



**SUSTAINABILITY**  
EAST ASIA LLC

**CENTERRA GOLD**

**SOCIAL IMPACT ASSESSMENT REPORT**

**GATSUURT GOLD MINE PROJECT**

May 2016





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## ACRONYMS & ABBREVIATIONS

ASM	Artisanal and Small-Scale Mining
CPI	Consumer price index
CRK	Citizens Representative Khural
CSOs	Civil Society Organisations
CWGP	Civil Will-Green Party
DEA	<i>Aimag</i> Department of Education
DEIA	Detailed Environmental Impact Assessment
DSEDN	Darkhan-Selenge Electricity Distribution Network
DH	Department of Health
DP	Democratic Party
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EDN	Electricity Distribution Network
GASI	General Agency for Specialised Inspections
GEIA	General Environmental Impact Assessment
GDP	Gross Domestic Product
HSES	Household Socio-Economic survey
HSUM	Health Sciences University of Mongolia
IFC	International Finance Corporation
ILO	International Labour Organisation
LLC	Limited Liability Company
MECS	Ministry of Education, Culture and Science
MEGD	Ministry of Environment and Green Development
MPP	Mongolian People's Party
MPRP	Mongolian People's Revolutionary Party
Mtpa	million tonnes per annum
MRAM	Mineral Resources Authority of Mongolia
NGO	Non-governmental Organisation
NSO	National Statistical Office
PRC	The People's Republic of China
PTRC	Population Teaching Research Center
RBA	River Basin Agency
ROM	Run of Mine
RP	Republican Party
SAM Project	Sustainable Artisanal Mining Project
SDC	Swiss Agency for Development and Cooperation
SIA	Social Impact Assessment
SLP	Sustainable livelihood project
SME	Small and Medium Enterpriser
STI	Sexually Transmitted Infection
sq.m	Square metre
TB	Tuberculosis



## GLOSSARY

<i>aimag</i>	The Provincial unit of administration in the territory of Mongolia
<i>soum</i>	Sub-province area; The second level of administration in the territory of Mongolia
<i>bagh</i>	Village; The lowest level of administration in the territory of Mongolia
<i>BIOX®</i>	The BIOX® process is a proprietary technology owned by Biomin South Africa and used under licence by a number of operating mines. The BIOX® process involves bacterial oxidation in agitated tanks for pre-treatment of refractory ores and concentrates ahead of conventional cyanide leach for gold recovery.
<i>dzud</i>	Harsh winter climatic conditions
<i>gol</i>	River
<i>in-migration</i>	To move into a different <i>soum</i> within the same <i>aimag</i>
<i>khural</i>	Administrative assembly
<i>negdel</i>	The common term for the agricultural cooperatives in Mongolia during the socialist era
<i>out-migration</i>	Migration from the <i>soums</i> and <i>aimag</i> to other parts of Mongolia, or abroad
<i>ovoo</i>	The <i>ovoo</i> (also known as <i>oboo</i> ) structures are usually dedicated to mark natural elements that have spiritual significance, such as mountain spirits, sacred trees, lakes, or springs. <i>Ovoos</i> form many functions within the community from their use as religious worship sites to sites for prayer and guidance during natural disasters (fire, <i>dzud</i> ).
<i>soum</i>	The Sub-provincial unit of administration in the territory of Mongolia
<i>uul</i>	Mountain
<i>Vulnerable household</i>	household is under the poverty line or with members of vulnerable population groups (including women, elderly, children, disabled)



## EXECUTIVE SUMMARY

### INTRODUCTION

Centerra Gold Inc. (Centerra or the Company) contracted Sustainability East Asia LLC (Sustainability) to develop a Social Impact Assessment for the Gatsuurt Project (the Project) in Mongolia. This comprised two components: first, to develop a Social Baseline Study for the Gatsuurt Project with sub-consultants, the Population Teaching and Research Centre (PTRC), and second, to develop the Project's Social Impact Assessment for its proposed construction, operations and closure in Selenge *aimag*, and the focus *soums* of Mandal and Bayangol, with specific reference to Tunkhel *bagh*.

This Executive Summary provides a concise overview of the main findings of the Social Baseline Study and Social Impact Assessment. It provides an overview of Centerra's project activities in Mongolia and the Gatsuurt Project; the social baseline and impact assessment methodology; and the key social baseline information and potential impacts associated with the Project, including: demography; social structures; economy; employment; social infrastructure; land use and natural resources; community health, safety and security; and cultural heritage. Lastly, it provides a summary of the key impacts and their mitigation measures for the Project.

### PROJECT OVERVIEW AND LOCALITY

The Gatsuurt Project is located in the Khentii Mountain range valley, 90km north of Ulaanbaatar and 14km west of Tunkhel village in Mandal *soum* of Selenge *aimag*. Figure ES 1.1 shows the Project location. Centerra owns 100% of the Gatsuurt Project, located 35km from the Company's Boroo Gold Mine (current activities include gold processing only). Gatsuurt is connected to the Boroo mine site by a 55km road which was commissioned by agreement with Mandal *soum* and completed in 2010.

The Investment Agreement between Centerra Gold and the Government of Mongolia will allow the Company to operate an open cut gold mine, with the recovery of up to one million tonnes per annum (Mtpa) Run of Mine (ROM) gold ore for a period of 10 years. Under the current plan for Gatsuurt, the Company expects to process approximately 3.6 million tonnes of ore with an average grade of 2.86 grams of gold per tonne through the existing Boroo facility in the first two and a half operating years of the Gatsuurt Project. During this time, a BIOX® facility is planned to be added to the existing Boroo facility which will be used for the processing of the remaining BIOX® ores totalling approximately 13.5 million tonnes with an average grade of 2.92 grams of gold per tonne. The BIOX® process is a proprietary technology that involves bacterial oxidation in agitated tanks for pre-treatment of refractory ores and concentrates ahead of conventional cyanide leach for gold recovery.

The Company plans to mine the ore at Gatsuurt and truck it to the existing Boroo mill to be processed. The roads connecting Gatsuurt and Boroo and mine access roads as well as mine facilities at both sites were completed in 2010.

Key aspects of the Project are:

- The operation of an open cut mining operation extracting up to one Mtpa ROM gold ore at Gatsuurt;
- Planned employment for 487 company employees, 300 mining contractor employees, 144 contractor employees for ore haulage and up to 500 contractor employees for camp services;

- Open cut mining fleet including excavator / shovels and a fleet of haul trucks, dozers, graders and water trucks;
- The de-mothballing and operation of the Boroo mill and construction of a BIOX® plant with a throughput capacity of 1.75 Mtpa;
- The construction of additional lifts for extension and operation of the existing Tailings Dam at Boroo;
- Possible upgrades and operation of water management infrastructure at Gatsuurt, including a water settlement and diversion dam and associated infrastructure at the Gatsuurt River;
- Possible installation of supporting power and communications infrastructure.

Prior studies that have been completed for the Project include a Socio-Economic-Health-Culture Baseline Study in 2011 and a Land Use Study in 2010, in addition to feasibility studies (2005 and updated in 2006), and a Detailed Environmental Impact Assessment to meet Mongolian requirements (2009, and updated in 2014).

## **STUDY PURPOSE AND METHODOLOGY**

### **Baseline Study**

The purpose of the Social Baseline Study is to collect key primary and secondary information that can be used as reference points for describing the current social and economic situation in the Project Area, as well as to provide the base information for the development of the Social Impact Assessment.

The baseline study collected data at four levels - *aimag*, *soum*, *bagh* and citizen. The *aimag*, *soum*, and *bagh* level data show key economic and social indicators of Selenge *aimag*, and Bayangol and Mandal *soums*, with specific reference to Tunkhel *bagh*. The baseline study employed a Household Questionnaire, Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) for primary data collection and analysis. The data gathered using the Household Questionnaire was processed using Statistical Package for the Social Sciences (SPSS). KIIs and FGDs with local citizens, *soum* officials, business people and civil society representatives were used to explore socio-economic themes in further detail. A large amount of secondary data was collected and analysed to describe the current socio-economic conditions of the Project Area.

### **Social Impact Assessment**

The objective of the Social Impact Assessment (SIA) is to identify and analyse the potential impacts of the proposed Gatsuurt Project, and to recommend initiatives to realise sustainable development opportunities, as well as to mitigate the negative impacts. The SIA considers the Project Area encompassing communities potentially impacted by:

- Mining and associated activities at the Gatsuurt site
- Haul truck and other Project vehicle movements between Gatsuurt and Boroo, and
- The construction and operation of additional processing facilities and equipment at the existing Boroo site.

The scope of this SIA is to assess the impacts associated with the construction, operation and closure of the Project, and develop and propose mitigation to be implemented. In this way, impacts can be prevented, reduced or maintained to an acceptable level, and the positive impacts can be further enhanced. The SIA intends to assist CGM to develop a clear understanding of the impacts, risks and mitigation options, including through meaningful participation from relevant and interested stakeholders. The assessment of potential socio-economic impacts, risks and outcomes (both to the company and the community) of the Gatsuurt mine development, informs a comprehensive social risk mitigation plan which will comprise Social Management Plans (SMPs) and a Stakeholder Engagement Plan (SEP), incorporating a grievance management process. A Social Management Framework will be prepared as part of the disclosure documents and detailed Social Management Plans will be prepared prior to Construction and will become part of the Project's Environmental and Social Management System (ESMS). Social management plans include: Worker Health and Safety; Emergency Response; Stakeholder Engagement; Grievance Management; Community Development; Cultural Heritage; Natural Resource Management; Employment and Training; Community Health, Safety and Security; and Procurement and Supply Chain.

The assessment methodology comprised the following steps, and indicates where in this report further detail can be found:

**Scoping**

Identification of sensitivities and activities with the potential to contribute to or cause potentially significant impacts to receptors and resources, based on the Project definition described in Chapter 2. Project planning, decision-making and refinement of the Project description evolve through the assessment process as a result of the development of the Project and in response to the identified impacts.

**Stakeholder Engagement**

Continues throughout the assessment to ensure that legislative requirements are met, stakeholder concerns are addressed in the Project design and assessment and sources of existing information and expertise are identified, as described in Chapter 5.

**Collection of Baseline Data**

Establishing and reviewing the existing conditions and legislative requirements pertaining to the Project area and its surrounds and highlighting receptors and resources sensitive to potential impacts, as described in Chapter 6.

**Assessment of Impacts and Mitigation**

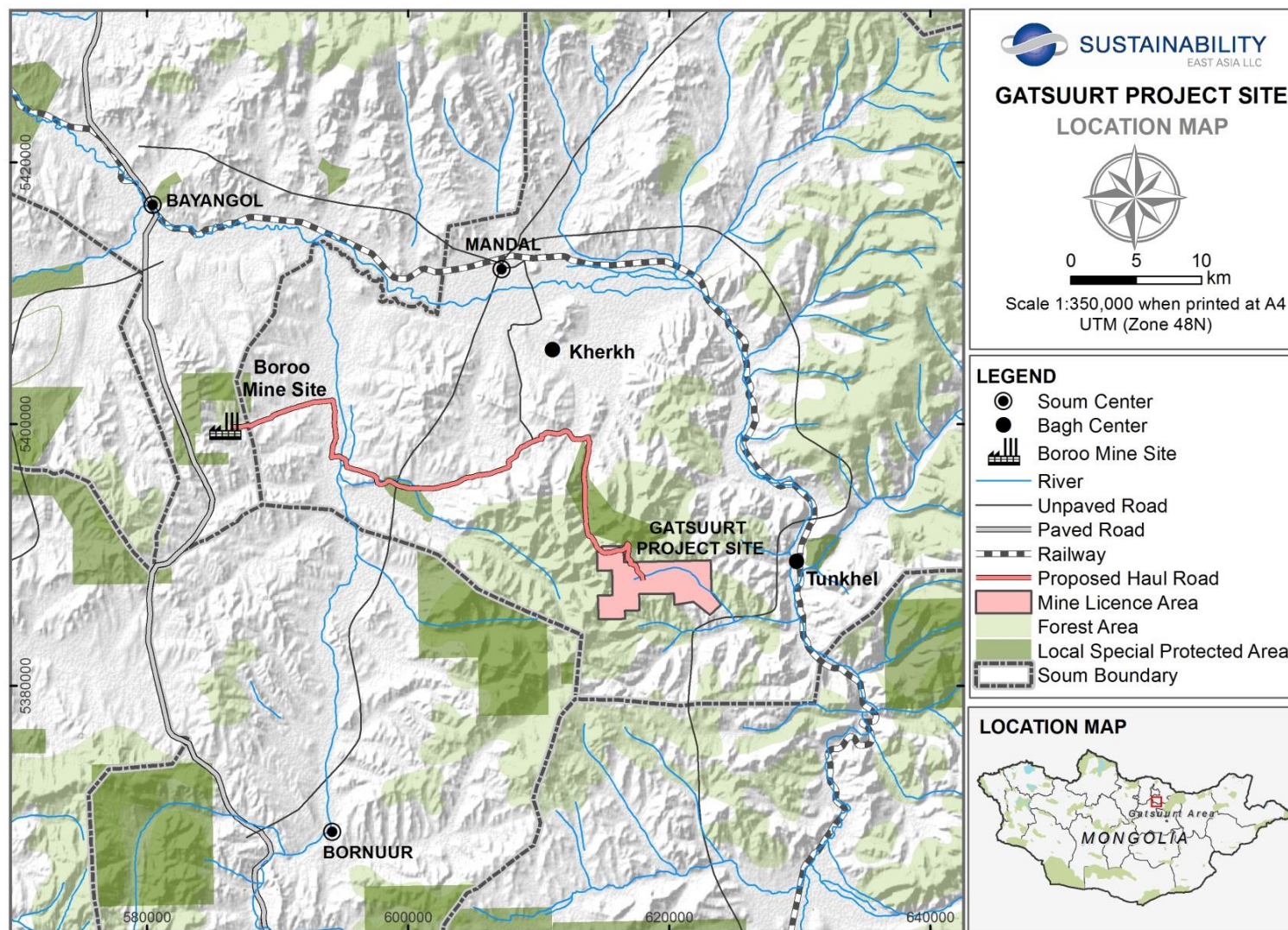
Predicting and evaluating the likely extent and significance of the potential impacts on identified receptors and resources according to defined assessment criteria; to develop and describe measures that will be taken to avoid, minimise, reduce or compensate for any predicted adverse effects, or to enhance positive impacts; and to report the significance of the residual impacts that remain following mitigation, a stage described in Chapter 7.

**Integration**

Developing a systematic approach for incorporating mitigation actions into the Project, taken forward as commitments with specified timing and responsibilities, typically achieved through Management Plans.

**Reporting**

Presentation of findings of the impact assessment, including a Non-Technical Summary.



**Figure ES 1.1 Location Map of the Gatsuurt Project**



## SOCIAL SCOPING ISSUES IDENTIFIED

### DEMOGRAPHY

The demographic Section describes the main characteristics of the population, the age-gender structure, urban and rural population dynamics, migration, literacy, education, ethnicity and religion. The key demographic themes and issues identified during the conduct of the Social Baseline Study include:

- In discussing migration issues during KIIs with *soum*-level officials, the decline in migration to Selenge *aimag* is attributed to the difficulties experienced by migrants in obtaining access to pastureland and the fact that existing land is degraded through overgrazing and therefore a less attractive proposition for migrants. In contrast to the statistics (which show generally declining levels of migration) and to officials' views, FGD participants expressed the belief that in-migration of herders is increasing. So, while actual migration is declining, there is a perception at the ground-level that there is an influx of migrant herders, who are viewed as a key source of pastureland degradation and land use conflict.
- The key challenges confronting Mandal *soum* due to its large population of youth between the ages of 20 and 24 is driving vocational educational, economic opportunities and work places for young people. In Bayangol *soum*, the key challenge based on its large population of young children is providing sufficient educational facilities, especially pre-school, primary and secondary school, as well as primary health services.
- This key risk associated with an increasing divorce rate in Mandal and Bayangol is the associated increase in female-headed households. Indeed, the statistics show that in Mandal *soum* female headed households increased from 134 in 2012 to 167 in 2013. This pattern is also witnessed at the *bagh* level, where Tunkhel *bagh* recorded an increase of 11 female headed households in the same period.
- The highest percentage of the population with no education at all is seen in Tunkhel *bagh* (11%). This is a key issue for Tunkhel *bagh*, as Tunkhel's general levels of education lag behind those of Kherkh *bagh*, and Mandal and Bayangol *soums*. Poor access to education has long-term ramifications, not only on the lives of children themselves, but on poverty eradication, human development and economic progress of broader communities. Tunkhel *bagh* citizens may therefore be less equipped to take advantage of any economic / employment opportunities presented due to the lagging education indicators.
- In December 2010 the Prime Minister of Mongolia approved the "Procedure for the regulation ASM activities". This procedure includes that full authority for regulation of any land use disputes related to ASM activity is given to the local Government body through establishment of agreements with relevant stakeholders. Tripartite agreements can be made with the commercial mining licence holder and relevant ASM cooperative group(s), or dual agreements can be made directly between the *soum* Government with the ASM cooperative(s). Selenge *aimag*'s local Governments have started to regulate the ASMs. This has resulted in the establishment of ASM cooperatives in the mining focused *soums*. At the time of the conduct of the Socio-economic Baseline Study, 60% of Mandal *soum* households or 4,228 family members

were involved in ASM, and around 228 soum residents were members of the 30 officially registered ASM cooperatives (3 big NGOs, with around 30 to 100 members and 27 small cooperatives with 3 - 10 members). The number of ASMs in Mandal soum is significant, however, establishment of tripartite agreements between commercial miners, soum governments and ASM cooperatives are not always reached. Refer to Appendix B for additional context and analysis on ASM in relation to the Gatsuurt Project.<sup>1</sup>

## **SOCIAL STRUCTURES**

This Section presents the social structures, including changes, trends and current circumstances thereof at a national level in comparison to Selenge *aimag*, Mandal and Bayangol *soums*, and Tunkhel *bagh*. The content of the report specifically addresses the topics of social development, political history, socio-political involvement of citizens, and voters' evaluation of elected political leaders, formal and informal decision making process, and the current position of status of institutions.

The key issues and themes that emerged in the course of investigating social structures included:

- Overall, levels of trust in public institutions were reported by communities surveyed during the Baseline data gathering to be low due to low public satisfaction with the activities of public organisations. In both *soums*, the *soum* Citizens Representative Khural (CRK) and *soum* Government have greatest overall levels of trust while political movements and NGOs have the least.
- *Baghs* in the Project area face a number of challenges, including the perception among *bagh* citizens that their voice does not count or is not heard in decision-making, in addition to poor information dissemination by *bagh* CRKs, which further alienates *bagh* constituents and impedes their ability to participate meaningfully in decision-making.
- Civil Society Organisations (CSOs) indicate that the key challenges they face include inadequacy of funding, poor capacity of personnel, a lack of involvement by citizens, and unavailability of premises/offices from which to conduct their work. These challenges mean that the majority of organisations fail to operate successfully as they do not have the capacity to deliver on their remit, manage funds, or develop as effective organisations.
- A key issue in Tunkhel *bagh* is its status as a *bagh* and the desire for this to be changed to *soum* status. A key reason specified for this change is that Tunkhel *bagh* has a population of around 3,500 which is larger than many *soum* populations in Mongolia. If Tunkhel became a *soum*, this would have implications from a budget revenue perspective (including potential allocation of resource revenues from the Gatsuurt Project). As a *soum*, Tunkhel would receive a bigger share of the budget. *Baghs* have no power over budget expenditure and allocation and becoming a *soum* would allow Tunkhel greater autonomy. Tunkhel *bagh* CRK voted in

<sup>1</sup> The ASM context changed from when the social baseline study for the Gatsuurt Project was conducted in March – April 2015 compared to September 2015 when ASM manifested in a different form. Therefore, the decision was made to substantively address the emergent ASM issue separately (in Appendix B) by further analysing the context / baseline and the impacts thereof, and providing management measures and company commitments to effectively address the issue. Management measures are also captured in the Social Management Plan for the Gatsuurt Project.

support of attempting to become a *soum*, however, this motion was pushed back at the *soum* CRK level and as such, has not progressed any further at this stage.

- Traditional gender roles are still dominant in the Project area, even though the socio-economic role and contribution of women has increased. Mandal *soum* respondents are more open to men participating in household activities that are traditionally seen as the women's domain (e.g. shopping, cooking and serving, washing, caring for children, and old and sick people). In contrast, the majority of Bayangol *soum* respondents indicated that the above mentioned household activities are not appropriate for men/husbands to do. The differences in opinion between the two *soums* may be attributed to the larger urban population in Mandal *soum*, where gender roles may be less fixed.
- 62.8% of respondents in Mandal *soum* and 60.6% of Bayangol *soum* respondents are not aware of welfare projects and programs implemented in their *soum*. The program with the highest level of awareness is the "restocking livestock program" run by the Government, with over a quarter of respondents in Mandal and Bayangol aware of it.
- Of the total respondents in Mandal *soum*, 50.6% demonstrated positive attitudes to immigrants from different *soums* and *aimags*, while in Bayangol *soum*, 44.1% of respondents replied that they have a negative attitude to the immigration and settling of outsiders. When respondents were asked to provide a reason for answering positively, they indicated that this is because immigration will introduce new people into the *soum* and increase its population and that outsiders will do a lot for the *soum*. The reasons behind negative responses included the decreased availability of resources such as pasture and water, and that outsiders are dangerous and will decrease job opportunities for locals.

## ECONOMY

This Section elaborates on the local economy in Selenge *aimag*, Mandal and Bayangol *soums* including the subjects of the local budgets; pricing; development of economic sectors such as agriculture, industry, mining, and livestock; emerging markets; living standards; and, household incomes.

The key themes that emerged out of the primary and secondary data analysis included:

- More than 85% of households surveyed indicated that steep price inflation of goods and services is a key concern. This is combined with the poor quality of goods and the inability to access markets, compounding price inflation issues. This is a particular issue for Tunkhel *bagh* due to its remoteness from the *soum* and *aimag* centres.
- Households are frustrated and limited by their lack of access to professional assistance, knowledge and technology on effective crop and vegetable farming methods, which may assist them in being better farmers and in obtaining higher yields.

- Livestock insurance coverage is low in Selenge *aimag*. Only 3.4% of total livestock in Selenge *aimag* are covered by insurance, while the coverage is 4.7 % for Selenge *aimag's* herder households. Low insurance coverage may be explained by a general perception among herders that due to the good pasture in Selenge *aimag* compared to other areas in Mongolia, they need not worry about livestock insurance (or potential impacts of *dzud*<sup>2</sup>). There is also a general lack of awareness of insurance and the benefits thereof (in the case of *dzud*, fire, drought or natural disaster, and so on.).
- Household survey responses varied on their opinions of the levels of corporate social responsibility in mining. More respondents in Bayangol, than in Mandal *soum*, agreed than disagreed that mining offers better salaries and so improves livelihoods. The responses from herders compared to urban households were approximately the same (about half agreeing compared to disagreeing with the statement). These responses provide further evidence of a lack of awareness about mining and the potential benefits and risks associated with the sector. They also indicate that there are a large number of “fence sitters” in the Project area, whose opinion may be readily swayed either way, or, who do not wish to publicly voice their opinion.
- Households in the Project area are increasingly living on credit, and struggling to pay back their loans. The low savings and deposits levels in the *aimag* compound this trend.

## EMPLOYMENT

This Section discusses employment in the Project area, including the labour force and labour participation, employment and unemployment, key industry employees, working conditions, and salary and earnings.

Some of the key themes associated with employment are:

- Since 2012 the employment rate in Selenge *aimag* has dropped consistently. It fell from 94% in 2012 to 91% in 2013 and further to 89.8% in 2014. There has been constant growth in public sector employment and consistent with the general downturn in the Mongolian economy, employment in the private sector has declined. Private sector employment is the most common in Mandal *soum*, reflective of the major industries there including a distillery, agriculture, and cropping.
- The household survey indicated that 51.6 % of all respondents are engaged in income earning activities, while at the *soum* level the number is 43.3% for Bayangol and 56.7% for Mandal *soum*. More than 50% of the total respondents in Tunkhel and Kherkh baghs are engaged in income earning activities – formal and informal. The breakdown analyses per *soum* demonstrate that in Bayangol *soum*, 67.5% of the total respondents are self-employed, 21.4% work for private entities and the remaining 10.3% work for government organisations while in Mandal *soum*, 38.9% are self-employed, 38.9% work for private entities and the rest 17.2% work for government entities and / or the public sector
- With respect to job creation, the number of new opportunities in Selenge *aimag* dropped by 8.2% between 2013 and 2014. This was mirrored in Mandal *soum*, which experienced a drop

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<sup>2</sup> Harsh winter climatic conditions.



of 3.3%. Bayangol *soum*, on the other hand, experienced a 17.7% (93 new jobs) increase in new positions created in the same period. In contrast to the above, participants in FGDs believed that there is more job creation in Mandal than in Bayangol, possibly due to Mandal having a bigger economic/urban centre which drives the perception that there is more economic activity here than in Bayangol.

