]   | <input type="checkbox"/> | <input type="checkbox"/> |
| Does the sub-project involve the use of pesticides?<br>If 'Yes', give details: [type here]   | <input type="checkbox"/> | <input type="checkbox"/> |
| Does the sub-project have human health and safety risks, during construction or later?<br>If 'Yes', give details: [type here]  | <input type="checkbox"/> | <input type="checkbox"/> |

---

Will the sub-project produce solid waste (including packaging, oils, or discarded medical equipment or machinery parts)?    
If 'Yes', give details: [type here]

---

Will the project result in an increase in hunting among herders?    
If 'Yes', give details: [type here]

---

Will the project lead to changes in the distribution of people or of livestock?    
If 'Yes', give details: [type here]

---

Will the project lead to migration into the area?    
If 'Yes', give details: [type here]

---

Will the project adversely affect any ethnic minorities living in the area?    
If 'Yes', give details: [type here]

---

**Alternatives**

Is it possible to achieve the objectives above in a different way, with fewer environmental impacts?

[type here]

**Conclusion**

Summarise the above:

- All the above answers are 'No'
- There is at least one 'Yes'

**Guidance**

- If all the above answers are 'No', there is no need for further action;
- If there is at least one 'Yes', an assessment is required;
- If the project requires relocation of people, a resettlement plan is required.

Which course(s) of action do you recommend?

- No further action
- Assessment
- Resettlement plan

If your recommendation differs from the above guidance, please explain why.

[type here]

**Completed by:** [type here]

**Name:** [type here]

**Position:** [type here]

**Date:** [type here]

**Assessment - Format (c)**

Please use short descriptions to respond to the following:

**General Description of Sub-project**

Sub-project objective

[type here]

Sub-project phases, components, and budget

[type here]

Alternatives rejected by Sub-project Presenters

[type here]

**Baseline Description**

Could the sub-project have a negative impact on any of the following features?

| <i>Physical-chemical environment</i>  | <i>Biological Environment</i>  | <i>Socio-economic environment</i>  |
|---|--|--|
| <input type="checkbox"/> Groundwater<br><input type="checkbox"/> Rivers, streams and springs<br><input type="checkbox"/> Soil | <input type="checkbox"/> Pasture resources<br><input type="checkbox"/> Wildlife<br><input type="checkbox"/> Herbs and grasses<br><input type="checkbox"/> Forest | <input type="checkbox"/> Poverty<br><input type="checkbox"/> Men's and women's roles<br><input type="checkbox"/> Human health<br><input type="checkbox"/> People's access to land they are currently using<br><input type="checkbox"/> Ethnic communities<br><input type="checkbox"/> Cultural monuments<br><input type="checkbox"/> Social infrastructure (drains, buildings etc) |

Please give a short description of the baseline for each tick above.

[type here]

**Negative Environmental Impacts**

For each you have ticked above, please describe the type of impact, risk, significance, and proposed mitigation and monitoring.

| Type of impact | Description of impact | Risk of impact (low, medium, or high) | Significance of impact (low medium, or high) | Mitigation and monitoring requirements |
|----------------|-----------------------|---------------------------------------|--|--|
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |
| [type here]    | [type here]           | [type here]                           | [type here]                                  | [type here]                            |

(expand as necessary)

**Environmental and Social Management Plan**

Please insert the actions you propose to ensure that negative impacts are mitigated, or any required monitoring.

| Action      | Who by      | By when     | Cost        |
|-------------|-------------|-------------|-------------|
| [type here] | [type here] | [type here] | [type here] |
| [type here] | [type here] | [type here] | [type here] |
| [type here] | [type here] | [type here] | [type here] |
| [type here] | [type here] | [type here] | [type here] |
| [type here] | [type here] | [type here] | [type here] |
| [type here] | [type here] | [type here] | [type here] |

(expand as necessary)