- Unemployment is a significant problem in the Project area (increased by 67.4% between 2012 and 2014 in Selenge *aimag*). Unemployment is most significant among younger people in Selenge *aimag*, most of whom are educated. Youth unemployment and lack of opportunity is arguably the biggest concern to the community in Tunkhel *bagh*.
- Related to the high levels of unemployment in the Project area is the problem of under-employment. KII and FGD participants indicated that many of the available jobs are temporary and / or seasonal and therefore mean that people are unable to draw a reliable income.
- Most people have a secondary education in Bayangol and work in the informal sector in herding, whereas in Mandal people are more likely to work for companies, specifically in trades and services or in the agricultural sector.
- Income diversification strategies are an important way in which households manage risk in the Project area. It was found that most households engaged in multiple activities to supplement their incomes and feed their families. Herders indicated that they feel unable to diversify out of herding due to their lack of skills, industry experience, and English language skills appropriate to work in the mining (and other) sectors.
- Monthly average salaries are lowest in Tunkhel *bagh*, whose population is also the least educated in the of Project area.

## **SOCIAL INFRASTRUCTURE**

This Section of the Social Baseline Report describes the social infrastructure in the Project area, including the development thereof, the current condition and adequacy of existing infrastructure, and the supply and consumption of social infrastructure. The content focuses on education, energy, water supply and waste water management, sanitation and solid waste management, transport infrastructure, and communications and postal services in the target *soums* and *baghs* of Selenge *aimag*. Health infrastructure is discussed under community health, safety and security.

The key themes identified include:

- In both Mandal and Bayangol, the kindergarten attendance rate is around 87% of the population, with the remaining 13% of children being turned away due to the facilities being at capacity.
- In academic year 2014-2015, the transition rate from secondary school (grade 9) to high school (grade 10) declined. The female student transition rate is higher than the male rate. Transition rates are an influential indicator for gender disparity in further education acquisition and employment opportunities later on in life. As more females are enrolled in secondary education, they will be more likely to obtain further education (tertiary and vocational) in the future and may have better job prospects and earning potential.

- There is limited TVET education availability in the Project area and the facilities that do exist provide training for a predominantly male student population in traditionally male professions. At the *aimag* level, there is only one vocational training centre, which operates out of Mandal *soum*. This TVET has a particular focus on the construction sector, and these occupations tend to be male-dominated professions. Most female students are studying to be chefs, dress-makers, civil plasterers, hair-dressers and farmers, whereas men are predominantly studying to become general mechanics, heavy truck mechanics, plasterers, welders and plumbers.
- The main sources of drinking water in the Project area are wells<sup>3</sup>, rivers and springs, and mobile distribution points. Household drinking water supplies are quite similar between different user groups (herders/settled householders; *soum/bagh* or rural households), with most households using protected wells as their major source. Bayangol sources more water from unprotected wells (at a higher risk of contamination than protected wells) than Mandal *soum*.
- The majority of households residing in *soum* centres consume energy from the central energy system, while 21.5% of surveyed households in Mandal *soum* and 39.9% of surveyed households in Bayangol *soum* use renewable energy. Solar systems are prevalent across all surveyed areas, in particular, for herders and those in Bayangol. Tunkhel was the exception at the *bagh* level with a greater reliance on the local diesel system compared to other *baghs*. 19.5% of surveyed households in Mandal *soum* also reported that their household energy resource is based on the local diesel system, which only works in the winter months between October and April.
- Heat supply is an essential basic service in Mongolia, but it is not accessible to everyone, in particular, people in rural areas in both Mandal and Bayangol *soums* who are predominantly *ger*-dwellers. The current heating system in *soums* mainly consists of (i) small stoves; and (ii) centralised and decentralised coal fired boilers<sup>4</sup> used for heating in schools, dormitories, hospitals, local government office buildings and some apartments. The majority of heating in households is independent of the centralised grid.
- More people in both Mandal and Bayangol make use of TVs than radios in the Project area. This indicates that households in the Project area are primarily receiving information, news, and entertainment from TVs and has implications for the most effective means of communication with communities in the Project area.
- Selenge *aimag* predominantly uses vehicle and railway for public transport, with rail transport the most popular form of transport. Railway transport provides passenger transport between Ulaanbaatar city and Selenge *aimag* by passing through the *soums* centers of Bayangol and Mandal as well as Tunkhel *bagh*.

<sup>3</sup> Including both protected and unprotected wells. Protected wells are those which have protection from human and animal contamination (for example, by a cover).

<sup>4</sup> Decentralised coal fired boilers are based in the *soums/baghs*, whereas centralised coal fired boilers are based in UB, and other major cities (Erdenet and Darkhan).

## LAND USE AND NATURAL RESOURCES

This Section presents discusses land use, land ownership and possession, and the use of natural resources in the Project area. The description is situated at the *aimag* level and homes in on the key issues experienced in Mandal and Bayangol *soums*, and Tunkhel *bagh* in particular.

The key issues and themes associated with land use and natural resources in the study area are as follows:

- A key issue in Selenge *aimag* is overgrazing. The primary reason behind overgrazing and the accompanying pastureland degradation is that existing herders and livestock owners have generally increased the number of animals they own (an approximate increase of 14% between 2011 and 2014). In 2013 in Mandal *soum* the number of livestock increased by 5%, and in 2014 the number of livestock in Bayangol *soum* increased by 9% (anecdotal data indicates a similar increase in 2014 for Mandal *soum*). Contrary to the common perception expressed in FGDs, pasture degradation and overgrazing is less likely occurring due to in-migration, than existing herders increasing their livestock numbers, with migrant herders providing a perceived justification for the problem, as formal in-migrant numbers (and the livestock they bring) are not significant.
- Overgrazing problems in both Mandal and Bayangol *soums* has led in some areas to land use disputes among herders, and between herders and crop farmers. The frequency of pasture disputes varies. A third of respondents indicated monthly disputes. Mandal *soum* has the highest frequency of pasture use disputes, which can be explained by the smaller available pasture area in the *soum* (compared to Bayangol) and existing pasture degradation which has decreased the livestock carrying capacity. Just over 30% of herder households report that they have seasonal land use conflicts, usually with hay makers and crop farmers.
- Most herders have their own winter shelter and spring grazing area, even if these are not always formally registered, and so, many do not pay land use fees. This has implications for the resultant available funding that can be reinvested into environmental improvements. Regulation requires 15% of land use fees are spent on environmental improvement, so the lack of registration means there is less funding available for land improvements.
- The majority of survey respondents stated that there are no disputes between local communities on water use. The infrequency of disputes and general perception of equality of access to water resources in the Project area illustrates that water scarcity is not currently a key issue however, the potential impact of mining on water community resource availability and significantly, quality, is a key community concern (as indicated by over 50% of respondents when questioned on the risks associated with mining). Indeed, most household survey respondents cited that their drinking water quality is currently sufficient (59 – 74% in agreement), while the remainder of respondents cited insufficient water quality due to water hardness (in Bayangol *soum* and its *baghs*), and due to mining activities (in Mandal *soum* and Tunkhel *bagh*). This is an indication that water pollution is increasingly likely to become a key community concern particularly in Tunkhel *bagh*, regardless of any actual impacts.

## COMMUNITY HEALTH, SAFETY AND SECURITY

This Section presents the baseline context related to community health, safety and security in the Project area. The topics covered in this section include health care services and standards, the public health profile, and crime and social order (including human rights). The key themes associated with community health, safety and security in the Project area include:

- Poor availability of health care personnel is a key issue in the Project area. Mandal *soum* has a significant shortage of doctors, but a relatively better supply of nurses, while Bayangol *soum* lags behind both WHO indicators for doctors and the national average for nurses.
- Household survey respondents highlighted that the key problems with health services are (in order of importance): the poor quality of health care that they receive; no time to go to the hospital; and that the distance to the hospital is too far away.
- The main causes of mortality in the Project are cardiovascular disease and cancer. This is common with mortality trends in Mongolia. People registered with an infectious disease at the *aimag* level have increased by 6.8% from 2014. The most common infectious diseases are sexually transmitted infections (STIs). Selenge *aimag* has highest rate of tuberculosis (TB) in Mongolia. This may be explained by the fact that Selenge *aimag* has a significant number of artisanal and small-scale miners (ASMs), many of whom who work underground in confined spaces, which facilitates TB transmission from infected persons to others of vulnerable health status.
- A key issue raised in FGDs in Tunkhel *bagh* was the negative community health impacts of dust generated from the unsealed road. Participants in FGDs cited that the dust increases their risk of diseases of the respiratory system. It was not possible to establish whether there is, in fact, a higher incidence of respiratory disease in Tunkhel and if so, whether this is due to dust from the road. It is also important to note that a key desire of many of the Tunkhel *bagh* residents is for a paved road to be built to the remote *bagh*. The issue of dust and the health impacts thereof has complex motivations that for consideration in the broader discussion of *bagh* development, especially in light of sensitivities to the development of the Gatsuurt mine.
- In 2012-2013, the number of people killed due to crimes against the rules of traffic safety and use of motor vehicles increased by 18.9% in Mongolia. Furthermore, in the first 10 months of 2014, this number increased by 26.7% compared to the same period in 2013. The main causes of traffic accidents in Bayangol are driving on the wrong side of the road and speeding, while in Mandal the main causes of accidents are drunk driving, speeding and failure to stop the vehicle in slippery conditions.
- The majority of vehicles travelling along the Gatsuurt haul road are light vehicles, and the main causes of traffic accidents in the Project area are due to risky driving practices. Road safety concerns are heightened when one combines the current high levels of risky driving practices primarily in light vehicles with the fact that there will be high volumes of haul trucks along the road in the future. Moreover, police statistics indicate that the major crimes in Selenge *aimag* are those related to traffic safety and the use of motor vehicles. It is clear that road/traffic safety and vehicle use from a public safety and crime perspective are currently a major problem in the Project area, without the added complexity of haul trucks along the Gatsuurt haul road.

It was unable to be established whether there are any Government programs to mitigate risky driving practices and raise awareness of road safety in the Project area. The Boroo Project has conducted a road safety campaign in the past.

- A key concern expressed in a Mandal *soum* KII was in regard to road safety in Tunkhel *bagh*, in light of the haul trucks on the road during the Gatsuurt Project operation. Respondent's opinions varied on the impacts of further improving / paving the haul road, relating to dust generation, speed and accidents.
- Alcohol is a key influence on crime. According to police data of May 2015, 33% of the total registered crimes were committed under the influence of alcohol. Just under half (48%) of crimes registered in Mandal *soum* are crimes against human life and health, while one third (36%) of Bayangol *soum*'s crimes are related to traffic safety and the use of motor vehicles, which may be explained by the location of the *soum* along the international, paved road between Ulaanbaatar and the Russian border.
- The community's trust in local government agencies and the police is very low, with at least 60% of all respondents from households at the *soum*, *bagh* and household levels all rating local crime-fighting capacity as "average and insufficient".
- At the *soum* and *bagh* level, crimes against human rights are not commonly reported. This may be attributed to a low awareness at this level of what human rights are and how these rights apply to each individual, and so, how rights may be compromised. Most respondents from urban areas agree that it is mainly children's rights that are breached, and thereafter women's rights. Domestic violence against women is perceived to be higher in Tunkhel *bagh* compared with other places surveyed. The Mandal *soum* crime profile suggests the majority are committed against women in apartment areas, with alcohol involved. Child labour was also reported by over 30% of respondents as a key issue Bayangol *soum*, compared to slightly over 20% in Mandal *soum*. Child labour most often takes the forms of herding (unpaid by households or family members), ASM or wage workers of forestry companies.

## CULTURAL HERITAGE

This Section addresses cultural heritage baseline conditions in the Gatsuurt Project area. The types of cultural heritage considered in the baseline include: Archaeological sites, Monuments, and items of Intangible Cultural Heritage (ICH) value.

This Section should be read in conjunction with the *Intangible Cultural Heritage Study Report* prepared for the Gatsuurt Project. As such, this Social Baseline Report provides a summary of the key findings of the Intangible Cultural Heritage Study Report.

The key issues and themes that emerged in relation to cultural heritage include:

- Both Mandal and Bayangol respondents indicated that the major source of information on cultural heritage is relatives and family members. The second major source of information on cultural heritage is school and informal training. That most people are obtaining knowledge and information on cultural heritage from family is consistent with the strong oral history traditions in Mongolia, however it may also point to the lack of capacity (both professional and physical) of local institutions to meet the information and educational needs of communities.
- There are 161 cultural heritage workers staffing cultural heritage institutions in Selenge *aimag*. According to the provision of professional staff at the *aimag* level, cultural centres suffer from a lack of specialist skills. The scarcity of technically and professionally trained cultural heritage specialists (particularly those with tertiary qualifications) is a key issue faced by Mongolia, not only Selenge *aimag*.
- Worship of Noyon *uul* (mountain) is a key intangible cultural heritage practice in the Project area. According to households living in the area, worship of the mountain occurred before the Socialist era, but was then forbidden during communist rule (1920s to 1990s). The idea of worshipping the mountain once again was initiated during the transition period. Worship rituals are performed at various *ovoos*<sup>5</sup> located on Noyon Mountain. Further, shamans also use the area to worship several times a year, and fieldwork in the area revealed that there are also taboos and myths associated with the mountain.
- Studies have identified sites and artefacts (approximately 200 artefacts identified since 1925) in the vicinity of the Project. These are mostly in Mandal *soum* around two locally protected areas: Zuun Modnii *gol* (river) and Noyon *uul* sites. There are 2 Nationally Protected Sites (Tuijin Nars and Khan Khentii classified special state protected area) and 30 Locally Protected Sites (two of which intersect with the Gatsuurt road, which existed as a public road prior to the Project being developed: Zuun Modnii *gol* and Noyon *uul*). Sites are in varying states of protection and preservation.
- Noyon *uul* special protected area is located approximately 7km from the Gatsuurt Project mine site and outside of the Mine License Area. The location of the Gatsuurt Project mine site does not impede public access to Noyon Uul, or impact on the existing use of worship sites at Noyon *uul* in any other manner. Furthermore, the road does not directly disturb the worship sites, which are currently being accessed from this road by foot.
- Respondents in the Project area are moderately engaged with local cultural heritage objects and practices. When asked how cultural heritage benefits their *soum/bagh*, 42.3% of Kherkh *bagh* and 36.7% of Tunkhel *bagh* participants answered, "local cultural heritage is significantly beneficial for the *soum*". On average, the majority of respondents indicated that they do not receive any benefit at all from cultural heritage. This was felt particularly in Bayangol *soum*, where over half of residents feel they do not receive any benefits from cultural heritage (51.1%), compared to 30.7% who feel they do. Benefits from cultural heritage include enhancement of *aimag* and *soum* reputations based on their cultural heritage attributes and

<sup>5</sup> The *ovoo* (also known as *oboo*) structures are usually dedicated to mark natural elements that have spiritual significance, such as mountain spirits, sacred trees, lakes, or springs. *Ovoos* form many functions within the community from their use as religious worship sites to sites for prayer and guidance during natural disasters (fire, *dzud*).



feelings of satisfaction among communities, as well as more tangible benefits such as revenue generated by tourism and the small business opportunities generated.

## **KEY BENEFITS, IMPACTS AND MITIGATION MEASURES**

Following scoping and impact assessment, the areas of possible impact that presented the greatest risk to the Project and its social interactions and social performance, including potential threats to human life are as follows:

- Increased risk to workers of accident, injury or fatality in working on a new mine site
- Risk of unplanned emergency events impacting workers, emergency responders, Government agencies and communities in the Project area
- Threats to human health and safety of communities from access to mining facilities at Gatsuurt or processing facilities at Boroo
- Risk of road accidents, incidents or fatalities on the public road between Gatsuurt and Boroo site, between Project and public road users.

These potential impacts remain the highest potential residual significance after the application of mitigation measures.

ASM emerged as a key issue subsequent to the development of this report. See Appendix B for additional context, analysis and management measures of this issue.

Mitigation measures have been proposed to respond to all of the identified potential impacts, combining a combination of management controls (such as the development and implementation of a Management Plan, and internal procedures), engineering controls (such as signage and passing lanes on the road), and engagement with stakeholders (to inform, enable participation and collaboration to design and deliver joint solutions). Opportunities for enhancement of beneficial impacts are also available, including to strengthen delivery of sustainable community development initiatives in the Project area.

Key benefits of the Project include:

- Creation of direct and indirect employment opportunities for the life of the mine;
- Induced job creation from service and supply jobs to meet demands from the resident workforce and the mine itself during construction and operations phases;
- Increase in local procurement opportunities in particular during operational phase;
- Increased revenue to the State and aimag budgets through taxes, royalties and other payments, in particular during the construction and operational phases; and
- Strengthened and sustainable community development initiatives implemented in partnership between the Project and key stakeholders.

The summary of Impacts and Mitigation measures for those potential impacts of moderate residual significance are as follows, here showing the potential impact, mitigation measures and residual significance, and relevant Social Management Plans, policies and procedures:

**Table ES 1.1 Summary of Impacts, Mitigation/Enhancement and Residual Significance**

Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
<b>Employment (EBRD PR 1, 2)</b>					
Risk of unmet community expectations for jobs due to lack of suitable candidates	Definite Direct negative Medium term Extensive range	Moderate	<ul style="list-style-type: none"> <li>Define and implement local hiring preference policy through SMPs.</li> <li>Ensure eligibility for 'local hiring preference' through a specific timeframe of residency in the Project Area.</li> <li>Communicate employment estimates, timeframes and skills requirements clearly to the community on a continuous basis through CROs.</li> <li>Invest in skills training to facilitate employment of local population through cooperation with training partners, to supplement on-the-job training. Engage with training providers on types of skills needed and timeframes to support skills requirements of the Project.</li> <li>Consider current / former Boroo staff in supervisory roles (as appropriate), including for training of new employees.</li> </ul>	<ul style="list-style-type: none"> <li>Employment and Training MP</li> <li>Contractor MP</li> <li>Social Management and Monitoring Plans (SMMP)</li> </ul>	Moderate
<b>Health (EBRD PR 1, 4)</b>					
Increased risk to workers of accident, injury or fatality in working on a new mine site	Possible Direct, major negative Short term Extensive range	High	Implementation of existing relevant measures from Boroo to Gatsurt, including: <ul style="list-style-type: none"> <li>Provision of induction, training and supervision in the first months of employment, for both staff and contractors, as well as periodic refresher training.</li> <li>Implementation of training procedures and verification of competency to become familiar with the site and its hazards, as well as the hazards within the task and site's method to complete the task</li> <li>Conduct risk assessments for new tasks, systems of work and plant</li> <li>Contractor management requirement of a minimum level of OHS to be met through the contract duration, with action/penalties in response to any breaches</li> <li>Implementation of prequalification / screening processes prior to contracting</li> <li>Contract Performance monitoring including of inductions, daily safety toolbox meetings, monthly contractor management meetings on safety</li> <li>MSDS in place for new materials, training for staff, including retraining and new training for BIOX® facility, with SOPs to be developed for the BIOX® facility</li> <li>Emergency response plan in place, with ongoing training should it need to be implemented.</li> </ul>	<ul style="list-style-type: none"> <li>Induction Plan</li> <li>Employment MP</li> <li>Worker Health and Safety MP</li> <li>Contractor MP</li> <li>H&amp;S Monitoring Plan</li> <li>Procedures, incl. Permit to Work</li> </ul>	Moderate
Risk of unplanned emergency events impacting workers, emergency responders, Government agencies and communities in the Project Area	Unlikely Direct, major negative Short to medium term Small to intermediate range	High	Implement the existing relevant measures from Boroo to Gatsurt, including: <ul style="list-style-type: none"> <li>Review the Crisis Management Plan and Emergency Response Plan, already in place by CGM, for relevance to the Gatsurt context.</li> <li>Undertake engagement with emergency response organisations on emergency response issues.</li> <li>Continue application of the International Cyanide Management Code (ICMC) for the manufacture, transport and use of cyanide to ensure good international industry standards are applied and maintained in how the company procures, transports, stores, uses, disposes of cyanide.</li> </ul>	<ul style="list-style-type: none"> <li>Emergency MP</li> <li>Hazardous Materials MP</li> <li>Community Health, Safety and Security MP</li> </ul>	Moderate
Threats to human health and safety of communities from access to mining facilities at Gatsurt or processing facilities at Boroo	Probable Direct, major negative Long term Small range	High	Implement the existing relevant measures from Boroo to Gatsurt, which include: <ul style="list-style-type: none"> <li>Exclusion of public from active mining areas to minimize impacts of blasting.</li> <li>Use of security personnel to ensure no unauthorized public access.</li> <li>Signage at all entrance/exist points and periodically on boundaries/fenced areas.</li> <li>Regular stakeholder engagement program to notify of key safety issues on, around and offsite.</li> <li>Outreach program to periodically bring visitors for site visits in a controlled and safe manner.</li> </ul>	<ul style="list-style-type: none"> <li>Health and Safety MP</li> <li>Stakeholder Engagement Plan</li> <li>Community Health, Safety and Security MP</li> </ul>	Moderate
Risk of road accidents, incidents or fatalities on the public road between Gatsurt and Boroo site, between Project and public road users	Definite Direct, Major Negative Intermediate scale Long term	High	<ul style="list-style-type: none"> <li>Development and implementation of a Traffic Management Plan, effective for direct and indirect employees, comprising strategies to manage vehicles and equipment during the execution of all phases of the Project.</li> <li>Develop and implement Road safety/traffic safety campaigns.</li> </ul>	<ul style="list-style-type: none"> <li>Community Traffic MP</li> <li>Stakeholder Engagement Plan</li> </ul>	Moderate



Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
			<ul style="list-style-type: none"> <li>Minimise the potential for speed-related accidents / interactions between Project and public traffic by retaining the gravel road for the duration of the Project.</li> <li>Design and implementation of specific road engineering controls to minimise the potential for incidents.</li> <li>Implement existing Boroo project driver controls minimise the potential for incidents.</li> <li>Apply reasonable efforts to work with the Government of Mongolia to minimise potential incidents.</li> <li>Engagement with the community to minimise potential incidents.</li> </ul>	<ul style="list-style-type: none"> <li>Health and Safety MP</li> </ul>	
Creation of direct and indirect employment opportunities for the life of the mine	Definite Direct positive Long term Intermediate range	-	<ul style="list-style-type: none"> <li>Apply a fair and transparent recruitment process as applied at BGC.</li> <li>Engage with local training partners that deliver curricula which will enable local students to better meet the needs of the Mongolian mining industry.</li> <li>Provide updated materials to CROs to engage with communities including potential employees and training partners.</li> <li>Apply policy prioritising local employment for direct employment, and to contractors to equally apply to their recruitment.</li> <li>Work with training providers and government to secure local direct and indirect employees.</li> <li>Continue provision of work readiness, vocational training or other up-skilling of local staff.</li> </ul>	<ul style="list-style-type: none"> <li>Employment and Training MP</li> <li>Employment Policy</li> <li>Labour MP</li> </ul>	-
Induced job creation from service and supply jobs to meet demands from the resident workforce and the mine itself during construction and operations phases	Definite Direct positive Medium term Intermediate range	-	<ul style="list-style-type: none"> <li>Invest in capacity building for local small businesses to improve their business opportunities.</li> <li>Contracts to encourage sourcing of their goods and services locally.</li> <li>Investigate local sourcing and procurement opportunities to promote sustainable small business development.</li> </ul>	<ul style="list-style-type: none"> <li>Procurement MP</li> <li>Community Development MP</li> <li>Contractor MP</li> <li>Contract terms</li> </ul>	-
Increase in local procurement opportunities in particular during operational phase	Definite Direct positive Medium term Intermediate range	-	<ul style="list-style-type: none"> <li>Implement the local procurement policy and management plan to guide management of local suppliers.</li> </ul>	<ul style="list-style-type: none"> <li>Procurement MP</li> <li>Community Development MP</li> </ul>	-
Increased revenue to the State and <i>aimag</i> budgets through taxes, royalties and other payments, in particular during the construction and operational phases	Definite Direct positive Medium term Intermediate range	-	<ul style="list-style-type: none"> <li>Support capacity building initiatives which build the ability of governments to effectively and transparently manage increased tax revenues and increased demands for social and public services.</li> </ul>	<ul style="list-style-type: none"> <li>Community Development MP</li> </ul>	-
Decreased potential for illegal forestry through increased visibility of forest users	Definite Direct positive Long term Small range	-	<ul style="list-style-type: none"> <li>CGM existing security force will regularly police the Gatsuert area as per existing operations and evict any illegal loggers that are encountered.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder Engagement Plan</li> <li>Community Development MP</li> </ul>	-
Strengthened and sustainable community development initiatives implemented in partnership between the Project and key stakeholders	Positive Direct Long term High moderate Intermediate range	-	<ul style="list-style-type: none"> <li>Development of improved economic opportunities for community members who are adversely impacted by the Project according to an agreed development plan.</li> <li>Regularly review and update the Stakeholder Engagement Plan (SEP) as attached to this SIA to provide for ongoing project communications and consultation.</li> <li>Induction of all employees (including nationals, locals and expatriates) to manage expectations on camp requirements (including work behaviours, camp living requirements).</li> <li>Sustainable community development projects developed in partnership with local government, civil society and community members, to ensure their relevance and ownership of implementation and outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>Community Development MP</li> <li>Stakeholder Engagement Plan</li> </ul>	-

## **1. PROJECT OVERVIEW AND SOCIO-ECONOMIC SITUATION**

### **1.1 INTRODUCTION**

Centerra Gold Inc. (Centerra, CGM or the Company) is a Canadian-based gold company engaged in the operation, exploration, development and acquisition of gold properties in Central and East Asia, Canada and other markets worldwide. This includes the Gatsuurt Project (the Project), located in the Khentii Mountain range valley, 90km north of Ulaanbaatar, in Selenge *aimag* (province) of Mongolia. Centerra Gold owns and operates the Boroo Mine, located 52km from Gatsuurt, through its 100% owned subsidiary Boroo Gold Company (BGC). Mining was carried out at Boroo from 2004 to 2012, and processing of remaining ores is currently being carried out. The Gatsuurt Project (Gatsuurt) includes the design and construction of additional processing facilities at the Boroo mine to treat refractory ore mined from the Gatsuurt site.

The Investment Agreement between Centerra Gold and the Government of Mongolia will allow the Company to operate an open cut gold mine, with the recovery of up to one million tonnes per annum (Mtpa) Run of Mine (ROM) gold ore for a period of 10 years. Under the current plan for Gatsuurt, the Company expects to process approximately 3.6 million tonnes of ore with an average grade of 2.86 grams of gold per tonne through the existing Boroo facility in the first two and a half operating years of the Gatsuurt Project. During this time, a BIOX® facility is planned to be added to the existing Boroo facility which will be used for the processing of the remaining BIOX® ores totalling approximately 13.5 million tonnes with an average grade of 2.92 grams of gold per tonne. The BIOX® process is a proprietary technology that involves bacterial oxidation in agitated tanks for pre-treatment of refractory ores and concentrates ahead of conventional cyanide leach for gold recovery.

The Company plans to mine the ore at Gatsuurt and truck it to the existing Boroo mill to be processed. Key aspects of the Project are:

- The operation of an open cut mining operation extracting up to one Mtpa ROM gold ore at Gatsuurt;
- Planned employment for 487 company employees, and approximately 512 contractor employees (comprising about 100 contractor employees for ore haulage and up to 120 for each of camp services and tailings dam expansion);
- Open cut mining fleet including excavator / shovels and a fleet of haul trucks, dozers, graders and water trucks;
- The recommencement and operation of the Boroo mill and construction of a BIOX® plant with a throughput capacity of 1.75 Mtpa;
- The construction of additional lifts for extension and operation of the existing Tailings Dam at Boroo;
- Possible upgrades and operation of water management infrastructure at Gatsuurt, including a water settlement and diversion dam and associated infrastructure at the Gatsuurt River;
- Possible installation of supporting power and communications infrastructure.

Placer gold was found and mined by Gurvan Gol and Gatsuurt companies at the site from 1991 – 2000, and in 1998, Cascadia geologists discovered the Gatsuurt deposit. CGM has managed Gatsuurt as an operational mine site since 2004 and requires nearly 90 different licenses, approvals and permits to operate fully within the legal requirements of Mongolia. Over the past decade, CGM has developed a substantial body of environmental monitoring data available and assessment studies over the past decade.

However, Project specific social data and assessment for the Project are more limited, so this Social Impact Assessment (SIA) has been prepared for consolidation with existing environmental information to form the ESIA Disclosure Package and Non-Technical Summary (NTS) for the Project.

Prior social studies that have been completed for the Project include a Socio-Economic-Health-Culture Baseline Study in 2011 and a Land Use Study in 2010, in addition to feasibility studies (2005 and updated in 2006), and a Mining Detailed Environmental Impact Assessment (DEIA) to meet Mongolian requirements (2009, and updated in 2014). In developing this SIA, an updated Social Baseline Study (Baseline) was prepared and forms part of this document (2015).

The overall objective of the Social Impact Assessment (SIA) is to identify and analyse the potential impacts of the proposed Gatsuurt Project and to recommend initiatives, realise sustainable development opportunities as well as to mitigate the negative impacts. The SIA considers the Project's area of influence encompassing communities potentially impacted by:

- Mining and associated activities at the Gatsuurt site;
- Haul truck and other Project vehicle movements between Gatsuurt and Boroo; and
- The construction and operation of additional processing facilities and equipment at the existing Boroo site.

The scope of this SIA is to assess the impacts associated with the construction, operation and post-mining decommissioning of the Project and develop and propose mitigation measures to be implemented, so that impacts can be prevented, reduced or maintained to an acceptable level, and the positive impacts can be further enhanced. The SIA intends to assist CGM to develop a clear understanding of the impacts, risks and mitigation options, including through meaningful participation from relevant and interested stakeholders. It aims to identify and document required mitigation of the negative social outcomes resulting from the development of the Gatsuurt property, as well as capturing opportunities for sustainable socio-economic benefits distribution during the mine life and into post closure. The assessment of potential social impacts, risks and outcomes (both to the company and the community) of the Gatsuurt mine development, informs a comprehensive social risk mitigation plan comprising a Social Management Framework and detailed Social Management Plans (SMPs), including a Stakeholder Engagement Plan (SEP), and Social Management and Monitoring Plan (SMMP).

CGM, as project proponent, intends to access the existing Revolver Loan with the European Bank for Reconstruction and Development (EBRD) for development of the Gatsuurt Project. This SIA is developed in order to meet financing requirements of the EBRD, including alignment with Good International Industry Practice (GIIP) and the EBRD 2014 Environmental & Social Policy, in particular the EBRD's Performance Requirements 1-8 and 10.

## **1.2 REPORT STRUCTURE**

This report presents the SIA prepared by Sustainability East Asia (Sustainability) to meet the EBRD's Performance Requirements. This report has been prepared to provide detail for the Environmental and Social Impact Assessment disclosure package being prepared for CGM for the Gatsuurt Project (the Project).

A component of this SIA is an updated Social Baseline Study (SBS, or the Baseline) that was also prepared by Sustainability for the Project. The baseline informs the comparative analysis undertaken in the social impact assessment chapters of this report.

This report comprises the following sections: Introduction (Chapter 1); Project Description (Chapter 2); Policy, Legal and Administrative Framework (Chapter 3); Methodology (Chapter 4); Stakeholder Engagement (Chapter 5); Socio-economic Baseline (Chapter 6); Social Impact Assessment (Chapter 7); Social Management Plan (Chapter 8); and the Summary (Chapter 9). Appendices follow the body of the report.

## 2. PROJECT DESCRIPTION

### 2.1 LOCATION AND ENVIRONMENT

The Gatsuurt Mine site is located in the Khentii Mountain range valley, 90km north of Ulaanbaatar and 14km west of Tunkhel *bagh* (village) in Mandal *soum* (district) of Selenge *aimag* (province). Tunkhel is the closest settlement to the mine site, located to the east of Gatsuurt and accessible via a 14km dirt road. Tunkhel has a railway station and a 110 kV power line passes within 25km of the area. Local topography is gentle to moderately steep. While classified as a permafrost zone, no permafrost is exhibited at the Project site. The Company plans to mine the ore at Gatsuurt and truck it to the existing Boroo mill to be processed. Boroo site is located 50km to the west of Gatsuurt. Project components extend into the neighbouring Bayangol *soum* of Selenge *aimag*. These include the existing Boroo mine processing facilities and the road connecting Boroo and Gatsuurt. Figure 2.1 shows the Project location.

The Project is located in a zone of chain mountains on the western side of the Khentii mountains. Its soil and plant cover are part of the steppe and forest-steppe zones. The Gatsuurt Project site is sparsely covered with forest, including trees such as birches, pines and spruces. The valley of the river flowing through the site is elevated at approximately 1,000m above sea level, and the mountains in the vicinity thereof are elevated at 1,300m, with the highest mountains reaching 2,500m. Black earth soil is well accumulated in the sediments and the layer immediately above, along the riverbed. Frost frequently occurs in some parts of the regional area.

Alluvial (placer) mining has occurred in the Gatsuurt area in the past and has significantly altered the appearance and hydrologic character of the valley. The Gatsuurt area is characterised by numerous pits, alluvial piles and trenches of various dimensions that are located within the proposed mine area as a result of these past mining activities. Of the total Gatsuurt exploration block covering an estimated area of 2,236ha, approximately 146ha are considered disturbed lands related to historic mining activities.

#### 2.1.1 Selenge *Aimag*

Selenge *aimag* is located in Mongolia's mountainous northern region, and is part of the Orkhon and Selenge basins. The centre of the *aimag* is Sukhbaatar city, which is 321km from Ulaanbaatar by paved road and railway. Selenge's main sector is agriculture, and the *aimag* is a provider of a significant portion of the country's agricultural land. The *aimag* produces 45% of the total crops in Mongolia and there are more than 570,000 livestock in the *aimag*. Sukhbaatar city is also a key development axis due to the railway and main highway which pass through it on the way to the Russian border. As of 2014, the *aimag* population was 105,253.

#### 2.1.2 Mandal *Soum*

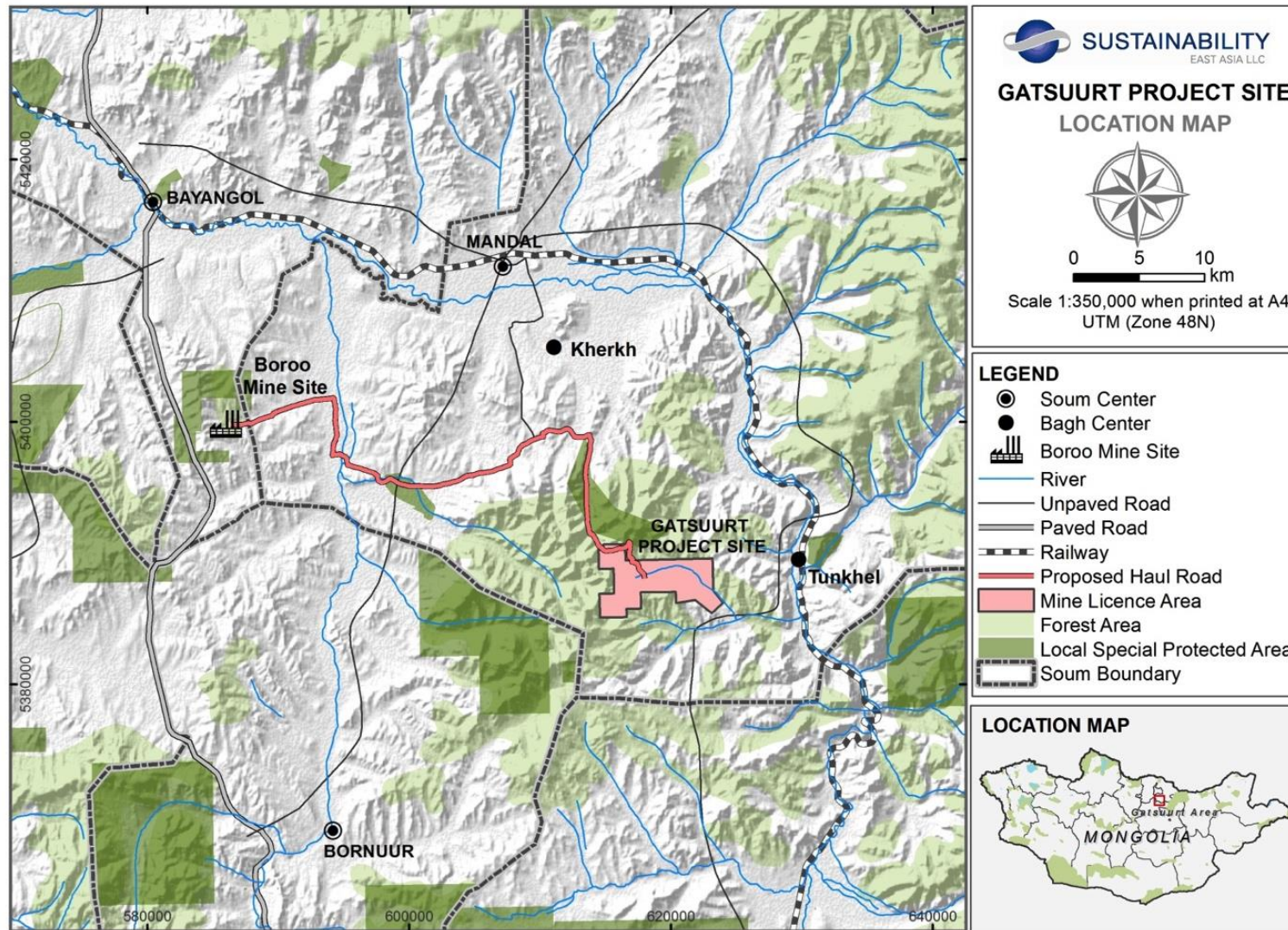
Mandal *soum* centre is located 220km from the Selenge *aimag* capital city, Sukhbaatar, and 174km from Ulaanbaatar city. Mandal *soum* was established in 1924, and its capital is Zuunkharaa. Kherkh *bagh* centre is around 5km from Zuunkharaa, while Tunkhel *bagh* centre is around 44km by unsurfaced road to the south east of Zuunkharaa. Mandal *soum*, with 9 *baghs*, has the largest population of any in Mongolia at just over 25,000 people. The *soum* has total land area of 484,373 hectares, of which the majority is prime agricultural and cropping land. Furthermore, 70% of the *soum* territory is covered by

forest land, which supports another key industry in Mandal - forestry. Mandal *soum* produces every year on average approximately 40 billion MNT of products.

### **2.1.3 Bayangol *Soum***

Bayangol was founded in 1931. The *soum* territory covers 197,600 hectares and has a population of around 5,500. By population size Bayangol ranks 4<sup>th</sup> in Selenge *aimag*. It is located 156km from Ulaanbaatar, 75km from Darkhan-Uul *aimag* and 170km from the *aimag* centre. Similar to Mandal *soum*, Bayangol is a prime agricultural area, and is connected to Ulaanbaatar, Darkhan and Selenge by a paved road, and by railway, on the line connecting Mongolia with Russia.





**Figure 2.1 Project Location**

## 2.2 PROJECT COMPONENTS

The Project components comprise two pits, waste rock dump, ore haulage, ore processing facilities, tailings treatment and storage, gold preparation. The proposed Project life is 17 years, which includes 10 years of Production, 9 years of mining and 17 years of environmental monitoring and reclamation. Table 2.1 describes the major activities to be undertaken by the Project during the Operations phase of which a brief description is provided here<sup>6</sup>. Full Project specifications can be found in the Non-Technical Summary.

**Table 2.1 Principal Mine Components and Activities during Gatsuurt Project Operations**

Component	Activities
Open Pit	Excavation and recovery of ore and waste using explosives, machinery, equipment and haul trucks Storage and use of explosives Dewatering of pit Monitoring
Stockpiles and Dumps	Rehandle and transport of ore to Boroo Waste dumping and construction of stockpiles Collection and treatment of surface runoff Monitoring
Ore Processing (at Boroo)	Unloading and feeding of ore to process plant Grinding and flotation of materials Biological oxidation (BIOX®) Storage, handling and use of chemicals and reagents Discharge of process waste to TSF
Tailings Storage Facility (TSF, at Boroo)	Increase height of dam to accommodate additional Gatsuurt tailings volume Engineering and environmental monitoring
Other Mine Facilities and Infrastructure	Fuel handling, storage and use Use of access road and haul roads Waste and effluent management Transfer of non-hazardous waste to Boroo mine Operation of electrical transmission line Operation of site water supply Vehicle workshop and site facilities
Surface Water Management	Spill containment pond Perimeter channel maintenance Sediment removal

### 2.2.1 Gatsuurt Mine

#### 2.2.1.1 Mining

To commence the nine-year mining period, two pits will be developed at the Gatsuurt site – the Central Zone and the Main Zone – to reach the ore body. The Central Zone pit will be approximately 230m deep while the Main Zone pit will reach a depth of approximately 125m and are to be mined using traditional open pit methods. Approximately 84 million tonnes of material will be removed from the Gatsuurt mine, at a ratio of 1 tonne of ore to 4 tonnes of waste rock, or, approximately 16.5 million tonnes of ore at an average grade of 2.83 grams per tonne of gold. The 67 million tonnes of waste rock generated will be stockpiled in the Waste Rock Dump (WRD), which is to be located downstream of the main pit beside the Gatsuurt River, and will be reclaimed after mining. Gold with trace amounts of silver will be extracted from the Gatsuurt property.

<sup>6</sup> Feasibility Study Environment and Social, Feb 2014, SNC-Lavalin.



The mine will work on a continuous 12hr shift schedule, 350 days per year, at a rate of 53,000 tonnes per day (tpd) in Year 1 and 35,000tpd in subsequent years. An owner operator workforce will carry out mining activity, including supply of the mining equipment fleet and its maintenance.

Once all the economically viable gold has been processed, decommissioning and final site remedial works will be undertaken.

Environmental monitoring and reclamation of the Gatsuurt site will occur over the life of the Project – a 17-year duration. This will comprise environmental monitoring during mining and production (11 years), and reclamation for 3 years over the closure period, which will be followed by reclamation monitoring for a period of 5 years<sup>7</sup>. The areas disturbed by historical placer mining operations will be reclaimed as part of the Gatsuurt reclamation program.

Closure is proposed to include decommissioning of the processing facilities, securing site safety for closure and stabilisation of land forms including the WRD.

#### [2.2.1.2 Waste Rock](#)

Waste rock will be stored in a single dump located to the south of the Central Zone pit. The dump will be segregated into potentially acid generating (PAG) and non-acid generating (NAG) areas. The PAG dump will contain about 9Mt of material while the NAG dump will contain 36Mt of material. The dump will abut the south side of the valley, will have a final height of about 80m and has been designed with an adequate factor of safety to ensure stability.

Encapsulation of the PAG material stored in the dump will be an integral part of the dump construction procedure. The dump will be constructed at angle of repose but will be configured in 20m lifts allowing re-sloping to 3:1 in order to provide for re-vegetation as required. All waste material from the Main Zone is considered acid generating and is planned to be disposed of in the mined out Central Zone pit. This waste will be dumped in the pit bottom and subsequently become submerged as the pit floods, thereby preventing generation of acid.

#### [2.2.1.3 Resource Use](#)

An existing 10-kV line from Tunkhel will service power at the Gatsuurt mine area. This line will be upgraded to provide 500kW of power for distribution to ancillary buildings at Gatsuurt. Diesel and gasoline storage facilities will be provided at the mine services area. One diesel fuel storage tank and one gasoline storage tank will be installed above-ground. A mine maintenance/operations administration building and a security gatehouse facility have been built at the mine site.

#### [2.2.1.4 Road Activity](#)

A gravel-surfaced 56km long, haul road has been constructed between Gatsuurt and Boroo. This is an 8m wide single lane road, with a passing lane strategically located along the route to allow traffic to pass safely.

The road to be used by the Project for ore haulage is a public road that was constructed by Boroo Gold Company for the Mandal *soum* government in 2010. The 56km road and 1 bridge was constructed by 5 different construction companies (whereby the road was divided into 5 sections and constructed separately), documented in 5 approvals or 'Road Commissioning Acts', which specify all relevant codes

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<sup>7</sup> Gatsuurt Project Overview March 2015.

and specifications pertinent to its agreed design. The Road Commissioning Act<sup>8</sup> specifies that BGC is the road user and financier and the road possessor (owner) as Mandal *Soum* Governor's Office<sup>9</sup>, who has responsibility for ensuring the road's construction and timely maintenance. The Road Commissioning Act did not require the road to be paved, however, the Temporary Rules Order by the Minister for Road Transportation, Construction and Urban Development (30 May 2012 No. 159) requires that: "the transportation of mining products shall be carried out after hard-paved roads have been constructed". Potential impacts of such a surface to land use and livelihoods, and human health, are discussed in Chapter 7.

At Gatsuurt, all ore mined from the open pits will be delivered to the ore stockpile located adjacent to the Central Zone pit. Ore haulage operations will be contracted out to the Gatsuurt Company (affiliated with the royalty holder Chinbat), using trucks supplied by CGM. There, ore will be re-handled by a small (1m<sup>3</sup>) excavator into 40t tractor- trailer units for haulage to the Boroo processing plant via the public road. In 2010, 24 Volvo haulage trucks were purchased at a cost of \$5.3M (including VAT) by CGM. At the full mine production rate of 5 000tpd, a fleet of up to 28 units may be required for ore haulage on a continuous 12 hour shift basis. Gatsuurt Co. has proposed to procure an additional six trucks. Trucks will cover the 54km route six to seven times daily (which is an average of six haul truck movements per hour, i.e. an average of one fully laden truck travelling to Boroo plus one empty truck travelling to Gatsuurt, every 20 minutes).

The ore haul fleet is owned by CGM and will be operated under supervision of CGM by Gatsuurt Company, which will undertake:

- Fuelling for the haul fleet, which will be provided at Boroo site;
- Maintenance of the haul fleet, which will be predominantly undertaken at Boroo site; and
- Provision of drivers for haul trucks, of approximately 144 individuals.

A stipulation of the ore haul contract will be that drivers and maintenance personnel will be hired locally on a priority basis, in line with CGM's existing employment policy specifications.

#### 2.2.1.5 [Boroo Facilities](#)

Ore processing and tailings storage facilities as well as other supporting infrastructure are required at Boroo site prior to operations. During the construction phase, CGM will need to invest USD \$104 million to build new facilities to process the ore at Boroo, including for the BIOX® facility.

Production will be undertaken for a ten-year period, whereby ore will be processed at a rate at full production of 5,000tpd. The process plant, located at Boroo, will achieve full production in January of Year 2 and produce 42t/Au and 3.7t/Ag over the project life cycle.

#### 2.2.1.6 [Resource Usage](#)

The estimated peak demand at Boroo will be approximately 8.9MW, including the addition of the BIOX® circuit to the existing Boroo processing plant. This will require an additional transformer of 15 MVA, 110-33kV capacity. The existing substation at Boroo will be upgraded to include parallel 15MW transformers with tie breakers installed to provide flexibility and backup to run the plant on a reduced

<sup>8</sup> Road Commissioning Act 03/66/2010, Gatsuurt LLC and Mandal Soum, 12 November 2010.

<sup>9</sup> Article 3.1.9 of Law on Road states that a local scale road is road within territory of city/ aimag which connects *soums*, districts and settlement areas.

rate in the event of a transformer failure. In addition, a second 6km, 110kV power line to Boroo will be installed in parallel with the existing line, as well as the necessary low voltage power distribution system to provide power to the additional process circuits.

A significant requirement is the 3 650kW back-up power supply in the form of gen-sets to maintain the operation of the large air blowers used for the bio-oxidation reactors in the event of a power outage.

Fresh water required at the Boroo process plant will be taken from the existing bore field located in Boroo river valley to the east of the mine and pumped to a water storage tank at the process plant site. The fresh water supply system is designed to supply an average flow of 300 m<sup>3</sup>/h.

An existing potable water treatment plant will treat the fresh water prior to storage in the potable water storage tank.

Sewage will be collected and chlorinated before disposal. Effluent from the sewage treatment plant will be discharged into a septic field. The capacity of the sewage system will be increased to accommodate the enlarged permanent camp and the addition of temporary facilities.

#### 2.2.1.7 Tailing Storage Facility

The Tailings Storage Facility (TSF) is located at the Boroo operation, near the confluence of the Ikh Dashir and Baga Dashir valleys, about 6 km east of the process plant. The original TSF was designed and constructed by Golder Associates from 2003 – 2008. The facility consists of a 1.5mm thick compacted clay liner base with the perimeter wall sealed with a High Density Polyethylene (HDPE) liner on the upstream face. A network of monitoring wells monitors any water that may enter the wells through the dam materials. A series of downstream water monitoring wells are in place to monitor any TSF seepage that may occur. During the life of the Boroo project, none of the monitoring wells have shown the influence of TSF water, suggesting that the TSF facility provides a strong barrier to seepage of TSF water.