**Completed by:** [type here]

**Name:** [type here]

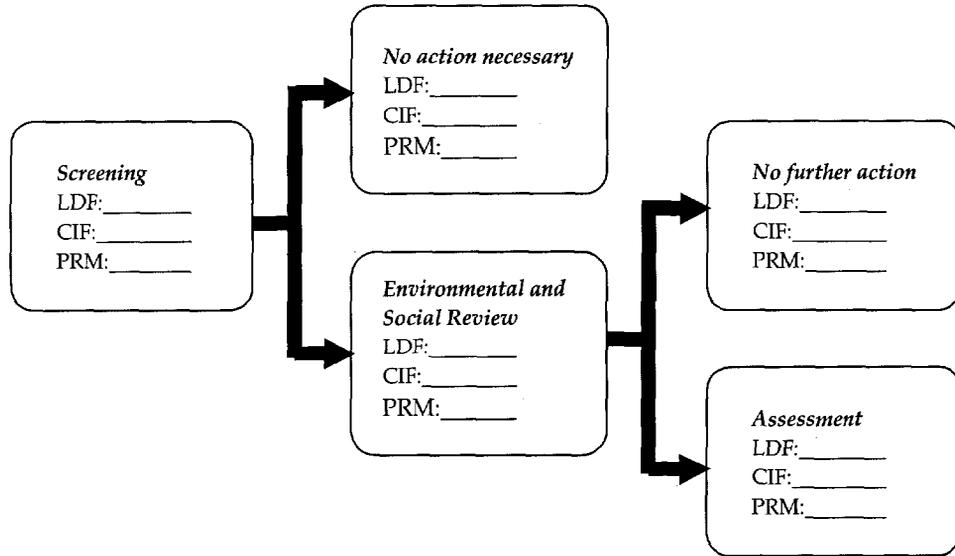
**Position:** [type here]

**Date:** [type here]

**Format (d) - Sum Environmental Inspector's Annual Report  
(to SPAC, Sum PRM Working Group, and Aimag Environmental Officer)**

Sum: [type here]  
Reporting year: [type here]

Enter numbers of sub-projects screened in the diagram:



Were you personally involved in the targeting or identification of any sub-projects under the LDF, CIF or the PRM component?

Yes  No  
If 'Yes', please describe:  
[type here]

Were any of the sub-projects environmentally beneficial projects such as for example concerning solid waste management?

Yes  No  
If 'Yes', please describe:  
[type here]

**Results of assessments**

| Type of projects that have been subject to assessment: | Impacts identified included: | How successful was the assessment in ensuring that mitigation or monitoring proposals were carried out? If not, why not? |
|--|------------------------------|--|
| [type here]  | [type here]                  | [type here]  |

**Is the SLP contributing to improved pasture management in your sum?**

- Yes, it's contributing to an overall improvement  
 No, it's worsening pasture degradation  
 Too early to say

Please explain:

|             |
|-------------|
| [type here] |
|-------------|

*Have any other environmental reviews been carried out by the SLP in your sum? If 'yes', please describe. If 'No' tick here*

| Review or study | Summary of key conclusions | Was the review successful? eg were its recommendations carried out? If not, why not? |
|-----------------|----------------------------|--|
| [type here]     | [type here]                | [type here]  |

*Were there any unforeseen environmental or social problems associated with the SLP?*

| Problem     | Actions taken | Actions to be taken |
|-------------|---------------|---------------------|
| [type here] | [type here]   | [type here]         |

***Training***

| Please list the training you have received under the SLP | List TWO key areas of training you need in order to carry out your role in the SLP |
|--|--|
| [type here]  | 1) [type here]<br>2) [type here]   |

*Completed by:* [type here]

*Name:* [type here]