As a result of the addition of the BIOX® process at the Boroo processing plant, the existing TSF will need to be expanded to accommodate the additional tailings stream generated. A new cell to the east of the existing structure will be constructed.

#### 2.2.1.8 Accommodation and Camp Services

During the operating phase of the Project, Gatsuurt operating personnel will be housed at Boroo and transported to and from Gatsuurt on a shift to shift basis.

A 400-person construction camp will be located to the east of the existing Boroo accommodation facilities. This camp will include 30-person management accommodation units built next to the Boroo facility, and 80 4-person gers, kitchen/dining facility and recreation facility.

An expansion of the permanent camp at Boroo will be started in 2016 to house employees and management. In addition, new 4-man gers will be added to house the construction labour as required. All staff will remain at camp for the duration of their shifts, including locally employed staff, as was successfully practiced at the Boroo Gold mine in minimising potential absences and ensuring maximum compliance with the Camp Code of Conduct.

Any offsite construction camp will also be required to abide by the same Code of Conduct.

#### 2.2.1.9 [Labour Force](#)

The Project will employ 482 permanent staff, including 116 equipment operators, 78 services and maintenance staff, and 77 engineers and technical staff.

A contracted workforce will be additionally required, including for transportation and haulage, mine services (housekeeping and catering) contracts. These indirect employment figures are expected to provide employment for 512 people, of which about 160 will be seasonal or temporary workers (including the reclamation, warehousing, and construction labour forces).

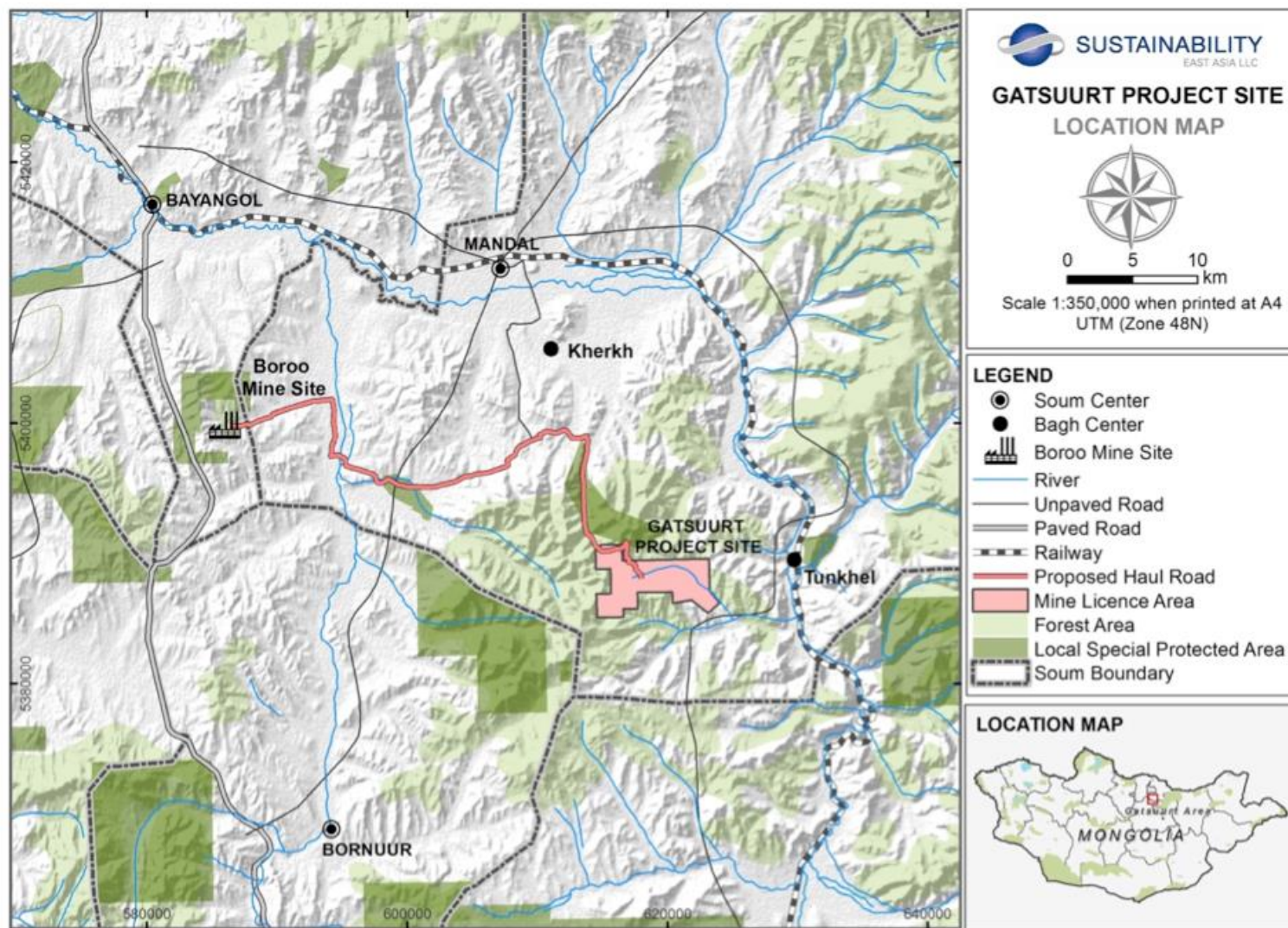
CGM has committed to applying the same hiring policy as was applied in the Boroo Project, of prioritising local employment (Bayangol and Mandal *soums*, with a focus on Tunkhel *bagh*) and where suitably qualified or experienced people cannot be sought, prioritising recruitment from the Selenge *aimag* and beyond. In addition, CGM has committed to requiring of its service contractors to match this commitment and prioritise employment of their employees from the local area.

### 2.3 **PROJECT AREA**

The proposed Gatsuurt Project is located in the Selenge *aimag*, Mongolia, with the mine licence area located in the Mandal *soum*. The haul road and the processing facilities at Boroo extend from Mandal *soum* and into Bayangol *soum* to the west of the Gatsuurt property, as shown in Figure 2.2.

The social study area of the Project extends to those *soums* directly impacted by all parts of the Project (i.e. those defined in the above project description). Those *soums* are Bayangol and Mandal *soums* of Selenge *aimag*, including Zuunkharaa (*soum* centre of Mandal), Tunkhel *bagh* (village nearest the Gatsuurt property in Mandal *soum*), and Baruunkharaa (*soum* centre of Bayangol).





**Figure 2.2 Map of the Project Area**

This Social Baseline Study sets out “study area” and “Project Area”<sup>10</sup> for the Project based on current information. The Project Area has been defined as the area in which a direct or indirect impact on the socio-economic or cultural environment might occur. This includes the *soums* of Mandal and Bayangol (Selenge *aimag*), with a particular focus on Tunkhel *bagh*.

**Table 2.2 Project Area**

Settlement	Type	Population	Distance to Gatsuurt site	Distance to Boroo site
Baruunkharaa	Bayangol <i>soum</i> centre	5,594 (1,675 households)	76.4 km by improved road	32.8 km by improved and paved road
Zuunkharaa	Mandal <i>soum</i> centre	25,693 (7,382 households)	39.2 km by improved road	49.4 km by improved road
Tunkhel <i>bagh</i>	<i>Bagh</i> centre of Mandal <i>soum</i>	3,234 (923 households)	Approx. 70 km by improved dirt road (via Zuunkharaa) / 18km via unimproved track (via Balj river)	Approx 90 km by improved dirt road (via Zuunkharaa)
Rural herder households	Seasonally nomadic and semi-settled households	49 (18 households)	Various (<1 to 100+km)	Various (<1 to 100+km)

## 2.4 ALTERNATIVES

### 2.4.1 Project Alternatives

Alternatives investigated during development of the Project included road alignments, workforce arrangements and water management approaches at the Gatsuurt site.

#### 2.4.1.1 Road Alignment

The selected road alignment is the third design of CGM’s alternative routes of the Boroo-Gatsuurt road, which now follows the following landmarks: from the southern side of the Burkhan Mountain pass to Zuun Mod valley, passing the Takhilt Mountain pass, then following the southern slopes of Mt. Noyon and the Khokh Biluut Ravine, to reach the Gatsuurt site from its north.

The initial road DEIA (prepared in 2004) specified a route which approached the Gatsuurt site from the south side (through Burkhan Mountain Pass and up the Zuun Mod Ravine, to the Gatsuurt site from its west). However, this alignment was abandoned due to challenges presented by construction through dense forest, and amended to round the Burkhan Mountain Pass on its southern side, through the Zuun Mod valley and Takhilt Mountain Pass, following the Khokh Biluut Ravine on the northern side Noyon-Uul, to reach Gatsuurt from the north.<sup>11</sup>

However, the results of archaeological investigation amended this route. CGM engaged the National University of Mongolia in 2005<sup>12</sup> to undertake a survey of the proposed alignment, during which investigations discovered 57 archaeological finds. None of these 57 archaeological finds is located within

<sup>10</sup> The SIA assessed: all relevant direct and indirect social impacts and issues of the project, and the relevant stages of the project cycle, and social issues associated with activities or facilities which are not part of the project, but which may be directly or indirectly influenced by the project, exist solely because of the project or could present a risk to the project.

<sup>11</sup> Road DEIA 2006.

<sup>12</sup> Report on Archaeological survey in Gatsuurt valley at Noyon mountain, Mandal, Selenge Aimag; June 16-24, 2005 and August 12-19, 2005 (Department of Anthropology and Archaeology, NUM).



the Gatsuurt license area, nor are any located in any other CGM license areas. The final selected alignment, now in use, was selected to avoid impacts on any archaeological finds.

#### **2.4.1.2**      [Associated Facilities](#)

Alternatives were investigated to site associated facilities including camp, administration, and maintenance workshops, at Boroo or Gatsuurt sites. It was determined that the minimum amount of activity should occur at the Gatsuurt site to ensure cost effectiveness for the Project and minimal environmental and social impact. This includes no processing facilities to be sited at Gatsuurt to ensure that all hazardous materials used in processing remain only at the existing Boroo site and managed under existing, certified conditions<sup>13</sup>. Additionally, no accommodation is to be provided at Gatsuurt, thereby limiting the impacts to both the environment and to sensitive social receptors, such as nearby herder households and cultural heritage resources, from any interaction by Project workers.

#### **2.4.2**      **No Project Alternative**

The Gatsuurt Project has been under consideration for approvals to commence by the Government of Mongolia since 2009. Centerra has considered a No-Project option, including that based on negotiations with the Government to determine state stake and royalties, and further negotiations to determine royalties and payments due to the State, to ensure the Project satisfies economic requirements for all shareholders.

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<sup>13</sup> As of 1 July 2013, the Boroo Mine Supply Chain in Mongolia has been certified in full compliance with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (the Cyanide Code).

### **3. LEGAL AND REGULATORY FRAMEWORK**

#### **3.1 INTRODUCTION**

This section discusses the legal framework within which the Project will be conducted and the social regulatory requirements that will apply to Project activities. The applicable international requirements and Mongolian legal framework are addressed below, as are various international agreements to which Mongolia is a party.

This Social Baseline Study and Impact Assessment has been prepared to comply with Mongolian national legislation and international socioeconomic requirements, with specific regard to the EBRD. This Chapter addresses the following topics:

- The Constitution and Government of Mongolia;
- An overview of applicable Mongolian legislation covering socio-environmental protection, worker health and safety, labour management, and property rights;
- An overview of applicable environmental health & safety standards;
- Related international treaties to which Mongolia is a signatory; and
- Requirements for project financing.

#### **3.2 MONGOLIAN FRAMEWORK**

##### **3.2.1 Overview of the Legal and regulatory structure**

For some years now, the regulatory and institutional framework surrounding environmental and social management of mining in Mongolia has been in a state of flux. In large part, this has been due to the dynamic politics associated with the election cycle which requires the establishment of a new cabinet every 4 years and thereby the appointment of new ministers, along with intense community debate about the role of the Mongolian State in the ownership and regulation of foreign investment.

The environmental and social regulation of the mining sector at the national level is managed by three government agencies: the Ministry of Mining (MoM), and its associated Mineral Resources Authority of Mongolia (MRAM); the Ministry of Environment and Green Development (MEGD); and the General Agency for Specialised Inspections (GASI). Other agencies have an important but peripheral involvement.

Both MoM and the MEGD have gone through substantial reforms over the last five years, although their capacity has remained static despite the rapid growth of the mining sector over the same period. The MEGD (formerly, the Ministry for Nature, Environment and Tourism (MNET)) manages and monitors environmental and natural resource impacts caused by mining through its responsibilities for the environmental impact assessment process. It also has responsibility for mine rehabilitation, the setting of environmental standards and management of groundwater resources. At the national level the ministry commissions research; produces maps; undertakes publicity on environmental issues; and manages environment-related donor assistance. It also assists *aimags* and *soums* when requested, and audits and checks enforcement efforts and the status of environmental remediation. The MoM is

responsible for minerals policy, legislation and regulation, while MRAM is responsible for licensing and regulation.

GASI was formed in 2002, and is currently responsible for inspections related to occupational health, safety, and environmental issues. At its formation, GASI replaced 13 agencies scattered through various sector ministries. Amalgamation aimed to achieve a common approach to inspection activities, avoid duplication and reduce the number of interruptions to businesses from multiple inspections.

In addition to national level institutions, *aimag* and *soum* administrations are also involved in the management of mining sector issues. For example, environmental inspectors at the *aimag* level are appointed by GASI or the MEGD and have an employment contract with the *aimag* Governor.

### **3.2.2 Constitution of Mongolia**

Mongolia was established as a parliamentary republic in 1992, following 70 years of socialist rule. The National Parliament of Mongolia adopted the Constitution on 13 January 1992. This document sets out citizens' personal rights and freedoms including a right to a "healthy and safe environment and to be protected against environmental pollution and ecological imbalance" (Article 16.1.2). Additionally, the system of government is described, as are the allocations of powers and responsibilities to each branch of government.

### **3.2.3 Government**

#### **3.2.3.1 National and Regional Government**

Mongolia is a parliamentary republic. It is a unitary state, meaning the central government is supreme and any administrative divisions (sub-national units) exercise only those powers that are delegated by the central Government. The central Government body is the single parliamentary chamber, the State Great Khural, which has 76 members.

There are four levels of government in Mongolia including the State Great Khural. The highest level of sub-national government is the province (*aimag*) and the capital city, Ulaanbaatar. Provinces are divided into regions (*soums*), while Ulaanbaatar is divided into districts. The lowest level of Government consists of sub-districts: rural sub-districts (*baghs*) and urban sub-districts (*khoroos*). There are a total of 21 *aimags*, with 330 *soums* and 1,588 *baghs*, while Ulaanbaatar has 9 districts and 152 *khoroos*.

Administrative units of Mongolia are organised as set out in the Constitution, on the basis of self-governance and state management, each administrative unit having its own Governor and Citizens Representative Khural (CRK). The Governor is the local representative of the *soum* and *aimag* levels of Government, whereas local citizens elect the CRK, and those CRK members elect their Head.

The head of state of Mongolia is the President, who is elected by the people. The President nominates a candidate for appointment as Prime Minister from the majority party or coalition in the State Great Khural.

#### **3.2.3.2 Judicial System**

##### **Constitutional Court:**

The Constitutional Court determines when the Constitution has been breached and resolves constitutional disputes. It is an independent body, governed by the Constitution.

**Supreme Court:**

The Supreme Court, the highest court in Mongolia, interprets meaning or application of the laws of Mongolia, when a submission is made by any individual or organisation who is concerned about the interpretation of laws.

**Lower Courts:**

The composition and structure of the judicial system is set out in the Law on Courts 2002. This law additionally provides for the independence of judges and courts. The hierarchy of courts below the Supreme Court of Mongolia are: the *aimag*, capital city, *soum*, inter-*soum* and district courts.

**3.2.4 Legislation**

This section discusses those laws relevant to the socio-economic context of the Project.

**3.2.4.1 [Environmental Impact Assessment](#)****Law on Environmental Impact Assessment (In force in 1998, amended 2001, 2006, and 2012):**

A specific Law on Environmental Impact Assessment (EIA) has existed since 1998, and was amended in 2001 and 2006. The "General direction of legal reform until 2012", approved by Resolution No. 38 of the State Great Khural (2009) and the "Action Plan of the Government of Mongolia", both required reform of the existing Law on EIA. On May 17th, 2012 a new Law on EIA was enacted by Parliament, which significantly extended the reach of the original law. In order to improve weak enforcement mechanisms and poor environmental management practices, the new EIA Law broadens the scope of assessment, and includes procedural provisions related to every stage of the assessment process including: development, implementation, appraisal, and review. Further changes include improvement of EIA procedures, application of strategic environmental assessment and cumulative impact assessment, and biodiversity offsets. The main implication of the law for the public is found within the public participation regulation, where project proponents are required to undertake a range of consultation activities, and must consider concerns and issues raised through this consultation in the design of their projects. EIA review and approval is the responsibility of the Ministry of Environmental and Green Development (MEGD), with the exception of the "non-profit production of common minerals within the lease of the local community", where the Governor's Office in the relevant *aimag* is the formal authority.

**3.2.4.2 [Environmental Protection](#)****Environmental Protection Law (In force on 5 June 1995, amended 17 May 2012):**

This law sets out the principles of sustainable development for environmental management. It is a framework law that describes broad principles and requirements, the details of which are contained in other laws. Additionally, it introduces a fee payment system for the use of natural resources, and describes the administrative provisions which allocate responsibility for environmental regulation to various levels of government.

The Gatsuurt Project is located in Selenge *aimag* in the Central region of Mongolia. It is regulated by national laws, as well as resolutions and regulations declared by the regional government of Selenge *aimag* and its *soum* governments.

#### 3.2.4.3 [Land, Land Use and Expropriation](#)

##### **The Constitution**

All land, subsoil, natural resources and water are the property of the State, as defined by the Mongolian Constitution. The Constitution provides for ownership of land to be granted to Mongolian citizens but they may not transfer the land to foreign entities. Land may be leased to foreign entities.

##### **Law on Land (In force on 1 January 2003, amended 22 December 2006)**

This law regulates 'possession' and 'use' of 'land', as defined in the law as follows:

- Land includes the surface of land and airspace above but not minerals;
- Land 'ownership' means to have control over land and a right to dispose of it;
- Land 'possession' land means to have control over land in accordance with a contract that sets out the permitted use and other terms of possession;
- To 'use land' means the right to use land in accordance with a contract granted by those who 'own' or 'possess' the land; and
- A 'certificate of land use' means a certificate granting the right to use land to foreign entities.

The law describes that land must be monitored, protected, restored and used efficiently for its permitted use. Some uses are prohibited, including activities that may cause damage to human health; nature and ecological balance; or threaten national security. Subject to legal compliance and contractual conditions specifying the specific purpose and period of time, foreign countries, international organisations, legal entities and citizens may become users of land. Land use planning and compulsory purchase (expropriation) is addressed through the Law on Land. The State Central Administrative Organisation has the power to implement legislation and policy on land use and to determine land use classifications subject to government approval, while the powers of Citizens' Representatives Khurals and Governors of *aimags*, the Capital City, *soums* and districts are outlined. Additionally, the Law on Land is also important in the context of understanding any land use and ownership rights of third parties affected by Gatsuurt Project.

##### **Law on Subsoil (In force on 29 November 1988)**

The Law on Subsoil regulates the use and protection of subsoil according to the principles of sustainable development. As described in the Constitution, subsoil is the property of the state. Subsoil may be leased; however, if a mining licence is obtained, this law allows for its automatic use subject to certain requirements, including a requirement to conserve useful soil, conduct mining efficiently and use extracted gravel and other materials properly.

#### 3.2.4.4 [Minerals Law](#)

Laws addressing the permanent and temporary closure of mines are discussed under Section 2.4.12 below.

##### **Minerals Law (In force on June 26, 2006)**

The purpose of the minerals law is to regulate prospecting, exploration and mining of minerals within the territory of Mongolia.

Minerals are defined as 'any usable naturally occurring mineral concentration that was formed on the surface or in the subsoil as a result of a geological evolutionary processes', but do not include oil and natural gas.

Mineral resources are the property of the State, who may grant exploration and mining rights. Additionally, the State may own up to 34% of the shares of the investment to be made by the licence holder in a "mineral deposit of strategic importance" for which proven reserves were determined through funding sources other than the State budget. The percentage of the State share shall be determined by an agreement on exploitation of the deposit considering the amount of investment made by the State.

The State may participate up to 50% jointly with a private legal person in the exploitation of a minerals deposit of strategic importance where State funded exploration was used to determine proven reserves. The percentage of the State share shall be determined by an agreement on exploitation of the deposit considering the amount of investment made by the State.

Mineral exploration and mining licences may be granted to Mongolian companies or partnerships ("legal persons") that are taxpayers in Mongolia duly formed and operating under the laws of Mongolia.

Only one minerals licence may be granted to one legal person only but there is no limit to the number of exploration licences a legal person may hold. The size of an exploration area shall not be less than twenty-five (25) hectares and shall not exceed four hundred thousand (400,000) hectares.

Pre-mining operations are conducted under a pre-mining agreement between the exploration licence holder and the applicable government agency. Pre-mining operation is the period after exploration when the design package is prepared; the feasibility study undertaken; and mine development and commencement of production occurs.

A license holder shall work in cooperation with the local administrative bodies and conclude agreements on issues of environmental protection, mine exploitation, infrastructure development in relation to the mine-site development and jobs creation. The license holder may organize a public forum in relation to those issues, in cooperation with the local administrative agency. The local citizens may elect a representative whose obligation is to provide public monitoring on the license holder's activities.

#### **3.2.4.5**      [Cultural Heritage](#)

##### **The Constitution:**

Regarding cultural heritage, Article 7, Chapter 1 of the Constitution of Mongolia states: "historical, cultural monuments and scientific and intellectual heritages of the people of Mongolia shall be under state protection".

##### **Law on the Protection of the Cultural Heritage (In force 8 June 2001, amended in 2004):**

The Cultural Heritage Law regulates the collection, registration, research, classification, evaluation, preservation, protection, promotion, restoration, possession and usage of cultural heritage including tangible and intangible heritage.

Items of cultural significance include archaeological findings, sites, tombs, rock carvings, and the remnants of mining, processing, or industry. The law also differentiates 'tangible' and 'intangible' assets whereby tangible assets are fixed structures such as buildings and relics.



Intangible cultural heritage varies from forms of singing, folk knowledge and symbolism, traditional folk dance and customs to ceremonies and the sites where they are held. Heritage is classified as “common”, “valuable” or “unique and valuable”, and the protection of each of these types is identified at the national, regional (*aimag*), and local (*soum*) level. The law establishes the principle that archaeological and cultural heritage items should be preserved within their natural place wherever possible.

The law also allows the government to establish protection zones surrounding areas of identified cultural or historical value. Activities of potential disturbance within a protection zone are prohibited. Section 17 of the Law requires that an authorised organisation undertake archaeological exploration and survey prior to commencing mineral exploration or mining development. These activities cannot proceed without a permit from the authorised archaeological organisation. In the event that items of cultural or heritage value are discovered, and may be at risk from mining or exploration, the law requires immediate notification to the *soum* Governor, and, if possible, protection of the site. The *soum* Governor is responsible for excavated sites following the completion of research. The land and subsoil where items of historical, scientific, and cultural value are located fall within State protection and any archaeological findings become State property.

#### **Additional Provisions on Cultural Heritage:**

Further provisions for the preservation and protection of cultural heritage are contained within the following:

- National Security Concept of Mongolia;
- Foreign Policy Concept of Mongolia;
- Mongolian Development Goals based National Development Policy;
- State Policy on Culture;
- Law on Culture;
- Law on Treasury Fund;
- Civil Code;
- Criminal Code;
- Law on Official State Language;
- Law on Special Protected Areas of Mongolia; and
- International conventions on cultural heritage to which Mongolia is signatory.

In addition, the Government of Mongolia has implemented national programs in order to safeguard and promote cultural heritage, including:

- “Mongol script” (1995);
- “Preservation, protection and restoration of immovable historic and cultural heritages” (1999 – 2005);
- “Support to folk arts” (1999 – 2006);
- “Horse headed fiddle and long song” (2005 – 2014);

- “Digital preservation of national cultural heritages” (2005 – 2008);
- “Mongol throat singing’ (2007 – 2014); and
- “Safeguard and restoration of immovable historic and cultural heritages” (2008 – 2015).

### International Standards and Conventions

The key international conventions to which Mongolia is signatory are as follows:

**Table 3.1 International convention on cultural heritage ratified by Mongolia**

International Convention	Approved date and place	Ratification date of Mongolia
Convention for the protection of cultural property during armed conflict	Gaaga. 10 <sup>th</sup> May 1954	1964
Convention on the prevention measures of illegal entry and release of cultural heritage, as well as prohibition of the cultural heritage ownership transfer	Paris. Approved on 14 <sup>th</sup> November 1970 by 16 <sup>th</sup> session of the General Conference of UNESCO <sup>14</sup> .	1991
World Cultural and Natural Heritage Convention	Paris. Approved on 16 <sup>th</sup> November 1972 by 17 <sup>th</sup> session of the General Conference of UNESCO.	1990
Convention on the Protection of Intangible Cultural Heritage	Paris. Approved on 17 <sup>th</sup> October 2003 by 32 <sup>nd</sup> session of the General Conference of UNESCO	2005
Convention for the protection and promotion of the diversity of cultural expressions	Approved on 20 <sup>th</sup> October 2005 by 33 <sup>rd</sup> session of the General Conference of UNESCO	2005

#### 3.2.4.6 [Health and Safety](#)

##### **Law on Sanitation (In force on 7 May 1998):**

This public health law ensures the rights of individuals to healthy and safe living and working conditions, and to define the rights and duties of individuals and businesses in these regards. This law requires the following activities to be carried out in accordance with regulations addressing such activities:

- The supply of drinking and household water;
- Air quality including dust, smog and pollution;
- Soil sanitation, waste disposal, sewage facilities, water holes and lavatories;
- The disposal of hospital waste, radioactive and toxic chemicals;
- The construction of housing and facilities for public use;
- The use of toxic chemicals and ionising rays;
- Activities in environments that are noisy or that are impacted by vibration, electromagnetic fields or radio waves;
- The production and use of foodstuffs; and

<sup>14</sup> United Nations Educational, Scientific and Cultural Organization.

- The import of products and technologies.

Duties of business entities under this law include:

- Ensuring compliance with applicable regulations within their business including training personnel; and
- Notifying the inspection agencies of any conditions harmful to human health or the environment.

#### 3.2.4.7 [Labour Law](#)

##### **Labour Law of Mongolia (In force on 14 May 1999, amended 13 December 2012):**

This law sets out the rights and duties of employers and employees including collective agreement, collective bargaining, collective and individual labour disputes, labour conditions, terms and conditions of work, liabilities for breach of the legislation, and to ensure gender equality.

This law provides for the rights of employees to be provided with labour conditions that comply with health and safety laws and regulations; to receive payment for work done; to holiday; to freely assemble with other employees for the purpose of protecting his or her rights and legitimate interests including through representative organisations and collective agreements; to strike in certain circumstances; to receive a pension, an entitlement to social insurance and death in service benefits and to other benefits as may be provided in employment and collective agreements.

Additionally, the law prohibits discrimination in the workplace based on nationality, race, sex, social origin or status, wealth, religion, or ideology, but women are prevented from undertaking certain forms of work as set out in separate regulations. Women with children are protected from discrimination and are entitled to maternity leave. Parents with children under three years old may take child care leave and employers must re-engage such employees on their return to work. Collective agreements may be concluded within professions or economic sectors and registered with the applicable regulator. The Labour arbitration court settles collective labour disputes and a court or commission settles individual labour disputes. With respect to the Employer's responsibility for sub-contractor workers working at an Employer's workplace, the Law on Labour regulates relations occurring between the "employee" and the "employer". Employee in this case means (Article 3.1.2 of Law on Labour) the one who signs "employment agreement" with the employer. This is interpreted as encompassing contractors, who are by definition employed by the employer.

#### **3.2.5 Mongolian Environmental, Health and Safety Standards**

Environmental quality and health & safety standards relating to the Gatsuurt Project are summarised in Table 3.2 below. These standards govern compliance with Mongolian national requirements.

**Table 3.2 Socio-environmental and health and safety standards relating to the Gatsuurt Project**

No.	Environmental / Health and Safety Standards
1	MNS (ISO) 5667-1:2002 Water Quality. Sampling. Part 1. Guidance on the design of sampling programs.
2	MNS 900:2005 Environment. The human health protection. Security. Drinking water. Hygienic requirements and quality control.
3	MNS (ISO) 5667-2:2001 Water Quality. Sampling. Part 2.Guidance on sampling techniques.
4	MNS (ISO) 4867:1999 Water quality. Sampling. Part 3. Recommendation of sample preparation and storage.



5	MNS (ISO) 5667-4:2001 Water Quality. Sampling. Part 4. Guidance on sampling procedure of natural lake and reservoir.
6	MNS (ISO) 5667-10:2001 Water Quality. Sampling. Part 10. Guidance on waste water sampling procedure.
7	MNS (ISO) 5667-11:2000 Water quality. Sampling. Part 11. Guidance on groundwater sampling.
8	MNS (ISO) 5667-13:2001 Water Quality. Sampling. Part 13. Guidance on waste water and water treatment facility sludge sampling procedure.
9	MNS (ISO) 11083:2001 Environment. Water Quality. Determination of chromium (VI) using spectrometric method (1.5-diphenylcarbazide).
10	MNS 5032:2001 Water quality. Determination of heavy metals using the Rontgen fluorescence method.
11	MNS (ISO) 11923:2001 Water quality. Determination of suspended solids by filtration through glass (fibre filters).
12	MNS 4943:2000 Water quality. Waste water.
13	MNS (ISO) 4889:1999 Water quality. Determination of electrical conductivity.
14	MNS 4586:1998 Water environmental quality. General requirements.
15	MNS 4420:1997 Drinking water. Determination of mercury. Atomic absorption method.
16	MNS 4430:2005 Drinking water. Determination of measuring iron compounds.
17	MNS 2573:1978 Environmental protection. Hydrosphere. Water quality indicators.
18	MNS 4431:2005 Drinking water. Determination of nitrite concentration.
19	MNS 4288:1995 General requirements for selecting a site for wastewater treatment plants and treatment technologies and effectiveness.
20	MNS 4217:1994 Drinking water. Determination of total nitrate concentration.
21	MNS 0899:1992 Requirements and rules for choosing a water supply source and hygienic requirements.
22	MNS 3935:1986 Drinking water. General requirement for field testing of water.
23	MNS 3936:1986 Drinking water. Field analysis methods.
24	MNS 3900:1986 Drinking water. Determination of taste, colour, smell and turbidity.
25	MNS 0017-1-1-10:1979 Water use and protection. Terms and definition.
26	MNS 0017-1-1-14:1980 Hydrosphere. Classification of water use. General requirements.
27	MNS 4423:1997 Drinking water. Method of measuring dry residue.
28	MNS 4079:1988 Water quality terms and definition.
29	MNS 0017-2-3-16:1988 Environmental protection. Atmosphere. City and settled area air quality monitoring procedure.
30	MNS 3384:1982 Atmosphere. General requirements for sampling.
31	MNS 3383:1982 Atmosphere. Pollution source. Terms and definitions.
32	MNS 4990:2000. Occupational Health and Safety. Workplace environment. Hygienic requirements.
33	MNS 5885:2008 Accepted concentration of air polluting substances. Technical general requirements.
34	MNS (ISO) 4225:2001 Air quality. General background. Vocabulary.
35	MNS 5365:2004 General issues of air quality. Fine size dust determination method.
36	MNS 0017-0-0-06:1979 Environmental protection standard system.
37	MNS 3473:1983 Environment. Land. Land use. Terminology and determination.
38	MNS 5002:2000 Occupational Health and Safety. General requirements for noise norm and safe working procedure.
39	MNS 5003:2000 Occupational Health and Safety. General requirements for noise measurement.
40	MNS 12.1.009:1985 Occupational Safety. Noise. Noise accepted level in apartment and civil construction.
41	MNS 12.1.06:1988 Occupational Safety standard system. Extreme high noise. General requirements for safety.
42	MNS 12.4.005:1985 Occupational Health and Safety. Protection tools and methods against noise. Classification.
43	MNS 12.1.017:1988 Occupational Safety standard system. Extreme high noise. Workplace noise pressure measure method.
44	MNS 4585:2007 Air quality. Technical general requirements.
45	MNS-3384:82 Atmospheres. General requirements for sampling
46	MNS-4048:88 Atmospheres. Gravimetric method for determination of dust concentration.

Standards are developed and agreed by the Mongolian Agency for Standardisation and Metrology (MASM). The Mongolian law on "Standardisation and Conformity Assessment", adopted in 2003, sets out the preparation, application and promotion requirements for national standards. Standards are

being harmonised to ISO standards and those that are harmonised to ISO standards are indicated as MNS (ISO) in the above table.

### **3.3 INTERNATIONAL STANDARDS AND LENDER REQUIREMENTS**

#### **3.3.1 International Agreements to which Mongolia is a Signatory**

States that become signatories to particular international agreements enact national legislation to implement those specific international agreements. While the government of Mongolia has enacted specific laws implementing specific international agreements, it has also incorporated provisions in national laws indicating that where the national law is inconsistent with international agreements to which Mongolia is a signatory, the requirements of the international agreement will prevail. A brief summary of international agreements applicable to the Project is set out below.

##### **3.3.1.1 Labour Relations and Workers' Rights**

Mongolia has been a member of the International Labour Organisation (ILO) since 1968 and has ratified a range of ILO Conventions, including:

- Forced Labour Convention, 1930 (No. 29), ratified 15.03.2005;
- Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87), ratified 06.1969;
- Right to Organise and Collective Bargaining Convention, 1949 (No. 98), ratified 3.06.1969;
- Equal Remuneration Convention, 1951 (No. 100), ratified 3.06.1969;
- Maternity Protection Convention (Revised), 1952 (No. 103), ratified 3.06.1969;
- Abolition of Forced Labour Convention, 1957 (No. 105), ratified 15.03.2005;
- Discrimination (Employment and Occupation) Convention, 1958 (No. 111), ratified 3.06.1969;
- Employment Policy Convention, 1964 (No. 122), ratified, 24.11.1976;
- Minimum Age (Underground Work) Convention, 1965 (No. 123) Minimum age specified: 18 years, ratified 3.12.1981;
- Workers' Representatives Convention, 1971 (No. 135), ratified 8.10.1996;
- Minimum Age Convention, 1973 (No. 138) Minimum age specified: 15 years, ratified 16.12.2002;
- Tripartite Consultation (International Labour Standards) Convention, 1976 (No. 144), ratified 10.08.1998;
- Occupational Safety and Health Convention, 1981 (No. 155), ratified 3.02.1998; and
- Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983 (No. 159), ratified 3.02.1998.

##### **3.3.1.2 Livestock Production**

**Agreement for the Establishment of a Regional Animal Production and Health Commission for Asia and the Pacific (Entry into force in Mongolia on 8 May 2007):**

The purposes of the Commission include the promotion of livestock development; building up national and regional livestock programs; promoting livestock production as an industry; and raising the level of nutrition and standard of living of small farmers and rural communities.

#### [3.3.1.3 Hazardous Substances](#)

##### **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (In force in Mongolia on 8 March 2001):**

This Convention addresses pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by parties to the convention. Additionally, it lists those chemicals which have been notified by parties for inclusion in the Prior Informed Consent Procedure, through which all parties have an opportunity to make informed decisions as to whether they will consent to future imports of certain listed chemicals.

##### **Stockholm Convention on Persistent Organic Pollutants (In force in Mongolia on 30 April 2004):**

The objective of this treaty is to protect human health and the environment from chemicals that remain intact in the environment for long periods; become widely distributed geographically; and which are bio-accumulative in humans and wildlife.

#### [3.3.1.4 Regulations](#)

##### **Regulation on Conducting Archaeological, Paleontological Exploration, Excavation and Survey in the Territory of Mongolia:**

Article 27.8, Chapter 5 of Law of Mongolia on Cultural Heritage Protection states that “an archaeological exploration survey in the area must be conducted by a specialised historical and archaeological research organisation before obtainment of a land permit for the purpose of conducting economic entity activities such as constructing towns settlement areas, buildings, new roads, water power plant, mineral exploration and mining etc.”. To implement the requirements of the law a regulation was developed stipulating that archaeological surveys shall be conducted in accordance with “Regulation on Conducting Archaeological, Paleontological Exploration, Excavation and Survey in Territory of Mongolia” as Annex 1 to the Order No. 222 of Minister of Education, Culture and Science produced in May 18 of 2010.

##### **Regulation on Guideline for Waste Disposal and Landfill by Citizens and Economic Entities:**

Article 8.4.1 of the Law on Waste states that *soum* Governors shall appoint waste disposal sites, taking into account land management plans. Moreover, the *soum* Governor shall grant land use permits based on the conclusion of the General Environmental Impact Assessment (GEIA) / Detailed Environmental Impact Assessment (DEIA) and will compare it with the land management plan and decide whether the potential site is suitable for constructing such a facility. Subsequently, Regulation on Guideline for Waste Disposal and Landfill by Citizens and Economic Entities which is an annex to Order No. 404 by Minister of Nature, Environment and Tourism issued in December 5 of 2006 regulates the process for waste disposal and requirements for landfill structures.

##### **Regulation on Air Quality Data Reports:**

According to article 9.1.4 of the Law on Air, economic entities must monitor air quality in accordance with the environmental monitoring program which is provided in the DEIA. Additionally, economic



entities shall submit an internal monitoring report on air pollution to the local branch of the specialised agency (Article 9.1.5 of Law on Air). The specialised agency responsible for air quality in this case is the National Agency for Meteorology, Hydrology and Environment Monitoring and its local branch in this case is the *Aimag* Centre for Meteorology, Hydrology and Environment Monitoring. Economic entities shall submit air quality monitoring data to this organisation in accordance with the "Regulation on Air quality Data Report" which is Annex 2 of Order No.98 by Minister of Environment issued in 1996.

#### **General Regulation on Organising Internal Monitoring on Operations of Economic Entities and Organisation:**

This regulation was approved as Annex to Decree No. 311 of the Government of Mongolia issued in 2011. Article 3.7.11 requires that the entities / organisations shall take immediate mitigation measures and notify relevant authorities when during internal monitoring it is determined that situation is generated which might cause direct or indirect threat and damage to human life, health, society and environmental safety. In addition, Article 4.1.2 states that internal monitoring shall be organised for the purpose of monitoring the impacts on the environment due to the operation of an economic entity and organisation.

#### **Regulation on Developing Environmental Management Plans, Quality Assurance and Reporting:**

The Minister of Environment and Green Development approved this regulation as Annex to Order A-05 issued in January 06, 2014. Article 1.6 states that an annual environmental management plan and environmental monitoring program shall address observation, measurement, sampling location, frequency, responsible person, analysis method and required estimated cost for the purpose of determining whether measures to prevent, eliminate, mitigate changes and negative impacts on the state of the environment are successful and whether the impact significance and amount is within the permissible level.

#### **Regulation on the Extraction Operations of Minerals from Small-Scale Mines:**

The regulation was approved as Annex to the Government Resolution No.308 on December 1, 2010. The purpose of this regulation is to regulate relations with respect to the extraction of minerals from small-scale mines. It is applicable to small-scale mining of all types of minerals except water, ores bearing radioactive elements, petroleum, and natural gas. *Soum* Citizen's Representative *Khural*s shall have the responsibility of informing the public of their decisions made on small scale mining and control over implementation (Article 2.4). The State administrative organisation in charge of geology and mining issues shall have the following responsibility of approving the following rules, guidelines, instructions and templates, occupational safety rules, and providing partnership members with technical training and support in building capacity on environmental and safety matters.

### **3.4 LENDER REQUIREMENTS**

The SIA has been developed in line with international lender requirements and standards, specifically, those of the European Bank of Reconstruction and Development (EBRD) Performance Requirements (May 2014). Additionally, industry guidance was used in the preparation of this document, including:

- Social Impact Assessment: Guidance for assessing and managing the social impacts of projects (April 2015) International Association for Impact Assessment
- Community Development Toolkit (2012) International Council on Mining and Metals
- Stakeholder Engagement, A Good Practice Handbook for Companies doing Business in Emerging Markets (May 2007) International Finance Corporation
- Good Practice Note, Addressing the Social Dimensions of Private Sector Projects (December 2003) International Finance Corporation

The EBRD is bound by its founding agreement to adhere to sound banking principles and “promote in the full range of its activities environmentally sound and sustainable development”. The various ways in which the EBRD promotes such development are described in the EBRD’s Environmental Policy document (the Policy). One specific step taken by the EBRD to address this mandate and the General Principles and Objectives set out in the Policy is to ensure that all of its investment and technical cooperation projects undergo environmental and socioeconomic appraisal along with the financial, economic, legal and technical due diligence that is carried out and to ensure that appropriate monitoring is undertaken following approval of projects by the Board of Directors.

The EBRD adopted its first Environmental Policy in 1991 and has since been updated. In May 2014 it was reviewed to become an Environmental and Social Policy, reaffirming EBRD’s commitment to ensure that the projects it finances are socially and environmentally sustainable. The Policy specifies a set of 10 PRs that projects are expected to meet in order to obtain financial support from the EBRD, as follows:

- PR 1: Assessment and Management of Environmental and Social Impacts and Issues;
- PR 2: Labour and Working Conditions;
- PR 3: Resource Efficiency and Pollution Prevention and Control;
- PR 4: Health and Safety;
- PR 5: Land Acquisition, Involuntary Resettlement and Economic Displacement;
- PR 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PR 7: Indigenous Peoples;
- PR 8: Cultural Heritage;
- PR 9: Financial Intermediaries; and
- PR 10: Information Disclosure and Stakeholder Engagement.

### **3.5 CENTERRA POLICIES**

Centerra has been publicly listed on the Toronto stock exchange since 2004 and operates within its Guiding Principles in undertaking all activities, which includes those in Centerra’s capacity as 100% owner of the Gatsuurt Project. At the highest level, Centerra applies its Directors Code of Ethics, and has adopted certain practices and procedures to ensure that effective corporate governance practices are followed and that the Board functions independently of management.

The company objective is to deliver shareholder value, while also demonstrating leading performance and commitment to corporate responsibility across its operations through:

- Participating in the Extractives Industry Transparency Initiative (EITI) in its countries of operation: Mongolia and Kyrgyzstan;
- Public disclosure through the Global Reporting Initiative (GRI), applying the G3 Index and the Mining and Metals Supplement;
- Adoption and implementation of the World Gold Council's Conflict-Free Gold Standard; and
- A signatory to the Cyanide Code, the international standard in cyanide management, as both a gold miner and a cyanide consignor/transporter.

Company policies guiding the company's interactions with the communities in which it operates include the Centerra Gold Corporate Responsibility Standards (Draft, April 2012). Centerra's Corporate Responsibility Standards defines commitments in key issue areas<sup>15</sup> and requires that all Centerra projects and operations will assess the identified risk areas and drivers for their business and take steps to meet the commitments outlined in Table 3.3 below.

**Table 3.3 Centerra's Corporate Responsibility Standards**

<b>Safe and Healthy Workplaces</b>	
<b>Worker health and safety</b>	Each employee, contractor, vendor and visitor will go home safe and healthy. The Company is committed to being a leader amongst its peers with respect to workplace safety and health and achieving zero harm.
<b>Environmental Stewardship</b>	
<b>Environmental and social impact assessment</b>	Understanding existing environmental and social conditions at each of our sites is a crucial component of project planning and successful development and operation. Centerra bases its project decisions on good quality information obtained through an ESIA that enables the Company to deliver social benefits to communities while mitigating possible environmental and social impacts.
<b>Biodiversity and ecosystem services</b>	Centerra contributes to the protection and conservation of biodiversity and applies integrated approaches to land-use planning throughout the mining lifecycle. We work, in dialogue with local stakeholders, to minimize or eliminate the impacts of our activities on biodiversity and ecosystem services and, where feasible, identify opportunities to enhance and improve local ecosystems and related economic development.
<b>Water management</b>	Centerra operates in regions with sensitive water resources and ecosystems and where water abundance or scarcity creates operating challenges. We are committed to understanding local water conditions and needs, and ensuring the safe, efficient and sustainable management and protection of water resources.
<b>Tailings and mineral waste management</b>	Centerra operates in an environmentally responsible manner that minimizes the creation and impact of mineral waste, tailings and associated water and protects nearby communities and watersheds.
<b>Closure planning</b>	Centerra works with recognized experts and its stakeholders to develop and implement mine closure plans that restore mine sites to alternate land uses and viable and diverse ecosystems that protect water and soil and create an enduring positive legacy for the community.
<b>Climate change and energy</b>	Centerra's activities and targets rely on understanding and planning relative to climactic conditions, both during our work and after the mining phase. Our use of resources, such as energy and water, can affect the environment and we work to minimize our consumption and the impacts of our resource use.

<sup>15</sup> Centerra Book of Standards, Draft April 2012.



## Corporate Responsibility

### Stakeholder mapping and engagement

Building trust and relationships with our communities of interest is critical to Centerra's business success. It provides us with the social licence to operate our sites, provides our access to exploration projects and helps us to understand and address the needs of our stakeholders. We commit to structured identification of and engagement with our stakeholders throughout the mining lifecycle, with sensitivity to cultural needs, language needs and transparency in our interactions.

### Land access and resettlement

Centerra recognizes the important role local communities play in decision-making around land acquisition and access, as well as the rights of indigenous communities to make free, informed decisions on mining activities prior to their commencement. We minimize the need to resettle communities around our operations and work with affected communities to ensure that adverse socio-economic impacts of relocation and impacts to the environment are mitigated.

### Community development

Centerra recognizes that our business success is linked to our ability to enhance the socio-economic capacity and well-being of the communities associated with our activities. Through our work, we aim to avoid dependency on Centerra's activities and operations, act as a catalyst for economic activity and contribute to the development of sustainable livelihoods.

### Human rights and security

Centerra supports and respects the protection of internationally proclaimed human rights and ensures it is not complicit in human rights abuses<sup>16</sup>.

### Artisanal mining

Centerra recognizes that artisanal mining activities can be an important contributor to social and economic development. At the same time, they may also create substantial community risks in areas including health and safety, community security, environmental protection, labour practices and government revenue. Centerra supports improved mining standards close to our operations and we work with local representatives and authorities to promote sustainable community development.

## Integrity

### Business ethics and transparency

Centerra builds stakeholder confidence and trust by operating in an ethical and transparent manner and by demonstrating honesty, integrity and impartiality in all of our actions.

<sup>16</sup> CenterraGold Inc. has adopted and implemented the World Gold Council's Conflict-Free Gold Standard (compliant as verified by third party audit as at 31 Dec 2013), which includes implementation of the *Voluntary Principles on Security and Human Rights* or systems consistent with the requirements of the Voluntary Principles.

## 4. METHODOLOGY

### 4.1 SUMMARY OF THE IMPACT ASSESSMENT PROCESS

The impact assessment approach identifies and evaluates the potential impacts that a proposed Project may have on the socio-economic and health environment of the local population. It develops mitigation measures that can be implemented in order to avoid or minimise negative impacts and enhance positive opportunities.

The overall assessment methodology is summarised below in Figure 4.1. It should be noted that SIA is focused on how to identify, avoid, mitigate and enhance outcomes for communities and that this is an iterative process across the life cycle of a Project, rather than a one-off at project commencement.

**Figure 4.1 Assessment Methodology**

#### **Scoping**

Identification of sensitivities and activities with the potential to contribute to or cause potentially significant impacts to receptors and resources, based on the Project definition described in Chapter 2. Project planning, decision-making and refinement of the Project description evolve through the assessment process as a result of the development of the Project and in response to the identified impacts.

#### **Stakeholder Engagement**

Continues throughout the assessment and over the life of the Project to ensure that legislative requirements are met, stakeholder concerns are addressed in the Project design and assessment and sources of existing information and expertise are identified, as described in Chapter 5.

#### **Collection of Baseline Data**

Establishing and reviewing the existing conditions and legislative requirements pertaining to the Project area and its surrounds and highlighting receptors and resources sensitive to potential impacts, as described in Chapter 6.

#### **Assessment of Impacts and Mitigation**

Predicting and evaluating the likely extent and significance of the potential impacts on identified receptors and resources according to defined assessment criteria; to develop and describe measures that will be taken to avoid, minimise, reduce or compensate for any predicted adverse effects, or to enhance positive impacts; and to report the significance of the residual impacts that remain following mitigation, a stage described in Chapter 7.

#### **Integration**

Developing a systematic approach for incorporating mitigation actions into the Project, taken forward as commitments with specified timing and responsibilities, typically achieved through Management Plans.