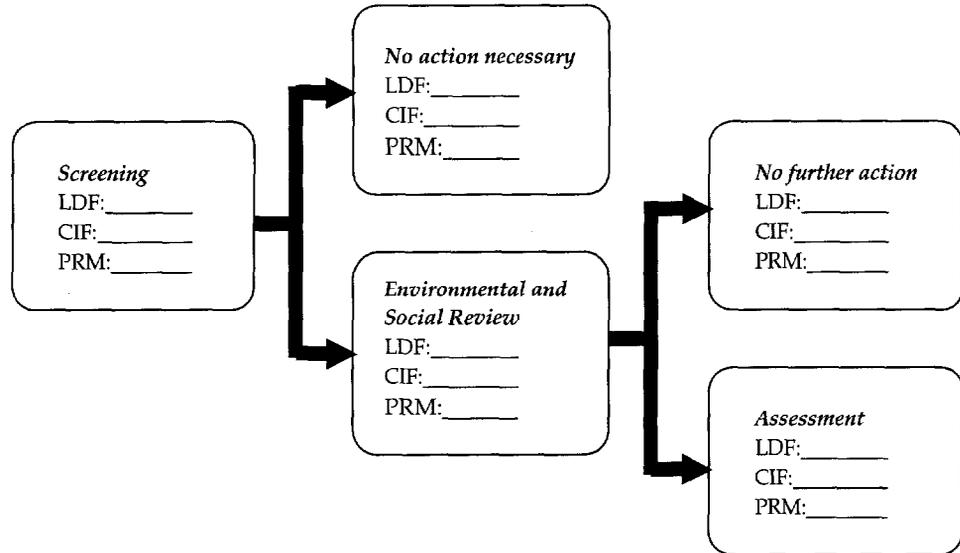
*Position:* [type here]

*Date:* [type here]

**Format (e) - Aimag Environmental Directors' Annual Report  
(to APAC, MNE and SLPO)**

Aimag: [type here]  
Reporting year: [type here]

Enter numbers of sub-projects screened in the decision tree diagram:



Summarise, from sum-level reports, the ways in which environmental inspectors have been involved in the targeting or identification of any sub-projects under the LDF, CIF or the PRM component.

[type here]

Summarise from sum-level reports the types of environmentally beneficial sub-projects, concerning solid waste management for example, under the SLP?

[type here]

**Results of assessments**

Summarise the results of Assessments, from your knowledge and from the sum inspectors' reports:

| Type of projects that have been subject to assessment: | Typical impacts identified included: | How successful was the assessment in ensuring that mitigation or monitoring proposals were carried out? If not, why not? |
|--|--------------------------------------|--|
| [type here]  | [type here]                          | [type here]  |

**Is the SLP contributing to improved pasture management in your aimag?**

Yes, it's contributing to an overall improvement

- No, it's worsening pasture degradation
- Too early to say

Please explain:

|             |
|-------------|
| [type here] |
|-------------|

Summarise any other environmental reviews carried out by the SLP at sum or aimag levels.

| Sum or Aimag level | Review or study | Summary of key conclusions | Was the review successful? eg were its recommendations carried out? If not, why not? |
|--------------------|-----------------|----------------------------|--|
| [type here]        | [type here]     | [type here]                | [type here]  |

Summarise any unforeseen environmental or social problems associated with the SLP in your Aimag.

| Problem     | Actions taken | Actions to be taken |
|-------------|---------------|---------------------|
| [type here] | [type here]   | [type here]         |

Based on feedback from sums, what are the 3 priority training requirements under the SLP?

| Training requirement | Who for     |
|----------------------|-------------|
| 1) [type here]       | [type here] |
| 2) [type here]       |             |
| 3) [type here]       |             |

*Completed by:* [type here]

*Name:* [type here]

*Position:* [type here]

*Date:* [type here]

**Format (f) – SLP Annual Environment and Social Report  
(to the project director and working groups)**

Reporting year: [type here]

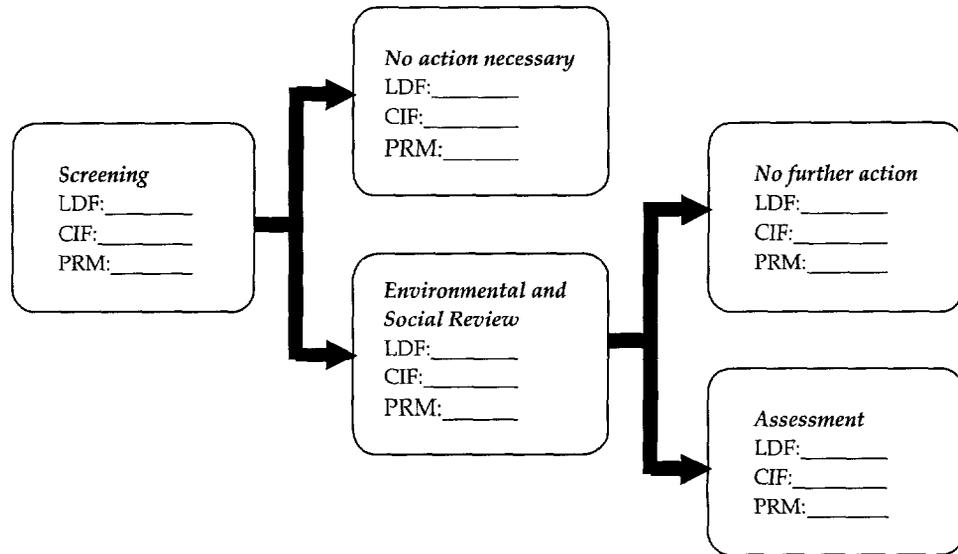
Completed by: [type here]