#### **Reporting**

Presentation of findings of the impact assessment, including a Non-Technical Summary.

### 4.2 SIA STAGES

#### 4.2.1 Scoping

The scoping phase sets the parameters for later phases of the assessment and management by determining the scale, timing and focus of the assessment, ascertaining who is likely to be impacted and identifying the actions that are likely to result in impacts. Scoping begins by defining the purpose of the assessment and identifying background material that may be useful for the assessment. The Project activities to be studied are defined (technical scope), the geographical area to be covered (spatial scope) and the timeframes over which the Project will be carried out (temporal scope) are defined. Key stakeholders and alternative options are also identified.

The **technical scope** of this SIA is defined in the Project Description. The technical scope encompasses the mine plus associated infrastructure, i.e. other pertinent activities associated with the mine and its construction, operations and decommissioning. The relevant socioeconomic components on which the Project may impact are defined in the Baseline.

The **spatial scope** of this SIA details the geographic area that may be impacted by the Project. The locus of potential impacts can change with socio-economic conditions, specific receptors and the impact of concern. The presence of pathways, such as a mobile workforce, along which primary and secondary impacts may spread, has also been considered. The spatial scope of each impact or groups of impacts of a particular resource/receptor is detailed in the impact assessment.

The **temporal scope** of the assessment has been defined by the Project phases as follows:

- Construction phase;
- Commissioning phase;
- Operational phase; and
- Decommissioning phase.

Remediation operations will start during the construction phase of the Project and will be staged to continue in parallel with the operational phase.

#### **4.2.2 Stakeholder Engagement**

The key principles of consultation are to ensure that relevant stakeholders are fully informed regarding the planned Project and that the views of stakeholders are taken into account where appropriate and reported in the SIA. The objective is to ensure the SIA process is robust, transparent and has considered the full range of issues or perceptions, and to an appropriate level of detail.

Public consultation has been undertaken through the DEIA process for the Project in accordance with Mongolian legislation, as well as in accordance with CGM's own requirements for ongoing consultation and engagement (refer to Section 5 of this SIA for further detail on consultation conducted). The consultation has been planned and executed within the framework of a Stakeholder Engagement Plan developed specifically for the Project.

#### **4.2.3 Collection of Baseline Data**

The description of the baseline socioeconomic conditions provides information on all receptors and resources as having the potential to be significantly affected by the Project. It also describes baseline conditions that have been used to make the assessment and describes where additional information is to be gathered to fill current gaps in baseline information. The description of the baseline will provide sufficient detail to allow the following objectives to be met to:

- Identify the key socioeconomic conditions in areas potentially affected by the development;
- Provide data to aid the prediction and evaluation of possible impacts;
- Inform the development of appropriate mitigation measures; and
- Provide a benchmark to assess future socioeconomic changes and to assess the effectiveness of mitigation measures.



The baseline study collected data at four levels - *aimag*, *soum*, *bagh* and citizen. The *aimag*, *soum*, and *bagh* level data show key economic and social indicators of Selenge *aimag*, and Bayangol and Mandal *soums*, with specific reference to Tunkhel *bagh*. The baseline study conducted in April-May 2015 employed a household questionnaire, Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) for primary data collection and analysis. 400 households were selected to participate in the household survey. It was determined that 1% of urban households and 10% of rural households of the sample would provide an optimum representation in the study population (see Appendix A for detailed Baseline Methodology). KIIs were conducted with 32 individuals using an interview guide. 13 FGDs were conducted comprising 7-10 people per focus group, using topic-specific interview guides. KIIs and FGDs with local citizens, *soum* officials, business people and civil society representatives were used to explore socio-economic themes in further detail.

The data gathered using the household questionnaire was processed using Statistical Package for the Social Sciences (SPSS). A large amount of secondary data was also collected and analysed to describe the current socio-economic conditions of the Project Area, and a list of documents reviewed is presented in the Appendices section. Appendix A provides detailed information on the baseline methodology, in addition to baseline references, the Stakeholder Engagement and Data Collection Plan, and the Communications Protocol.

#### **4.2.4 Assessment of Impacts and Mitigation**

The impact assessment methodology serves to provide a means of characterising those impacts identified and their overall residual significance. Project social impacts and recommended mitigation measures to minimise those impacts are identified in Chapter 7.

The impact assessment methodology for planned impacts takes into consideration an impact's nature, type and degree of reversibility, its magnitude and nature of the resource/receptor to yield an impact's overall significance. Unplanned impacts are assessed by using an impact's significance which is termed "consequence" in this respect, and introducing the concept of probability, or the likelihood of an impact occurring. In both cases, the impact's significance prior to and after mitigation is assessed. Impact after mitigation is referred to as residual impact.

The assessment of impacts is an iterative process that considers four questions:

- 1. Prediction** - what will happen to local communities as a consequence the Project?
- 2. Evaluation** - does this impact matter? How important or significant is it?
- 3. Mitigation** – if it is significant, can anything be done about it?
- 4. Residual Impact** – is it still significant after the implementation of mitigation?

Where significant residual impacts remain, further options for mitigation may be considered and impacts are re-assessed until they are as low as is reasonably practicable (ALARP) for the Project.

##### **4.2.4.1 Impact Prediction**

There are two stages required to enable the significance of impacts to be identified as follows:

- The impact **magnitude**; which describes how large or widespread is the impact or the level of benefit. The extent of an impact is a function of a range of considerations including:

- Impact area extent (geographical extent and distribution);
- Number of people affected;
- Impact likelihood of occurrence; and
- Impact duration frequency and reversibility.
- The impact **characteristics**; describing the characteristics of the impact in terms of:
  - Complexity or rarity;
  - Ease or difficulty of mitigation or management;
  - Irreversibility;
  - Stakeholder acceptability; and
  - Receptor sensitivity.

For social impacts, it is important to take account of the perception of those affected by the impact. Assessment of the impact significance is the product of a combination of the above two variables. The prediction takes account of mitigation measures that are already an integral part of design. The prediction also takes into consideration any uncertainty about the occurrence or scale of the impact, expressed as ranges, confidence limits or likelihood.

#### 4.2.4.2 [Impact Magnitude](#)

A number of criteria are used to determine the magnitude of an impact. Impacts are initially classified according to their nature, their type and degree of reversibility. Nature is either negative or positive; type refers to whether an impact is direct, indirect, secondary or cumulative; and the degree of reversibility refers to the capacity of returning an impacted resource/receptor to its pre-impact state. Definitions for these terms are presented in Figure 4.2.

**Figure 4.2 Nature, Type and Reversibility of Impact**

##### **Nature of Impact**

- *Negative* – an impact that is considered to represent an adverse change from the baseline or to introduce a new undesirable factor (e.g. increased traffic in the area).
- *Positive* – an impact that is considered to represent an improvement to the baseline or to introduce a new desirable factor (e.g. economic benefits).

##### **Type of Impact**

- *Direct* - impacts that result from a direct interaction between a planned Project activity and the receiving environment (e.g. increased noise)
- *Indirect* – impacts that result from other activities that are encouraged to happen as a consequence of the Project (e.g. attraction of other businesses to the area due to the presence of the mine).
- *Secondary* - impacts that follow on from direct or indirect impacts as a result of subsequent interactions within the environment.
- *Cumulative* – impacts that act together with other impacts (including those from concurrent or planned future third party activities) to affect the same resources and/or receptors as the Project.

##### **Degree of Reversibility**

- *Reversible* - impacts on resources/receptors that cease to be evident, either immediately or following an acceptable period of time, after termination of a Project activity.
- *Irreversible* - impacts on resources/receptors that are evident following termination of a Project activity and which remain for an extended period of time. Impacts cannot be reversed by implementation of mitigation measures.

Determining values is undertaken objectively based on established criteria where these exist, and using professional judgment where the extent of change is difficult to define for some impacts, or where there are no established criteria.

Impact magnitude and sensitivity on a scale of low, medium and high and combining assessments of scale, duration and intensity, are presented in Table 4.1. For social, socio-economic and health impacts, the degree of sensitivity of a receptor is based on individuals' abilities to adapt to changes and maintain their livelihood and health. In this assessment we use the term "sensitivity" to address this concept which we define as: a stakeholder's (or groups of stakeholders') resilience or capacity to cope with sudden changes or economic shocks.

**Table 4.1 Rating Impact Magnitude and Sensitivity**

<b>Rating</b>	<b>Magnitude Definition</b>	<b>Sensitivity Definition</b>
<b>Negligible</b>	Impacts that are practically indistinguishable from the social baseline, or consist of solely localised or short-term effects that are not deemed to adversely affect local people in any significant way.	No adaption required.
<b>Low</b>	Short-term inconvenience caused but with no consequence on long-term livelihoods or quality of life effects. Those affected will be able to adapt to the changes with relative ease and maintain pre-impact livelihood.	The socio-economic assets affected are not considered to be significant in terms of their resource, economic, cultural or social value. Those affected have plentiful capacity and means to absorb changes and maintain livelihoods.
<b>Medium</b>	Primary and secondary impacts on livelihood and quality of life. Those affected will be able to adapt to changes, with some difficulty, and maintain pre-impact livelihood, but only with a degree of support, such as compensation for economic displacement.	The socio-economic assets affected are of local significance to the asset base, livelihoods, etc. Those affected have limited capacity and means to absorb changes and maintain livelihoods.
<b>High</b>	Widespread and diverse primary and secondary impacts likely to be impossible to reverse or compensate. Those affected will not be able to adapt to changes and continue to maintain pre-impact livelihood.	The socio-economic assets affected are specifically protected by national or international policies or legislation and are of significance to the asset base or livelihoods of at the regional or national scale. Those affected have very little capacity and means to absorb adverse impacts and maintain livelihoods.

#### 4.2.5 Evaluating Significance

The next step in the assessment was to take the information on the magnitude of impacts, and explain what this means in terms of its importance to society, so that decision-makers and stakeholders understand how much weight should be given to the particular issue in determining their view of the Project. This step is referred to as the "evaluation of significance".

There is no agreed definition of significance for SIA. For the purposes of this SIA, an impact is considered significant if, in isolation or in combination with other impacts, it should, in the judgment of the SIA professional team, be assessed in the ESIA report so that others can take it into account in making decisions on the Project.

This recognises that evaluation requires an exercise of judgment and that judgments may vary between parties involved in the process. The evaluation of impacts presented in the SIA is based on the judgment of the assessing team, informed by reference to legal standards, current international good practice and the views of stakeholders.

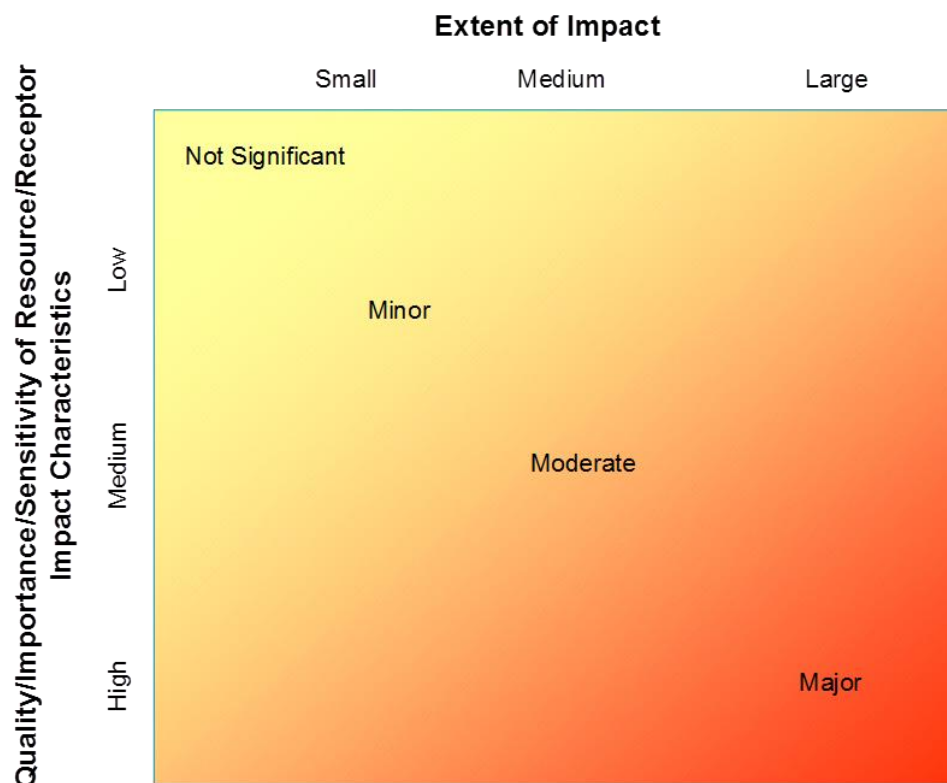
Where standards were not available or provide insufficient information on their own to allow grading of significance, significance has been evaluated taking into account the magnitude of the impact and the importance or quality (and in some instances for people, the sensitivity) of the affected resource or receptor. The quality or importance of a resource or receptor has been judged taking into account, for example, its local, regional, national or international designation, its importance to the local or wider community, its ecosystem function or its economic value. The assessment of the sensitivity of human receptors, for example a household, community or wider social group, takes into account their likely response to the change and their ability to adapt to and manage the effects of the impact.

In assessing the significance of social, socio-economic and health impacts, the concept of perception is explicitly brought into the evaluation of significance such that when a potential impact is of significant stakeholder concern this may be reason to raise the significance rating, for example from minor to moderate. There is an inherent variability in the significance of social and socio-economic impacts that is introduced by the human factor. This variability can arise as a result of such matters as:

- The range of ways in which the individuals making up a group / community / population may respond to a potential impact;
- Preconceived opinions or perceptions of the existing conditions or nature of an impact and how it will affect them; and
- The range of degrees of vulnerability to the consequences of an impact within a community (e.g., due to age, gender, economic status, level of education, etc.).

Evaluation and characterisation of the potential impacts was based on the criteria set out in Figure 4.3. Using these criteria, professional judgment was employed based on social science expertise and experience on similar projects. This assessment also took into account previous experience in the region regarding how individuals and communities have responded to the mining industry in general and to projects of this nature.

Magnitude and sensitivity have been examined in combination to evaluate whether an impact is significant, and if so its degree of significance. The principle is illustrated in Figure 4.1.



**Figure 4.3 Evaluation of Significance**

Potentially significant impacts on a resource or receptor (people) are identified and assessed for each phase of the Project. The impacts assessed result from Project activities that take place during the various project phases (i.e. mine construction, operation and closure). The assessment of impacts on a resource/receptor is described in a systematic manner under three subheadings:

- **Impact discussion** – a discussion of the sources of potential impact from Project activities and of the predicated impacts (including significance rating) prior to the incorporation of mitigation. Any methodology considerations for the specific topic are also presented;
- **Incorporation of mitigation** - the key mitigation measures to be adopted, as well as a discussion on the various mitigation alternatives considered; and
- **Significance of residual impacts** – an indication of the significance of the residual impacts (minor, moderate or major).

Table 4.2 to Table 4.4 provide a summary of attributes used to determine the magnitude and significance of an impact (positive or negative) on resources in the Project area.



**Table 4.2 Definitions of Ratings for Effects**

Characteristics	Status	Definition	Criteria
Magnitude (direct / indirect)	Positive	Major	Substantial improvement over baseline conditions. Easily observed improvement. Substantial action resulting from stakeholder requests.
		High Moderate	Self-evident improvement relative to baseline conditions. Some observed improvement. High moderate action resulting from stakeholder requests.
		Low Moderate	Measureable improvement relative to baseline conditions. No immediately observed improvement. Moderate action resulting from stakeholder requests.
		Minor	Minor improvement to baseline conditions. Change not measurable or observable.
	Negative	Major	Substantial deterioration or harm to receptors. No recovery potential. Aspect has an inherent value to stakeholders. Identified threshold often exceeded.
		High Moderate	Self-evident deterioration or harm to receptors. Limited recovery possible. Aspect has some value to stakeholders. Identified threshold occasionally exceeded.
		Low Moderate	Measureable deterioration or harm to receptors. Good recovery possible. Aspect somewhat sensitive. Identified threshold rarely or possibly exceeded.
		Minor	Minor deterioration, nuisance, or harm to receptors. Full recovery possible. Aspect not particularly sensitive / no measurable change. Identified threshold not expected to be exceeded.
		Continuous Aspects	Intermittent Aspects
Duration Frequency	Short-term Low frequency	Less than four years.	Occurs less than once a year.
	Medium	More than four years up through until closure activities are complete; life of the Project (17 years).	Occurs less than ten times a year but more than once a year.
	Long term High frequency	During the life of the Project and expected to remain following closure activities.	Occurs more than ten times a year.
		Socio-economic	
Spatial Range	Small	Within the Project area.	
	Intermediate	Within the region.	
	Extensive	Beyond the region.	



#### 4.2.6 Characterising Significance of Effects

Determining how significant an impact will be is based on determining the magnitude or duration and spatial extent of the impact. A matrix illustrating the criteria used to define the magnitude of an affect is provided in Table 4.3.

**Table 4.3 Definition of Ratings for Potential Impact Significance**

Magnitude	Duration	Spatial Range		
		Small	Intermediate	Extensive
Major	Long/high	High	High	High
	Medium	Moderate	High	High
	Short/low	Moderate	Moderate	High
High Moderate	Long/high	Moderate	Moderate	High
	Medium	Minor	Moderate	Moderate
	Short/low	Minor	Low	Moderate
Low Moderate	Long/high	Minor	Moderate	Moderate
	Medium	Minor	Minor	Moderate
	Short/low	Very Low	Minor	Minor
Minor	Long/high	Very Low	Minor	Minor
	Medium	Very Low	Very Low	Low
	Short/low	Very Low	Very Low	Very Low

Assessing the magnitude, duration, spatial extent and probability of an impact is important for developing management plans designed to mitigate Project impact. Management plans for the Project are presented in the SMP document prepared for the Project.

**Table 4.4 Definition of Rating for Probability**

Probability	Descriptive Percentage	Relative Occurrence in Mining Industry
<b>Definite</b>	>75%	Occurs at most mines.
<b>Probable</b>	50% - <75%	Occurs at many mines.
<b>Possible</b>	25% - <50%	Occurs at some mines.
<b>Unlikely</b>	<25%	Occurs at only a few mines.

#### 4.2.7 Mitigation

Impact assessment is designed to ensure that decisions on Projects are made in full knowledge of their likely impacts on the environment and society. A vital step within the SIA process was the identification of measures that will be taken by the Project to mitigate its impacts. The inclusion of stakeholder perceptions prompts the formulation of more rigorous and appropriate mitigation measures which focus on the source of the impact but also consider stakeholder perception; the risk of not addressing stakeholder perceptions is that reputational damage could arise resulting in the loss of a "social license to operate".

In some instances, mitigation is inherent in design and in others mitigation measures were identified during the SIA process. The ongoing SIA process has therefore involved identifying where significant impacts could occur and then working with the Project team to identify and develop technically and financially feasible means of mitigating those impacts to levels that are ALARP. These measures were then agreed to with the Project team and integrated into the Project proposals and the SMP as clear, unambiguous commitments. Where a significant impact was identified, a hierarchy of options for mitigation was typically explored as follows.

- **Avoid at source** – remove the source of the impact;
- **Abate at source** – reduce the source of the impact;
- **Attenuate** – reduce the impact between the source and the receptor;
- **Abate at the receptor** – reduce the impact at the receptor;
- **Remedy** – repair the damage after it has occurred; and
- **Compensate/Offset** – replace in kind or with a different resource of equal quality or value.

Compensation/offset is typically seen as a last resort. Compensation or offset does not, however, automatically make an impact “acceptable” or excuse the need to consider other forms of mitigation as discussed in the hierarchy.

#### 4.2.8 Assessing Residual Impacts

Following agreement on mitigation, the SIA team has, where necessary, re-assessed the impacts taking into account the further mitigation commitments integrated into design and operation of the Project. This iterative process was continued until an impact was deemed to be as low as reasonably practicable.

All residual significant impacts are described in the SIA in terms of their overall significance. Where an impact is of more than minor significance the SIA explains in greater detail, if necessary, the mitigation options considered in the assessment and the reasons for their selection/rejection.

The degree of significance attributed to residual impacts is related to the weight the SIA team considers should be given to them in making decisions on the Project and developing conditions this is described in Figure 4.4.

**Figure 4.4 Description of Degree of Significance**

Any **residual major impacts**, whether positive or negative, are considered to warrant substantial weight, when compared with other environmental, social or economic costs and benefits, for those making decisions on the Project; conditions will be expected to be imposed to ensure adverse impacts are strictly controlled and monitored and beneficial impacts are fully delivered.

**Residual moderate impacts** are considered to be of reducing importance to making decisions, but still warranting careful attention to conditions regarding mitigation and monitoring, to ensure best available techniques are used to keep adverse impacts within levels deemed to be acceptable and to ensure beneficial impacts are delivered.

**Minor impacts** are brought to the attention of decision-makers but are identified as warranting little if any weight in the decision; mitigation will be achieved using normal good practice and monitoring will be expected to be carried out to confirm that impacts do not exceed predicted levels.

#### **4.2.9 Cumulative Impacts**

Cumulative impacts have been assessed based on the following considerations:

- There are no known concurrent construction activities for other projects in the area; and
- Planned future developments could act together with the Project to lead to cumulative impacts on resources and receptors.

#### **4.2.10 Addressing Uncertainty**

Even with a final design and an unchanging environment, impacts are difficult to predict with certainty. Predictions can be made using varying means ranging from qualitative assessment and expert judgment through to quantitative techniques. Use of these latter techniques allows a reasonable degree of accuracy in predicting changes to the existing conditions and making comparisons with relevant quality standards. Where assumptions have been made, the nature of any uncertainties which stem from the “prediction” process need to be presented.

Uncertainty can also arise as a result of the stage reached in the design process at the time of preparation of the SIA report. Where design is still carrying forward options, or where it is yet to develop final detail, some level of uncertainty in assessing the resultant impacts is inevitable. Where this uncertainty is material to the findings of the SIA, it needs to be clearly stated. The general approach then is to take a conservative view of the likely residual impacts and propose mitigation measures, for inclusion in the Management Plan, accordingly.

#### **4.2.11 Social Management Plans**

It is important to note that because an SIA is based on predictions made in advance of an activity taking place, it effectively makes assumptions on potential impacts which are subject to certain controls (or mitigation measures). If these controls are not implemented, then the value of the SIA is undermined as a tool for Project decision-makers. Alternatively, there may be some uncertainty about the effectiveness of certain mitigation or management measures and hence, particular impacts may need to be monitored during the project.

Therefore, once potential impacts have been identified and mitigation measures have been developed and described in the SIA, their integration within the Project scope and plan is essential in order to ensure their future implementation. In order for this to be successful, a statement of the responsibility, timing and reporting requirements associated with each measure or set of measures is drawn together.

The vehicle by which the conclusions of this assessment will be turned into specific actions will be the Project SMP, which sets out the basis for delivering the mitigation commitments. A Project SMP Framework has been prepared and disclosed during disclosure phase, while detailed SMPs will be developed prior to construction.

#### **4.2.12 Reporting and Disclosure**

This SIA will be disclosed to the relevant stakeholders, including local communities, in line with the requirements of the EBRD Performance Requirements and the process set out in the Stakeholder Engagement Plan for the Gatsuurt Project.

### 4.3 SOURCES OF INFORMATION

The key information sources used in the preparation of this Social Impact Assessment were:

- Socio-economic Baseline Study for the Gatsuurt Project (June 2015), Sustainability East Asia.
- Gatsuurt Mining Impact Area, the Mandal, Bayangol *Soums* Socio-Economic Health-Culture Baseline Study Report (Mongolian Centre for Development Studies, November 2011).
- Centerra Book of Standards (Draft, 2012).
- Overview of CSR Activities in Mongolia (BGC, 2014).
- Assessment Of The Community Investment Of Boroo Gold 2006-11 (Training Evaluation Research Institute, 2012).
- Gatsuurt Project Overview Presentation (BGC, March 2015).
- Grievance Management and Resolution Standard V.1 (Centerra, Jan 2014).
- Gatsuurt Land Use Study (CPR, 2011).
- Road Commissioning Act (Mandal *Soum* Government, 2010).
- Gatsuurt Feasibility Study (Environmental and Social) (SNC Lavalin, Feb 2014).
- Boroo Social Closure Impact Assessment (Citrus, 2014).
- Centerra Fact Sheets and Work Book (2011).
- Stakeholder Engagement Plan (2012, updated 2015).
- DEIAs for Project components:
  - BIOX® Plant DEIA (Nature Friendly LLC, 2010).
  - Gatsuurt Mining DEIA (Nature Friendly LLC, 2009) and Gatsuurt Mining DEIA Addendum (Eco Trade LLC, 2014).
  - Gatsuurt Haul Road DEIA (Gazar Eco, 2006).

## **5. STAKEHOLDER ENGAGEMENT**

### **5.1 PROJECT CONSULTATION**

Centerra's goal in consultation and engagement is to ensure the timely provision of relevant and understandable information provided well in advance of commencement of any activity to affected communities. It is also to create a process that provides opportunities for stakeholders to express their views and concerns and allows CGM to consider and respond to them. Centerra is committed to following the key principles of effective stakeholder engagement, including:

- Providing meaningful information in a format and language that is readily understandable and tailored to the needs of the target stakeholder group(s);
- Providing information in advance of consultation activities and decision-making;
- Disseminating information in ways and locations for easy access by stakeholders;
- Respect for local traditions, languages, timeframes, and decision-making processes;
- Two-way dialogue that gives both parties the opportunity to exchange views and information, to listen, and to have their issues heard and addressed;
- Inclusiveness in representation of views, including women, vulnerable and/or minority groups;
- Processes free of intimidation or coercion;
- Clear mechanisms for responding to people's concerns, suggestions, and grievances; and
- Incorporating stakeholder feedback into project or program design, and reporting back to stakeholders<sup>17</sup>.

The Gatsuurt Project has a history of over twenty years, including investigation and consultation with various parts of Government and the communities living and working in the area. From 1997-2006, CGM, via its affiliated and predecessor companies, spent more than USD\$50 million on exploration projects in Mongolia which led directly to discovery of the Gatsuurt hard rock gold deposit in 1998. The first Gatsuurt hard-rock gold deposit feasibility study was completed in 2005. The Mongolian Mineral Experts Council (MEC) was the authority assigned to the approval of mineral reserves, which it did for Gatsuurt in 2007 and the Feasibility Study in 2008. Reserves were increased in 2010 and in December 2013, this updated reserve was approved by MEC. April 2014 saw an update of the Feasibility Study, which was also approved by MEC. Parliament adopted a resolution to designate the Gatsuurt deposit as a mineral deposit of strategic importance in January 2015. Currently, the working groups appointed by the ordinance of the Prime Minister are undertaking detailed studies and analyses in cooperation with the relevant ministries, government agencies, professional associations and scientists. This includes a working group on community consultation.

Consultation with communities has included that required by the Government of Mongolia during the preparation of DEIA documentation for all components of the Project, as well as consultation undertaken by CGM. The Gatsuurt Project has been managed as an operational mine since 2004, and

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<sup>17</sup> CGM Stakeholder Engagement Plan (2012).

required statutory consultation for each of the DEIAs developed for the Project (as listed in Section 4.3).

Consultation has occurred through the development of particular (non-statutory) studies in the Gatsuurt Project area, revealing the following issues from the community described below. Some issues have been resolved over time between CGM, community members and relevant authorities, while other issues are emerging.

The first PCDP was prepared in 1999 for the Boroo Gold Project. It should be noted that Gatsuurt was mentioned but not a key focus of this document. At this time, the issues of concern for local stakeholders were: Employment, Education, Transport, and Medical Facilities.

The 2010 Land Use study revealed the following issues from the community:

- Preservation of the grave sites at Noyon Mountain (Response from CGM: Chance Find Protocol developed, mapping to show sites outside licence area)
- Changed access to water for livestock grazing in the mine licence area (Response from CGM: installation of two wells in Tunkhel)
- Loss of Children's Camp (Response from CGM: Compensation paid to the camp owner and construction of a new facility in 2011)
- Other mining licences in the area (Response from CGM: mapping including old alluvial mines and (what were then) current illegal mines, for joint discussion).

Participants in the research expressed that rehabilitation of Gatsuurt should mimic the original state of the environment as closely as possible<sup>18</sup>.

The 2015 Intangible Cultural Heritage Survey<sup>19</sup> sought community views on that topic, expressing the need for ongoing strengthening of relationships between herders, citizens and CGM, including participation in joint meetings in which considerations will include co-existence of livestock breeding, farming and mining.

## **5.2 SUMMARY OF PREVIOUS STAKEHOLDER ENGAGEMENT ACTIVITIES**

As mentioned above, there has been interaction and consultation with the local public and other stakeholders on the Gatsuurt Project since approximately 1997. Related to this has been the engagement conducted by Centerra for the Boroo Gold Mine, which has involved many of the same key stakeholders. As such, Centerra has a long history of engagement in the Project area, in addition to established relationships with many stakeholders. Stakeholder engagement has been an on-going process throughout the local EIA process and through the development of the Social Impact Assessment (SIA - conducted during 2015). Four distinct engagement phases are relevant to the Gatsuurt Project SIA:

- EIA Baseline Engagement Phase (complete);
- SIA Baseline Engagement Phase (complete);

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<sup>18</sup> Land Use Study, CPR 2010.

<sup>19</sup> Mongolian Academy of Sciences, Institute of History and Archaeology (MASIHA), 2015.



- ESIA Disclosure & Consultation Phase (currently underway); and,
- Ongoing engagement after the ESIA disclosure process is complete and throughout the Project life cycle.

Stakeholder engagement for the Gatsuurt Project Environmental Impact Assessment was completed in 2014 by Nature Friendly LLC and included the following key activities.

- Meetings with local herders and citizens
- Meetings with local government (khural and bagh) representatives and leaders
- Site tours of the Gatsuurt Project for Members of Parliament, Government Ministers, officials, local citizens and local leaders
- Meetings at Community Information Centres
- Distribution of print materials, fact sheets and newspaper articles; and
- Presentation to Government Joint Working Group meetings.

During the SIA baseline fieldwork (April-May 2015) the focus of engagement was primarily on gathering information and opinions from stakeholders. The social baseline study was preceded by an initial scoping consultation period with key internal and external stakeholders. Scoping with key internal stakeholders was conducted, both in Ulaanbaatar at the Centerra head office and through consultation with key Company and Lender representatives on site to verify the initial document review, to assess the Project Area of Influence, and conduct some initial public consultation. The social baseline study involved extensive engagement with Project stakeholders in during April-May 2015, including a household survey, Key Informant Interviews, and Focus Group Discussions. The specific objectives of engagement during this baseline phase were to:

- Identify potential impacts and issues that will be covered in subsequent phases
- Further identify stakeholders related to the Project;
- Identify and gain access to relevant data for the baseline;
- To gather stakeholder opinions on the proposed project and ensure that these opinions are fed into the assessment process;
- To gather stakeholder feedback on the development of management and mitigation measures of potential impacts, particularly where stakeholders have a potential role to play in these measures.

### **5.3 PUBLIC DISCLOSURE**

Materials for public disclosure have been developed by CGM to meet Project commitments to the provision of meaningful and accessible information for communities potentially affected by the Project. These include:

- Disclosure of DEIAs as required under Mongolian regulation;

- Powerpoint presentations to stakeholders including: CGM's Joint Working Groups; Government organisations and Parliamentary members; community leaders; Community Development Fund partners and beneficiaries; *soum* and *bagh* meetings<sup>20</sup>;
- CGM Community Handbook, developed in 2011, alongside maps and a poster series for display at the CGM information centres in Zuunkharaa, Baruunkharaa and Tunkhel. The Handbook (or 'Fact Sheets') were developed and distributed in a binder format for members of the community in the Gatsuurt area of impact to address key community concerns expressed in consultative meetings. Key topics include: Introduction to Centerra and the Responsible Mining Initiative in Mongolia; the Community development Fund and other economic contributions by the Company; mining and licencing essential information; potential environmental impacts, and reclamation; and
- Monthly local newspaper (KharaaNews) is distributed to local citizens in Bayangol, Mandal *soums* and Tunkhel *bagh*.

The activities to be undertaken to support public disclosure of the ESIA disclosure package of which this SIA forms a part, is detailed in the Gatsuurt Project Stakeholder Engagement Plan (SEP).

## 5.4 ONGOING ENGAGEMENT

Ongoing engagement is undertaken with CGM stakeholders in order to provide a foundation for a cooperative relationship with the identified stakeholders. Constructive communication is an objective of the Company, to:

- Reaffirm the relationship of trust between the Company and the local communities;
- Foster a relationship of trust and understanding between Company management and local governments;
- Relieve any tensions between the Company and the local communities;
- Anticipate and counteract attempts at misrepresenting the Company's activities;
- Promote the contribution of the Company towards improving living standards in impact areas;
- Alleviate concerns related to the introduction of new processes and equipment through facts and evidence-based presentations;
- Improve the internal Company communication and thereby increase efficiency of the work process as a whole.<sup>21</sup>

CGM has steadily increased capacity in and implementation of its corporate responsibility goals, through the development of systems and approaches to engagement that seek to deliver sustainable outcomes, and engagement of staff with responsibility for these actions. Achievements include strengthening of the Company's governance and management activities.

The significant mechanisms through which CGM is achieving ongoing engagement are through the Joint Working Group (JWG), established in June 2010. The JWG purpose is to create conditions for mutually

<sup>20</sup> Including most recently, Gatsuurt Project Overview (3 March 2015).

<sup>21</sup> CGM Stakeholder Engagement Plan (2012).

beneficial cooperation in promoting community relations, encouraging community development, creating steady jobs and reclaiming the environment in compliance with the laws of Mongolia, in developing the Gatsuurt Project. The JWG will function until Gatsuurt Project closure, and is comprised of representatives of local government and Citizens Khurals in Bayangol and Mandal *soums* (including an equal number of representatives of both Parties). Both Parties nominate candidates as members of the Joint Working Group and endorse the candidates at a joint meeting. Meetings are held not less than once per quarter on a rotation at Boroo site, Gatsuurt site or the CGM Ulaanbaatar office<sup>22</sup>.

Additional successes in engagement governance and management include:

- Appointment of a Community Relations Manager and a Community Relations Advisor based in Ulaanbaatar; and Community Relations Officers in Tunkhel *bagh*, Zuunkharaa and Baruunkharaa.
- Appointment of a senior manager to the role of "CSR Champion".
- Appointment of a Media Relations Manager whose role includes both public relations and community development activities.
- Instituted a monthly meeting of Community Relations staff in Ulaanbaatar to review a regularly updated Action Log.
- The monthly site and UB employee communications meetings include updates about significant community relations activities.

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<sup>22</sup> CSR Activities in Mongolia (BGC, 2014).

## 6. SOCIAL SCOPING ISSUES IDENTIFIED

The following section discusses the socio-economic baseline of the project using the methodology described briefly in Section 4, and provided in detail in Appendix A.

### 6.1 DEMOGRAPHY

#### 6.1.1 Introduction

This section discusses demographics in the Project Area of Influence, including the main characteristics of the population, the age-gender structure, urban and rural population dynamics, migration, literacy, education, ethnicity and religion.

#### 6.1.2 Reference Data

The reference period for this Social Baseline Study is the period between 2012 and 2015. The data sources include secondary sources such as national statistics, population and housing censuses, and official statistics obtained from the *aimag* and *soum* local governors' office. Primary sources include interview records from KIIs and FGDs with local community members, and the results from the household survey conducted among households.

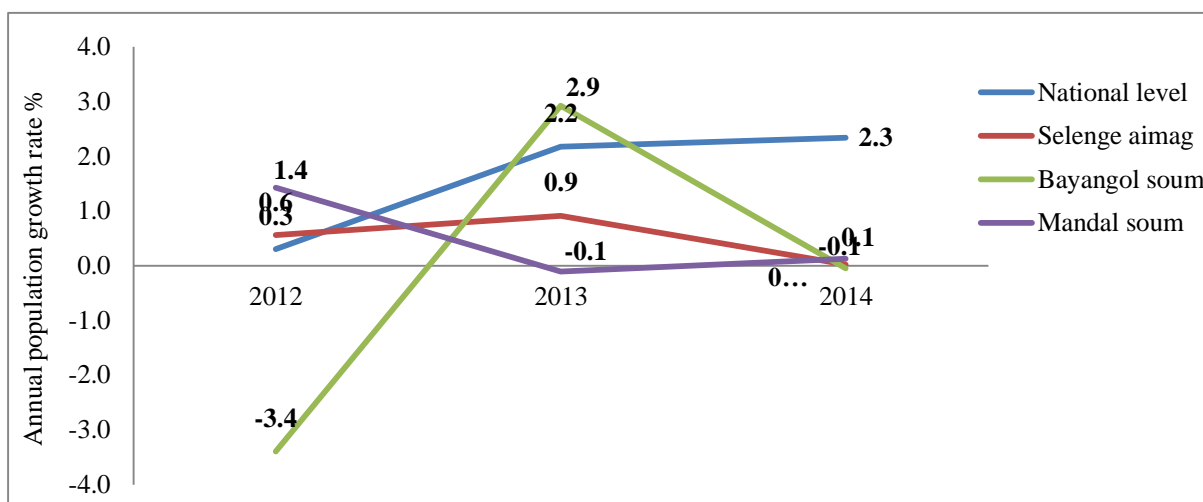
Tables and figures not included in the body of this Section can be found in Appendix D.

#### 6.1.3 Population and Migration

With a total land area of approximately 1.6 million square kilometres, Mongolia's population of 3 million people makes it the world's most sparsely populated country. Almost 4 percent (3.6%) of the country's total population reside in Selenge *aimag*. The average *soum* population and territory is 3,000 people and 4,700 square metres (sq.m) respectively, whereas Selenge is more densely populated, with the average for *soums* in Selenge *aimag* is 4,900 people and 2,400 sq.m. The national average for *baghs* is 600 people and 1,000 sq.m, while on average, *baghs* in Selenge *aimag* have 1,500 people in a territory of 700 sq.m<sup>23</sup>. Selenge's relatively populous nature is due both to its proximity to transport infrastructure (the Trans-Siberian Railway passes through it) and therefore economic markets, as well as its good agricultural land which facilitates the production of approximately 40% of Mongolia's grain.

As of 2014, the population of Selenge *aimag* was estimated as 105,300, 5.3% of which reside in Bayangol *soum*, and 24.4% in Mandal *soum*. The population density of Mongolia is 2.0 persons/sq.m. In comparison, population density in Selenge *aimag* is 2.5 persons/sq.m, 2.8 persons/sq.m in Bayangol *soum*, and 5.3 persons/sq.m in Mandal *soum*. Indeed, Mandal *soum* has the biggest *soum* population in Mongolia, estimated at 25,600 people. Mongolia has seen sustained population growth for the past 3 years, while Selenge *aimag* has experienced mixed population growth, with increases in specific demographics, but an overall trend of declining annual population growth compared to the national rate.

<sup>23</sup> NSO (2015). Selenge *aimag*'s Statistical Yearbook, 2014, Mongolian National Statistical Office, page 14, Ulaanbaatar.



**Figure 6.1 Annual population growth at the national, *aimag* and *soum* level**

Declining population growth in Selenge *aimag* can be partly attributed to general population fluctuation within the *aimag*, and the increasing urbanisation of the population (movement from rural areas to *soum* /*aimag* centres and a general trend in regional migration to the capital city, Ulaanbaatar). Of the total households surveyed in Bayangol and Mandal *soums*, over 80% are native households while the rest are migrant households. Among the migrant households 85.7% are officially registered whereas the rest are considered unregistered at the *soum* level. Unregistered households face many problems, such as inability to access social services and welfare, including public schooling, hospitals, social insurance, pensions, government and child allowances, among others. Unregistered households are also unable to vote in local elections. The likely reason for not registering is that these households are already registered in another area, and choose to access the above-mentioned social and welfare services elsewhere.

As shown in Table 6.1, migration to Selenge *aimag* has decreased since 2012, with the tendency for out-migration more apparent. This trend is further illustrated in Table 6.1 (above), which shows high population fluctuation in the more rural Bayangol *soum* (-3.4% in 2012, 2.9% in 2013 and -0.1% in 2014), and more constant population growth in Mandal *soum* with its larger urban centre. Specifically, of the total population of Mandal *soum*, 70.3% live in the *soum* centre<sup>24</sup>.

**Table 6.1 Migration trends in Selenge *aimag*, 2012-2014**

Migration	2012	2013	2014
Population migrated to Selenge	1,789	1,690	1,430
Population migrated out of Selenge	2,600	3,548	3,129
Net migration	-811	-1,858	-1,699
Net migration rate	-18.5	-35.5	-37.3

In discussing migration issues during KIIs with *soum*-level officials, the decline in migration to Selenge *aimag* is attributed to the difficulties experienced by migrants in obtaining access to pastureland and the fact that existing land is degraded through overgrazing and therefore a less attractive proposition

<sup>24</sup> Statistical report of Mandal *soum*, as of 2013.

for migrants.<sup>25</sup> In contrast to the data (see Table 6.2) and to officials' views, participants in a Bayangol *soum* FGD expressed the belief that in-migration of herders is increasing (i.e. rural in-migration), which means more animals, greater impacts to pastureland, and more frequent land use disputes (i.e. between in-migrant herders and crop farmers and in-migrant herders and existing herders).<sup>26</sup> So, while actual migration is declining, there is a perception at the ground-level that there is an influx of migrant herders, who are viewed as a key source of pastureland degradation and land use conflict (see section 6.6 Land Use and Natural Resources for further discussion).

**Table 6.2 Urban and rural population, 2012-2014<sup>27</sup>**

Aimag, soum	2012			2014		
	Total	Percentage (%)		Total	Percentage	
		Urban	Rural		Urban	Rural
Population						
National level	2,809,693	67.2	32.8	2,937,927	66.4	33.6
Selenge aimag	104,282	29.5	70.5	105,253	33.8	66.2
Bayangol soum	5,438	NA	NA	5,594	66.6	33.4
Mandal soum	25,689	NA	NA	25,693	69.0	31.0
Household						
National level	768,263	63.7	36.3	823,412	65.3	34.7
Selenge aimag	29,416	28.6	71.4	30,040	31.2	68.8
Bayangol soum	1,590	NA	NA	1,675	65.0	35.0
Mandal soum	7,322	NA	NA	7,382	70.3	29.7

Note: The category "city" includes *aimag*, *soum* and *bagh* centres.

### 6.1.4 Age and Gender

Declining birth rates<sup>28</sup> since 1990s means that Mongolia comprises a relatively young and economically active population.<sup>29</sup> Two thirds of the population are of labour age at the national level. Youth aged 20-29 and children aged 0-4 years are the largest age groups at the national level. With regard to the age structure of Selenge *aimag* population, 27.2% are children aged 0-14, 66.6% are working-age (15-59), and the remaining 6.2% are the elderly aged over 60. Similarly, in Bayangol and Mandal *soums*, the working age population accounts for 66.2% and 67.2% respectively. In Mandal *soum*, the working age population is dominated by youth between the ages of 20-24. In Bayangol the largest group is children aged 0-4, revealing the slightly increased birth rate in this *soum*. In light of the above figures, the key challenges confronting Mandal *soum* is driving vocational educational, economic opportunities and work places for its large youth population. In Bayangol *soum*, the key challenge is providing sufficient educational facilities, especially pre-school, primary and secondary school, as well as primary health services.

The latest national population and housing census (conducted in 2010) reports that the sex ratio (the number of females per 100 males) in Selenge *aimag* reached 103.6, a decrease by 0.9 points compared to the previous census. The sex ratio drops significantly as age increases. This can be explained by the higher death rate of males compared to females. For example, among the elderly the sex ratio drops to 73.4 at the age of 70 or over. The sex ratio in Bayangol *soum* is 106.6 (higher for males than

<sup>25</sup> KII with Mandal *soum* Deputy Governor and *soum* Agricultural Officer.

<sup>26</sup> FGD with Bayangol *soum* centre Citizens Group

<sup>27</sup> Local Governor's Office (2015). The socio-economic indicators of Selenge *aimag*-2014, Local Governor's Office of Selenge *aimag*.

<sup>28</sup> Birth rate; crude (per 1,000 people) in Mongolia was last measured at 22.66 in 2013. It measured 19.9 in 2000 and 32.6 in 1990. Crude birth rate indicates the number of live births occurring during the year, per 1,000 population.

<sup>29</sup> Trading Economics. 2015. [www.tradingeconomics.com/mongolia](http://www.tradingeconomics.com/mongolia).



females) while it is 97.7 for Mandal *soum* (higher for females than the males); this ratio has remained consistent throughout the last decade.

In the past 3 years, Selenge *aimag* has seen an increase in marriages and a decrease in divorces. In Selenge *aimag*, out of the total number of mothers, 89.5% are married, which is slightly higher than national average. In contrast over the same period, both Bayangol and Mandal experienced an increase in both marriages and divorces. This key risk associated with an increasing divorce rate in Mandal and Bayangol is the associated increase in female-headed households. Female headed households are more vulnerable than those headed by men (linked to the gender gap in access to economic resources, among others). This risk is borne out in practice, as the statistics show that in Mandal *soum* female headed households increased from 134 in 2012 to 167 in 2013 – a growth of 33 households. This pattern is also witnessed at the *bagh* level, where Tunkhel *bagh* recorded an increase of 11 female headed households in the same period.<sup>30</sup>

### 6.1.5 Education and Literacy

The transition period in Mongolia in the 1990s presented a major challenge for the education sector to maintain the high levels of educational attainment and literacy that had been achieved under a centrally planned system. The economic difficulties of the early transition years had a negative impact on the maintenance of school facilities, delivery of school inputs and overall provision of education services. Key issues in the current Mongolian education system are (i) poor quality and relevance of the current curriculum for primary and secondary education, ((ii) inadequate teaching qualifications and skills, (iii) lack of consistent education standards (iv) weak learning and teaching environments in schools, and (v) supply-driven vocational education for youth. However, in spite of the challenges, Mongolia has a literacy rate of around 98%, with over 90% of the population attending secondary school<sup>31</sup>.

#### **A Comparison between the Mongolian and Australian Educational System:**

In order to contextualise the Mongolian education system, a comparison with the Australian education system (i.e. international context) is useful.

Both Mongolia and Australia have a 12 year schooling system. The official enrolment age is 6 years' old in both countries. The Mongolian Government initiated transforming primary and secondary schools into a 12 year system in 2008. This transition will be complete by 2016. In Mongolia, there are 6 years of primary, 3 years of lower secondary and 3 years of upper secondary schooling. In Australia there are 7 years of primary and 5 years of secondary schooling. In Mongolia, the technical education and vocational training (1-2.5 years) sub-sector comprises specialised upper secondary schools as well as post-secondary diploma programs housed in higher education institutions. In Australia, each state has a Vocational Education and Training or Technical and Further Education system. These prepare people for work in careers that do not need a university degree.

In Mongolia, higher education is awarded by colleges, institutes and universities. At the higher education level, bachelor programs usually last four to five years and six years for medical programs. Masters programs usually require one to two years and doctorate programs require three to four years to complete. Likewise, Australian higher education awards are classified as follows certificate, diploma and associate degrees<sup>32</sup>.

The household survey revealed that 91.1% of respondents are educated while the remaining 8.9% do not have any education and / or are illiterate. Out of the total number of households surveyed, 12% have a primary education, 12.3% have a secondary education, and approximately 40% have a

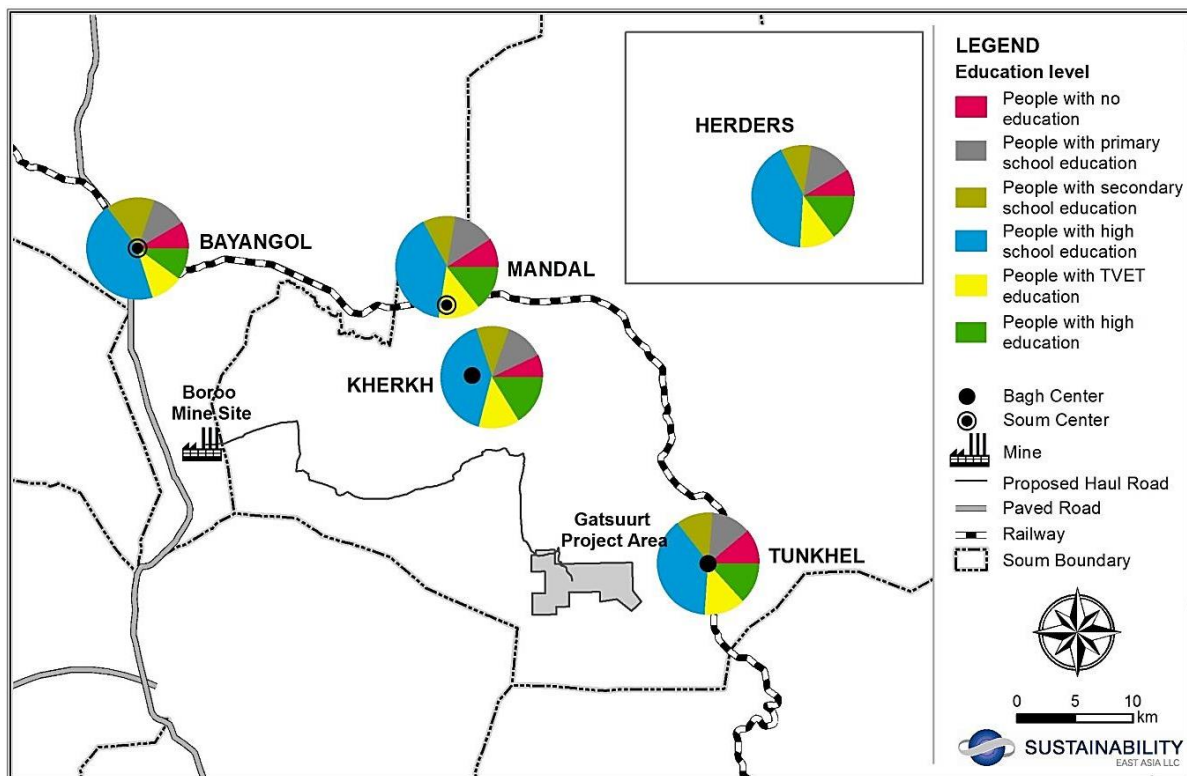
<sup>30</sup> NSO (2015). Selenge *aimag*'s Statistical Yearbook, 2014, Mongolian National Statistical Office, page 153, Ulaanbaatar

<sup>31</sup> UNICEF. Mongolia at a Glance - Statistics. [www.unicef.org](http://www.unicef.org).