Name: [type here]

Position: [type here]

Date: [type here]

Enter total numbers of sub-projects screened in the diagram:



Based on the *aimag*-level reports, list the key points that require action to improve, or maintain the environmental performance of the SLP.

[type here]

What were last years' key actions? Were they achieved? If not, why not?

[type here]

Please describe progress, based on aimag-level environmental inspectors' reports and your own knowledge, against the actions set out in the environmental management plan.

| Issue  | Action  | Progress    |
|--|---|-------------|
| <b>Project appraisal and launch</b>  |   |             |
| Pastoral risk management is not seen by all stakeholders as central to the project   | <ul style="list-style-type: none"> <li>• Invite local experts on sustainable pasture management to contribute to project launch workshops</li> <li>• Invite representatives from UMENGO and from MNE institutes to project launch workshops</li> </ul>  | [type here] |
| <b>Key social assessment issues</b>  |   |             |
| Need to ensure targeting of all social groups cited in project document  | <ul style="list-style-type: none"> <li>• Broadening of stated target groups so that they include all target groups stated in the project documents</li> <li>• Monitoring of inclusion of target groups</li> </ul>   | [type here] |
| Ensure poorer households have access to herder associations and are included in PRM activities   | <ul style="list-style-type: none"> <li>• Assign sum-level staff with responsibility to work with the poorest to ensure this</li> </ul>  | [type here] |
| Need to base monitoring and evaluation on information that is meaningful to local people   | <ul style="list-style-type: none"> <li>• Identify how local people want to monitor the project</li> <li>• Carefully distinguish between local people's monitoring needs, and the needs of higher administrative levels</li> </ul>   | [type here] |
| Resettlement issues  | <ul style="list-style-type: none"> <li>• Implement resettlement plan as set out in Table 8.3</li> </ul>   | [type here] |
| Ensure ethnic minorities receive benefits of the project   | <ul style="list-style-type: none"> <li>• Implement ethnic minorities development plan</li> </ul>  | [type here] |
| <b>Pastoral risk management component</b>  |   |             |
| Vigilance for, screening of, and monitoring of specific developments under the PRM component, whilst avoiding increased work-load for environment officers | <ul style="list-style-type: none"> <li>• Environmental inspectors and officers kept fully informed of PRM activities through involvement in PRM working groups</li> <li>• Aimag / sum level environmental officers &amp; inspectors include reporting on PRM in regular reporting to Governors &amp; MNE</li> </ul> | [type here] |

|   |   |             |
|---|---|-------------|
| and inspectors  |   |             |
| Include environmental officers in capacity-building and training on pastoral risk management                  | <ul style="list-style-type: none"> <li>Sum-level environmental inspectors included in PRM Working Groups' training</li> <li>Aimag-level environmental officer identified and included in PRM aimag-level coordination and implementation units</li> </ul>   | [type here] |
| Environmental inputs to annual sum-level PRM plans  | Environmental inspectors included in participatory workshops to develop annual PRM plans  | [type here] |
| Potential to include environmentally positive projects under multi-purpose funds                              | Sum and aimag level agricultural and environmental officers draw up list of possible environmentally positive projects  | [type here] |
| Lesson learning on sustainable pasture management as part of M&E of the component                             | PRM Working Groups, including environmental officers, consider lessons learned  | [type here] |
| Inclusion of MNE in interministerial national PRM Working Group   | <ul style="list-style-type: none"> <li>MNE identify regular officer for inclusion in the group</li> </ul>   | [type here] |
| Potential to include MNE / Land Administration Authority data on land use in bag- and sum-level land-use maps | <ul style="list-style-type: none"> <li>MoFA Implementation Unit discusses land-use data with LAA</li> <li>Exchange of ideas and information between sum-level officers involved in preparation of land-use and LAA officers</li> </ul>  | [type here] |
| Human health risks associated with piloting of biopesticides  | <ul style="list-style-type: none"> <li>Reconsider the SLP approach to pest control: abandon proposal to pilot Salmonella-based pesticides and adopt piloting of IPM</li> </ul>  | [type here] |
| Need to reduce or mitigate environmental impact of pest control   | <ul style="list-style-type: none"> <li>Information in this report to be passed to aimag-level environmental officers</li> <li>Aimag-level environmental officers participate in discussions on integrated pest management with MoFA /agricultural inspector</li> <li>Aimag-level environmental officers implement EMP for pilot IPM measures</li> </ul> | [type here] |
| Opportunity to associate health & sanitation awareness  | Sum and aimag officers in charge of well rehabilitation and construction invite aimag and sum level health officers, and nurses to train well-users in  | [type here] |

|  |  |             |
|--|--|-------------|
| with well rehabilitation and construction  | sanitation issues  |             |
| Sharing of experience and lessons learned with other initiatives in pasture management & environmental capacity                          | MoFA and MNE jointly draw up list of all ongoing initiatives   | [type here] |
|  | MoFA and MNE regularly arrange meetings between individuals from project implementation units to share lessons & raise mutual awareness  |             |
| <b><i>Rural microfinance</i></b>   |  |             |
| Will liquidation of livestock assets into cash savings reduce livestock numbers?   | Examination of this issue as part of the SLP's usual appraisal of the impact of the micro-finance component in advance of and during project MTR and ex-post evaluation.   | [type here] |
| <b><i>Local investment fund / Local development fund</i></b>   |  |             |
| Vigilance for, screening of, and monitoring of sub-projects, whilst avoiding increased work-load for environment officers and inspectors | <ul style="list-style-type: none"> <li>• MoFE to prepare management system for CIF / LDF targeting, project identification and reporting that includes key sections on environment [based on annexed draft - yet to be done], agreed with MNE</li> <li>• MoFE ensures LDF / CIF officers are aware of shortlist of projects requiring environmental review</li> <li>• Aimag / sum level environmental officers &amp; inspectors include reporting on CIF / LDF sub-projects in regular reporting to Governors &amp; MNE</li> </ul> | [type here] |
| Potential to encourage environmentally positive projects   | <ul style="list-style-type: none"> <li>• MoFE draws up list, based on draft (based on draft included in annex)</li> <li>• Inform aimag and sum level managers of the eligibility of environmental projects</li> <li>• Proactively raise awareness among sum and bag-level beneficiaries of the eligibility of environmental projects / businesses</li> </ul>   | [type here] |
| <b><i>National and international project monitoring and evaluation</i></b>   |  |             |
| Requirement for concise analysis of environmental impact, based on information from aimag and sum levels                                 | <ul style="list-style-type: none"> <li>• MoFE and MoFA agree with MNE and World Bank, a concise format for annual reporting on environmental impact, and on synthesis reports in preparation for project mid-term review and ex-post evaluation</li> <li>• MoF and MoFA complete annual and synthesis</li> </ul>   | [type here] |

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reports using this format

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Requirement for  
environmental  
evaluation & lesson  
learning in MTR and  
ex-post evaluation

World Bank appoint local or international  
environmental specialist, with approval of MNE, to  
provide inputs to MTR and ex-post evaluation

[type here]

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## ANNEX 13

### MONGOLIA: SUSTAINABLE LIVELIHOOD PROJECT

#### RESETTLEMENT POLICY FRAMEWORK

December 14, 2001

DRAFT

#### Introduction

This report sets out the **Policy Framework for Compensation, Resettlement and Rehabilitation of Project Affected Persons** for the **Sustainable Livelihood Project** (the Project). The Policy Framework provides the principles and procedures to be followed to compensate people who may be negatively affected by the Project so as to ensure that they will be assisted to improve, or at least restore their living standards, income and/or production capacity to pre-project levels. While no resettlement or land acquisition is anticipated, the Project has developed a policy framework to protect people who may be negatively impacted from the possible community demand for the construction and or rehabilitation of small-scale infrastructure sub-projects, such as, roads, bridges, buildings, structures, water supply and sanitation facilities, and other civil work. Local officials confirmed that the rural countryside of Mongolia has vast amount of land with low density population; therefore, land acquisition will be rare. At the moment, the demand for the rehabilitation of small-scale infrastructure sub-projects will only be known during project implementation. An integrated environmental and social screening process, therefore, has been prepared which will check for possible negative impacts and for the necessary actions required for such sub-projects.

#### Background

This is the first phase of a three phased program to support the shift in Mongolia's national anti-poverty strategy away from welfarist measures towards those that promote secure and sustainable livelihoods for all. The objective of the proposed Project is to identify and pilot-test institutional innovations that will enhance the capabilities of community groups and poor and vulnerable households and individuals to better manage risk, build up income-generating assets, and participate in the rehabilitation and maintenance of community-level infrastructure and basic services. To realize this development objective, four components will be implemented in eight selected aimags (provinces). These are: a) Pastoral Risk Management; b) Rural Micro-Finance Services; c) Local Initiative Fund; and d) Project Management.

#### Legal Framework

The national legal framework governing the implementation of this Policy Framework is based on the *Constitution of Mongolia* and the *Mongolian Law on Land*.

The *Constitution of Mongolia* lists 18 rights for the citizens of Mongolia under Article 16. One of the rights (sub-article 3) states the "Right to fair acquisition, possession and inheritance of moveable and immoveable property. Illegal confiscation and requisitioning of the private property of citizens shall be prohibited. If the State and its bodies appropriate private property on the basis of exclusive public need, they shall do so with due compensation and payment."

In the *Mongolian Law on Land* (November 11, 1994), it states that "...the authorized government organization shall change or take back the land with compensation by entering into a contract with

citizens, economic entities, and organizations possessing land through Sum and Duureg Governors” (Article 36).

Article 37 provides further information on acquisition of land and property:

Sub-article 2: “Upon consideration of the release agreement with the land possessor, the value of immovable construction, other property, and the costs for land release estimated at the time, shall be reflected in the decision on changing or taking back with compensation the land possessed by others.”

Sub-article 3: “Upon entering into the contract described in the sub-article 3 of the Article 36 of this Law, the compensation for the land possessor shall be transferred from the State central budget to the Sum and Duureg Governors.”

Sub-article 4: “The Sum and Duureg Governor shall forward the compensation to citizens, economic entities, and organizations formerly possessing land within 60 days after entering into the contract if not indicated otherwise in the contract described in paragraph 3 of Article 36 of this Law.”

Sub-article 5: “The land possessor shall release the land within 30 days after the compensation has been paid in full if it is not otherwise indicated in the contract described in paragraph 3 of Article 36 of this Law.”

Supporting material for the resettlement policy framework also comes from the *World Bank Operational Policy OP 4.12 on Involuntary Resettlement* (September 2001) which includes the principles listed below.

## **Principles**

The general principles for the Resettlement Policy Framework can be summarized as follows:

1. Land acquisition, other negative impacts and involuntary resettlement are to be minimized as much as possible.
2. The resettlement and rehabilitation program should improve, or at least maintain, the affected person’s pre-project living standards and should warrant their participation in project benefits.
3. The compensations to be provide are:
  - a) Compensation at replacement cost for houses and other affected structures without deduction for depreciation or salvage materials for houses and other structures
  - b) Compensation in terms of land for land of equal productive capacity acceptable to the affected person for agricultural land (where land is not available, compensation is to be provided in cash at replacement cost)
  - c) Replacement of premise/residential land of equal size acceptable to the affected person
  - d) Transportation allowance and assistance with the move.
4. Plans for acquisition of land and other assets and provision of rehabilitation measures will be carried out in consultation with the project affected persons, to ensure minimal disturbance.

## **Entitlement Policy**

Specifically, project affected people (PAP) will be entitled to the following types of compensation and rehabilitation measures:

1. PAPs losing agricultural land:

- a) The general mechanism for compensation of lost agricultural land will be through provision of land for land arrangements of equal productive capacity, satisfactory to the PAP. However, if the PAP so wishes and the portion of the land to be lost represents 20% or less of the total area of the landholding, cash compensation, at full replacement cost, may be provided to the PAP.
  - b) PAPs will be compensated for the loss of standing crops and fruit or industrial trees at market price.
  - c) PAPs whose land is temporarily taken by the works under the work contract will be compensated for their loss of income, standing crops and for the cost of soil restoration and damaged infrastructure.
2. PAPs losing residential land and structures:
- a) The mechanism for compensating loss of residential land and structures will be: (i) the provision of replacement residential land (house site and garden) of equivalent size, satisfactory to the PAP; and (ii) cash compensation reflecting full replacement cost of the structures without depreciation.
  - b) If the impact on residential land and/or structure is minor, cash compensation at replacement cost acceptable to the PAP will be provided.
  - c) If the residential land and/or structure is only partially being affected by the Project and the remaining residential land is not sufficient to rebuild the residential structure lost, then at the request of the PAP the entire residential land and structure will be acquired at full replacement cost, without depreciation.
  - d) Tenants, who have leased a house for residential purposes will be provided with a cash grant of three months rental fee at the prevailing market rate in the area, and will be assisted in identifying alternative accommodation.
3. PAPs losing business
- a) The mechanism for compensating loss of business will be: (i) the provision of alternative business site of equal size and accessibility to customers, satisfactory to the PAP; (ii) cash compensation for lost business structure reflecting full replacement cost of the structures, without depreciation; and (iii) cash compensation for the loss of income during the transition period.

Lack of legal rights to the assets lost will not bar the affected persons from entitlement to compensation and rehabilitation measures. PAPs will also be exempted from all administrative, transfer and legal fees.

### **Full Resettlement Plan**

In cases where the negative impacts are significant or where more than 200 people are affected by a sub-project under the Project, a full Resettlement Plan for each such sub-project will be prepared by the Aimag project office in accordance with the provisions of this Policy Framework. The full Resettlement Plan will be furnished to the World Bank for its concurrence and clearance.

Each full Resettlement Plan will include: (a) a description of the sub-project and potential impacts; (b) objectives of the resettlement plan; (c) baseline and socioeconomic surveys; (d) detailed compensation

and rehabilitation information; (e) institutional arrangements for implementation; (f) community participation plan; (g) grievance procedures; (h) arrangements for monitoring and evaluation, (i) implementation schedule; and (j) cost estimate and funding source.

After clearance from the World Bank, the compensation, resettlement and rehabilitation activities of the Resettlement Plan will be satisfactorily completed and verified by the Central project office before funds can be disbursed for civil works under the sub-project.

Baseline Survey. The information in the baseline survey for each PAP household will include the following:

- a) number of persons;
- b) number, type, and area of the houses to be affected;
- c) number and area of all the residential plots to be affected;
- d) number, category and area of agricultural land to be affected;
- e) quantity and types of crops and trees to be affected;
- f) businesses to be affected including structures, land and other fixed assets;
- g) productive assets to be affected as a percentage of total productive assets;
- h) quantity and category of other fixed assets affected by the Project; and
- i) temporary damage to productive assets.

Socio-economic Survey. Information will include, among others, the following:

- a) age, sex, and education of each family member;
- b) main occupation and level of income of each family member;
- c) ethnicity of family and ethnic composition of community;
- d) residential history of family and of community;
- e) potential economic and social impact from sub-project on family and on the community; and
- f) impact on host community.

### **Partial Resettlement Plan**

In case where the negative impact is minor and less than 200 people are affected, a Partial Resettlement Plan for each sub-project will be prepared by the Sum project office. These documents will be furnished to the World Bank for its concurrence and clearance in the first year and then to the Central project office for subsequent years.

Each Partial Resettlement Plan will include: (a) a baseline survey; (b) detailed compensation and other rehabilitation entitlements for each PAP; (c) description of consultation conducted; (d) institutional arrangements for implementation; (e) grievance procedures; (f) arrangements for monitoring and evaluation (g) a timetable and detailed budget and source of funding.

After clearance from WB and later the Central project office, the compensation, resettlement and rehabilitation activities of the Partial Resettlement Plan will be satisfactorily completed and verified by the Aimag project office before funds can be disbursed for civil works under the sub-project.

### **People's Participation**

The PAPs will participate throughout the various stages of the planning and implementation of the partial or full Resettlement Plans. For these purposes and prior to the preparation of the Resettlement Plans, the

PAP will be informed of the provisions of this Policy by the Community Mobilizer and at public meetings held by the representatives from the respective project offices.

Each household PAP will be fully informed of their entitlements/compensation and rehabilitation under the partial or full Resettlement Plans. After compensation, each PAP household will sign an acceptance letter.

Communities and affected persons will also be allowed to propose their own solutions and options for compensation, especially for the community driven component, Local Initiative Fund, where sub-projects are proposed, designed and implemented by community members themselves (with some technical assistance if needed for more complex projects). Such options could include pooling of resources and voluntary donations of land and or assets.

If this is the case, monitoring procedures would be established by each sum to ensure that the land and property is donated of the person's own free will, that as a result of this act the person and his household are not adversely impacted, and that they can have an established recourse to voice their complaints. Detailed inventory and survey of land acquired should be undertaken. The donation should be duly registered at the bag and sum levels.

Overall, regular monitoring will be undertaken in order to obtain feedback from PAPs to see if there has been compliance with Resettlement Policy. The World Bank staff will also monitor these activities in their regular supervision missions during the period of project implementation; consultation with PAPs and beneficiaries will be conducted.

### **Implementation Arrangements**

Institutional Arrangements. The institutional arrangements for implementation of the resettlement plans are as follows:

- a) The Central project office has the overall responsibility for implementing the Resettlement Policy and ensuring that all compensation, resettlement and rehabilitation activities are satisfactorily completed before providing approval for disbursement of funds for sub-projects in the case of Partial Resettlement Plans or for submitting requests for no objection from the World Bank for disbursements in the case of full Resettlement Plans.
- b) It will facilitate the discussions between the aimags and the sums regarding compensation for land acquired for the sub-projects.
- c) It will monitor the aimag project office's work to ensure that the activities are carried out in a satisfactory manner.
- d) It will be responsible for organizing the necessary orientation and training for the aimag and sum officials so that they can carry out the Resettlement Plans, consultation with PAPs and implement the payment of compensation and other rehabilitation entitlement to PAPs in a timely manner.
- e) It will ensure that progress reports are submitted to the World Bank Office in Ulaan Baatar on a regular basis.
- f) The Aimag/Provincial project office is responsible for preparing full Resettlement Plans for sub-projects which require such plans. It will ensure that the compensation in land or in cash is available at the aimag and it will implement the Resettlement Plans in a timely manner.

g) It will guide the Sum project office and monitor its work in resettlement to ensure that the activities are carried out in a satisfactory manner.

h) The Sum/District project office is responsible for preparing partial Resettlement Plans for sub-projects which require such plans. It will ensure that the compensation in land or in cash is available at the sum and it will implement the partial Resettlement Plans in a timely manner.

Implementation Schedule. A detailed implementation schedule of the various activities to be undertaken will be included in each resettlement plan.

Payment of compensation and provision of other rehabilitation entitlements (in cash or in-kind), and relocation if that be the case, will be completed at least one month prior to the scheduled start-up date of works in the respective work site.

Complaints and Grievances. Complaints and grievances related to any aspect of the resettlement plans including the determined area and price of the lost assets, will be patterned after the settlement of land disputes described in Article 56 of the *Mongolian Law on Land*. The process will be as follows:

- PAPs will present their complaints and grievances, first to the sum and then to the aimag project office; if PAPs are not satisfied with the decision, they can present their case to the central project office.
- If the project offices are not able to satisfy the PAPs, they can take their cases to court.

Supervision, Monitoring and Evaluation. Implementation of resettlement plans will be regularly supervised and monitored by the Central project office. The findings will be recorded in biannual reports to be furnished to World Bank.

### **Budget and Source of Funding**

Each partial and full resettlement plan will include a detailed budget for compensation and other rehabilitation entitlements. It will also include information on how the funds will flow as well as the compensation schedule. It will clearly state where the sources of land and fund will come from. It was agreed during consultations with sums and aimags that each sum be responsible for providing compensation ,if required, to people negatively affected by sub-projects within its jurisdiction.