<sup>32</sup> Comparison between Mongolian and Australia Education System. 2013.

<http://www.ukessays.com/essays/education/comparison-between-mongolian-and-education-essay.php#ixzz3h4LV2rJ7>

vocational qualification, with the remaining 13% having higher (tertiary) education. As Table 6.3 illustrates, the population in the Project Area of Influence is generally highly educated (combined population having vocational qualification or tertiary education is over 50%). Herder households (14% of the total households surveyed) are the largest percentage of respondents' with only a primary education. The highest percentage of the population with no education at all is seen in Tunkhel *bagh* (11%). This can be explained by the remote location of many households from schools in Tunkhel *bagh* centre. This is a key issue for its citizens, as Table 6.3 also indicates that Tunkhel's general levels of education lag behind those of Kherkh *bagh*, and Mandal and Bayangol *soums*. Poor access to education has long-term ramifications, not only on the lives of children themselves, but on poverty eradication, human development and economic progress of broader communities. Tunkhel *bagh* citizens may therefore be less equipped to take advantage of any economic / employment opportunities presented due to the lagging education indicators. Figure 6.2 depicts the above discussed education levels in the Project area on a map.



**Figure 6.2 Education levels in the Project area**

Out of the total households surveyed, 3.4% of children aged 6-18 have dropped out of school. School dropout numbers are spread consistently, with 4.1% of dropouts in Mandal *soum*, 3.1% in Tunkhel *bagh*, and 5% in Kherkh *bagh*. Dropouts are predominantly from herder households, with a total of 6.5 % of herder households' children classified as dropouts and compared to only 1.2% of non-herder households' children. The primary reasons for herders' children dropping out of school are to assist their families with herding responsibilities, due to children having disabilities, as well as a lack of interest, including a parental lack of interest, in pursuing formal education. Only 3 children were involved in informal or rural education programs after they dropped out of school. Education programs are run for households located in remote locations and for those children who might have dropped out

of school and wish to obtain further education. Teachers on these programs are generally sourced from the *aimag* centre. Such programs are mainly supported by donor organisations (UNICEF<sup>33</sup>, World Bank<sup>34</sup>) in partnership with the Mongolian Government.

**Table 6.3 Education level of respondents, by percentage<sup>35</sup>**

Education level	<i>Soum</i>		<i>Bagh</i>			Household		Total
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled	
Uneducated	8.4	9.2	11.0	7.0	8.7	8.5	9.1	8.9
Educated	91.6	90.8	85.0	93.0	91.3	91.5	90.9	91.1
Primary	11.3	13.2	12.8	12.5	12.3	14.0	11.8	12.5
Uncompleted secondary	15.6	10.5	11.7	10.6	14.2	9.8	13.5	12.3
Completed secondary	44.5	39.6	38.4	40.9	44.3	41.9	41.1	41.4
Vocational/collage	10.1	13.1	12.8	12.8	10.7	11.0	12.6	12.0
Higher education	10.1	14.4	13.3	16.2	9.8	14.8	11.9	12.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Number of respondents</b>	<b>416</b>	<b>773</b>	<b>383</b>	<b>359</b>	<b>447</b>	<b>399</b>	<b>790</b>	<b>1,189</b>

### 6.1.6 Ethnicity

There are around 20 different ethnic groups in Mongolia, however it should be noted that ethnicity is not usually a source of unrest or tension in Mongolia. The main ethnic group in Mongolia is the Khalkha (around 75%), which is dispersed throughout the territory of Mongolia. Groups can generally be placed in four culturally distinct clusters, including the Khalkha-Mongols, the Western Mongols or Oirats, North-eastern Mongols (including Buriats), and Turkic speakers (including Kazakhs, Khotod, Tuvinians). Linguistically, Mongolia is quite homogenous, with around 90% of the population speaking one of several similar Mongolian language dialects, and predominately Khalkha Mongol which aligns with the predominant Khalkha ethnic group.

The term *khalkha* has been used at least since the mid-sixteenth century to refer to the nomads of the traditional Mongol heartland of high steppes and mountains. In the twentieth century, they occupied most of the central and the eastern areas of the country. *Khalkha* Mongol is the standard language; it is taught in schools and is used for all official business. The written language is based on the *khalkha* of the Ulaanbaatar region, and when Mongol script was replaced by a Cyrillic alphabet between 1941 and 1946, the Russian Cyrillic was modified to suit the phonetic structure of *khalkha*.<sup>36</sup>

The 2010 census in Selenge *aimag* revealed a similar ethnic profile to the national level. Compared to the previous census, the number of people from the Bayad, Khoton, Uriankhay and Durvud ethnic groups (majority of these ethnic groups are from the Western region) increased, yet the number of people from the Kazakh, Torguud, and Buryat ethnic groups decreased slightly. According to the Internal Migration Study conducted by the PTRC in 2010 the migration flows (from Western *aimags* to Central regions, including Selenge *aimag*) witnessed in the Project area are consistent with national

<sup>33</sup> [www.unicef.org/education/mongolia](http://www.unicef.org/education/mongolia).

<sup>34</sup> [www.worldbank.org/projects](http://www.worldbank.org/projects).

<sup>35</sup> Sustainability East Asia LLC, 2015. Household Socio-economic Survey, 2015.

<sup>36</sup> Robert L. Worden and Andrea Matles Savada, editors. Mongolia: A Country Study. Washington: GPO for the Library of Congress, 1989.

migration trends. Specifically, households tend to move from the West to a temporary base like Selenge, with the final aim of moving to Ulaanbaatar when they are in a financial position to do so. A key reason for choosing Selenge *aimag* is that many households from the West have a strong social and family network in Selenge who can support them temporarily.

*Kazakhs, originally from Western Mongolia, are the second largest ethnic group in Tunkhel bagh at approximately 336 people (the Khalkha are the largest group at approximately 3,400 people). The Kazakh population in Tunkhel bagh is attributed to the appointment of Kazakh people to the wood processing enterprises in the bagh during Soviet times. Moreover, demobilised Kazakh soldiers were also settled in Tunkhel bagh. Most Kazakhs practice Islam, and there is a Mosque in Tunkhel bagh.*  
Sustainability East Asia LLC, Ethnographic Report of the Intangible Cultural Heritage in the Gatsuert Project Area

At the national level, the number of foreign citizens residing in Mongolia for 6 months or longer has increased over 3 times since 2000. The number of citizens from People's Republic of China has been the largest (91.2% of all foreigners) and such growth has been due to development projects using Chinese labour<sup>37</sup>. According to the 2010 national census, there were 16,320 foreign nationals formally registered in Mongolia, of which only 0.3 percent of these were living in Selenge *aimag*. The number of foreign nationals residing for 6 months or more in Selenge *aimag* increased by 98 people compared to the year 2000, which is not a significant number relative to the size of the host population in the *aimag*.

### 6.1.7 Religion

Traditionally, Mongolians practiced Shamanism, a set of beliefs which conceived of the world as an organic whole with particular reference to the "clear blue sky". However, Tibetan Buddhism gained popularity after it was introduced in the 13th century. At the beginning of the 20th century, Mongolia had hundreds of Buddhist monasteries. After the 1921 People's Revolution installed a socialist regime in the country, religious practice was prohibited and political purges in the 1930s nearly destroyed the extensive system of monasteries in the country. Under communist rule, atheism was promoted, monasteries were closed, and shamanistic knowledge and practices were largely lost. From 1945 to 1990, only one monastery (Gandan in Ulaanbaatar) was allowed to operate. The democratic reform that started in the 1990s encouraged freedom of religion, and well over 100 monasteries have since reopened. Kazakh Muslims were also allowed to practice Islam, and there is a minority of Sunni Muslims in the far western regions of Mongolia, most of whom are ethnic Kazakhs. Shamanistic practices have also been recouped and rediscovered during the past few decades.

Over half the Mongolian population identify as Buddhist (see Table 6.4), however, it is evident that religion does not play a major role in the lives of most Mongolian families. Approximately, 61.4% of the population aged 15 and over identify as having a religion or faith and over half (53%) of the population are Buddhists. More females are religious in comparison to males (higher by 8.5%).

Of the total population in Selenge *aimag*, 44.0% identify with a religion and/or faith, which is 17.4% lower than the national average. By gender, 48.9% of women are religious, which is 9.7% higher than men. The detailed breakdown of religion indicates that 38.8% are Buddhists, 1.9% are Muslims, 0.8% are Shamanists, 2.1% are Christians, and the remaining 0.4% represent other religious groups. In the

<sup>37</sup> NSO (2012). Population and Housing Census consolidated results for 2010, Selenge *aimag*, Mongolian National Statistical Office, page 52, Ulaanbaatar.

household survey more than half of the respondents acknowledged that they belong to a particular religious group, which is roughly consistent with the *aimag*-level statistics. Respondents from Kherkh *bagh* had the highest number of religious people at 70.3%, out of which the majority (over 85%) identify as Buddhist. Buddhism has the highest number of supporters in Bayangol, where 92.3% of religious people are Buddhist.

**Table 6.4 Religious status of population aged 15 or over, percentage**

Religions	National level (%)			Selenge <i>aimag</i> (%)		
	Total	Male	Female	Total	Male	Female
No belief or faith in religion	38.6	42.9	34.4	56.0	60.8	51.1
Religious	61.4	57.1	65.6	44.0	39.2	48.9
Buddhist	53.0	49.4	56.4	38.8	34.9	42.7
Muslim	3.0	3.1	3.0	1.9	1.8	2.1
Shaman	2.9	2.7	3.1	0.8	0.7	0.8
Christian	2.2	1.6	2.7	2.1	1.4	1.9
Other	0.4	0.4	0.4	0.4	0.4	0.4

The household survey also revealed that more than 20 percent of Buddhists have their own spiritual teacher and / or monk (see Table 6.5). This figure among herder households is the highest (30.7%). Religious rituals among the population surveyed include seeking spiritual remedies to problems, consulting a spiritual person (teacher / monk) or place of worship (temple / church / mosque) when confronted with life's challenges, depression, failure of self-confidence, or bigger decision-making assistance. Moreover, over 95% of religious people stated that the local community is accepting of their religious beliefs, highlighting a high level of religious tolerance and non-discrimination in the Project area (and in Mongolia generally).

**Table 6.5 Religious status of respondents, by religion and percentage<sup>38</sup>**

Religions	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
% of population with belief in religions	47.4	59.6	50.0	70.3	48.3	58.9	53.7
% of population with own spiritual teacher-monk	21.9	24.7	28.8	22.9	20.8	30.7	20.1
Buddhist	92.3	85.3	81.7	89.2	90.3	89.3	86.4
Muslim	4.6	2.7	1.7	3.6	4.2	1.3	4.3
Shamanist	0.0	2.7	6.7	0.0	0.0	1.3	2.1
Christian	3.1	9.3	10.0	7.2	5.6	8.0	7.1

### 6.1.8 Conclusion

A number of key demographic themes and issues emerged through the conduct of the Social Baseline Study. While actual migration is declining (according to the statistics), there is a perception at the ground-level that there is an influx of migrant herders who are viewed as a key source of pastureland degradation and land use conflict. Notwithstanding the issues surrounding migration, there are unique demographic challenges confronting Mandal and Bayangol *soums*. Due to its large population of youth between the ages of 20 and 24, the key challenge for Mandal *soum* is driving vocational educational, economic opportunities and work spaces for youth. In Bayangol *soum*, the key challenge based on its

<sup>38</sup> Sustainability East Asia LLC, 2015. Household Socio-economic Survey, 2015.

large population of young children is providing sufficient educational facilities, especially pre-school, primary and secondary school, as well as primary health services.

An emerging risk in both Mandal and Bayangol *soum* is the increasing number of female headed households, due in part to an increasing divorce rate. Female headed households are more vulnerable than those headed by men (linked to the gender gap in access to economic resources, among others). Indeed, the statistics show that in Mandal *soum* female headed households increased from 134 in 2012 to 167 in 2013. This pattern is also witnessed at the *bagh* level, where Tunkhel *bagh* recorded an increase of 11 female headed households in the same period.

Tunkhel *bagh* citizens may be less equipped to take advantage of any economic / employment opportunities presented due to lagging education indicators. The highest percentage of the population with no education at all is seen in Tunkhel *bagh* (11%). This is a key issue for Tunkhel *bagh*, as Tunkhel's general levels of education lag behind those of Kherkh *bagh*, and Mandal and Bayangol *soums*. Poor access to education has long-term ramifications, not only on the lives of children themselves, but on poverty eradication, human development and economic progress of broader communities.



## **6.2 SOCIAL STRUCTURES**

### **6.2.1 Introduction**

This Section presents the social structures, including changes, trends and current circumstances thereof at a national level in comparison to Selenge *aimag*, Mandal and Bayangol *soums*, and Tunkhel *bagh*. The content of the report specifically addresses the topics of social development, political history, socio-political involvement of citizens, and voters' evaluation of elected political leaders, formal and informal decision making process, and the current position of status of institutions.

### **6.2.2 Reference Data**

The reference period for the baseline survey is 2012-2015. The secondary data sources include national statistics, population and housing censuses, official statistics from *aimag* and *soum* governors' offices, annual *aimag*, *soum* and *bagh* level reports, and available reports on projects and programs in the Project area. Primary data sources include interview records from KIIs and FGDs with local community members, and the results of the household survey conducted in the Project area.

### **6.2.3 Social Structure and Functions**

#### **6.2.3.1 Governance Systems**

Mongolia is a parliamentary republic in which representatives of the Great Khural (the Parliament) are elected for 4 years by direct universal suffrage. There are 76 seats in the Great Khural and presidential elections take place every 4 years. The 4<sup>th</sup> Constitution of Mongolia was adopted in 1992, which restructured the legislative branch of the government by creating a unicameral parliamentary legislature. The Constitution contains six chapters: Sovereignty of the State, Human Rights and Freedoms, Structure of the State, Administrative and Territorial Units, The Constitutional Court, and Amendment to the Constitution. The Government is comprised of the Executive, Judiciary and Legislature, the powers and election processes for which are presented in Table 6.6.<sup>39</sup>

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<sup>39</sup> Adapted from <http://globaledge.msu.edu/countries/mongolia/government> and <http://mongolianembassy.us/about-mongolia/government-and-politics/#.VZI6j2BzWS0>.

**Table 6.6 Power and election processes of Government bodies**

	Description	Main Powers	Election Process	Election Cycle
<b>Executive</b>	The Cabinet is the highest executive body of Mongolia and is headed by the Prime Minister.	President is mostly a ceremonial role, but serves as the head of State for Mongolia. The prime minister appoints the governors of the 21 <i>aimags</i> of Mongolia and the governor of the capital.	President is elected by absolute majority vote through a two-round system and prime minister is elected by parliament.	4 years
<b>Judicial</b>	The constitution provides for a Judicial General Council to select all judges and protect their rights. The Supreme Court is the highest judicial body. Justices are nominated by the Judicial General Council, confirmed by Parliament and appointed by the President.	Highest judicial body.	Supreme Court judges are nominated by a Judicial General Council, and then confirmed and appointed by the President.	Life appointment
<b>Legislative</b>	The Parliament of Mongolia is referred to as the State Great Khural, which is the highest organ of state power. Parliament confirms the appointment of the Prime Minister and Cabinet ministers.	Draws new laws in conjunction with the Government and decides on their introduction, approves the yearly budget, and has the power to declare war.	The unicameral State Great Khural has 48 members directly elected from 26 electoral districts, while 28 members are proportionally elected based on a party's share of the total votes.	4 years

Governance of administrative and territorial units of Mongolia are organised on the basis of a combination of the principles of self-government and central government. The self-governing bodies at the *aimag*, *soum* and *bagh* are called Citizens Representative Khurals (CRKs). CRKs of *aimags* and the capital city are elected for a term of four years. The competencies of *soum* and district CRKs include “the right to discuss and make a decision on any economic, social and organisational matters other than those matters legally defined within the powers of the President, State Great Khural, Government, ministry and agency, CRKs of higher level and other competent State authorities and officials.”<sup>40</sup> The functions assigned to *aimag*, *soum* and CRKs can be summarised as follows:

- Approval, review and evaluation of Governor’s activities;
- Monitoring and evaluation of Governor’s implementation of the legislation and resolutions passed by the CRK;
- Approval and amendment of socio-economic development strategy;
- Discuss, approve and amend budgets and approve implementation reports;
- Establishment and oversight of Local Development Fund with non-budgetary revenues;

<sup>40</sup> Responsibilities of Citizens’ Representatives Khural. <http://www.khural.mn/en-us/n/8xyy>.

- Coordination of local socio-economic development strategy with regional strategy;
- Imposition of fees and tariffs within limits of law;
- Approve land-use management plans and measures for environmental protection; and
- Exercise of local property ownership rights.

#### 6.2.3.2 Political History

From the Mongolian revolution in 1921, until the emergence of the democratic movement and the fall of the Soviet Union in the 1990s, the Government of Mongolia was modelled on the Soviet system and was led by the Communist Party, the Mongolian People's Revolutionary Party (MPRP). The 1990 democratic revolution enabled a multiparty system of governance to be established in Mongolia, making it the first country in Asia to transition from communism. The 1990 Constitutional amendment paved the way for the creation of opposition parties, a legislative body and the office of the President. The MPRP won 85% of seats in the first multiparty elections in 1990, while the Democratic Party (DP) did not succeed in winning a majority until 1996. Of the 6 presidential elections held in Mongolia since 1993, the MPRP candidate has won 3 times, and the DP candidate has also won three. The key political parties in Mongolia currently are:

- Mongolian People's Party (MPP), which is the former MPRP;
- The New Mongolian People's Revolutionary Party (New MPRP), established in 2010 by a breakaway faction of the MPP;
- DP, formed through a merger of democratic revolutionary parties in 2000; and
- Civil Will-Green Party (CWGP), established in 2000.

Between 2004 and 2008 the Government was led by a coalition of the MPRP and the DP. A coalition was again established in the period 2008-2012 between the DP and the MPP. From 2012, another coalition Government has been in place (see discussion below). The next elections are to be held in 2016.

#### 6.2.3.3 The Current Government

Mongolia's parliamentary elections were held for the sixth time in June 2012, with the results spread as follows: DP-27; MPP - 24; MPRP-MNDP Coalition - 17; CWGP - 4; independent candidates - 2; MGP - 1; and, Third Force Coalition - 1.<sup>41</sup> With the most seats, the DP was entitled to form a new Government, and chose to form a coalition with the Justice Coalition, comprised of the New MPRP, as well as the Mongolian National Democratic Party (MNDP), and the CWGP as the two minority parties. This coalition Government has been named the "Solution Government" in reference to its mandate to effect a turn-around of the country's flailing economy and foreign investment climate.<sup>42</sup> This period of Government has had challenges, which in late 2014 saw a new Prime Minister elected (Chimed Saikhanbileg) based on a vote of no confidence for the incumbent, Norov Altankhuyag. Saikhanbileg was largely seen as the figure to re-energise the stalling economy, and resolve the gridlocked Oyu Tolgoi expansion project investment agreement (resolution of which would send a positive message to foreign investors), and enact important legal reforms to create a more stable environment. Since his

<sup>41</sup> Mongolian Elections' result for 1992 - 2012, page 300 – 301.

<sup>42</sup> <http://mongolianembassy.us/about-mongolia/government-and-politics/#.VZI6j2BzWS0>.

election, Saikhanbileg has managed to achieve a resolution of the Oyu Tolgoi investment agreement, among others, which has to some extent, bought much needed stability to the political and economic climate in the country. However, the upcoming elections of 2016 are already influencing both the political and public consciousness, including whether the stability that has emerged under Saikhanbileg can be sustained.<sup>43</sup>

#### 6.2.3.4 Voting in Selenge

Voting patterns in Selenge *aimag* for Presidential elections have largely mirrored national results (Table 6.7). The below election results confirm that Selenge citizens are mostly voting for the two major parties (the MPP and the DP), with higher representation of the MPP, consistent with other rural areas of Mongolia. At the *soum* level, Mandal *soum* has 31 CRK representatives, of which 16 are from MPP and 13 are from the DP. One *soum* representative is from the Justice Coalition (MPRP and MNDP), and the last is an independent candidate. In Bayangol *soum* there are 27 CRK representatives. 19 of these representatives are from MPP and 7 of them are from the DP. One *soum* representative is from the New MPRP.

**Table 6.7 Last three Presidential election results, 2005, 2009 and 2013<sup>44</sup>**

Candidates	Nominating parties	Cast votes			
		National level		Selenge level	
		Number	%	Number	%
2005					
N.Enkhbayar	MPRP	497,491	53.4	16,986	49.5
M.Enkhsaikhan	Motherland-democratic coalition	186,646	20.1	6,480	18.9
B.Erdenebat	Motherland-party	105,497	11.3	3,071	8.96
B.Jargalsaikhan	Republican party (RP)	128,784	13.8	7,730	22.5
2009					
Ts.Elbegdorj	DP	562,718	51.2	20,422	50.2
N.Enkhbayar	MPRP	520,948	47.4	20,197	49.6
2013					
Ts.Elbegdorj	DP	622,794	50.9	20,377	47.2
B.Bat-Erdene	MPP	520,380	42.5	17,900	41.4
N.Udval	New MPRP	80,563	6.5	4,233	9.8

A finding of the household survey was that the majority of the respondents (65%) indicated that they do not belong to any political party. When asked about political party support at the national and local levels, 63% of respondents in Mandal *soum* reported that they don't support any political party and 28% replied that they don't know. In Bayangol *soum*, approximately 53% of respondents expressed that they don't support any political party at the national or local level, while 37% answered that they don't know. This leaves just 10% of voters in each *soum* with a particular party allegiance. A 2009 report by the Asia Foundation on voter participation, education and trends, found that Mongolian political parties have in general failed to establish a clear and distinct identity in the minds of most voters, and further, that Mongolians don't generally have much knowledge about the positions of parties or candidates on particular issues or about their guiding ideologies, and so have difficulty choosing

<sup>43</sup> As of August 2015, a number of changes were announced to the current coalition Government. The DP (leading member of the coalition) has replaced coalition partner Government ministers with DP members in the build-up to the 2016 elections, effectively dissolving the coalition.

<sup>44</sup> General Election Commission of Mongolia. [http://www.gec.gov.mn/presidential\\_election/309/40](http://www.gec.gov.mn/presidential_election/309/40).

between candidates and parties.<sup>45</sup> This goes some way to explaining the above responses from the household survey.

Despite an increasing number of voters, voter participation in Mongolia at large, and in Selenge *aimag* specifically, is declining. Voter participation in elections has decreased in each election held since 1992. As evidenced in Table 6.8, participation in the parliamentary election in 1992 was 97.05%, and since then the rate has dropped constantly, down to only 65.25% in 2012. This is not an uncommon trend in newly democratic or transitioning states, where the opportunity to participate in elections elicits a high voter turnout, which then dissipates over time. In Selenge *aimag* and similar to the national level, voter participation has dropped steadily since 1992. Political apathy and poor voter turn-out may also be explained by the strong feelings of political alienation in Mongolia, with a large majority of Mongolians feeling that the Government cares little for their aspirations and is removed from citizens' everyday concerns.<sup>46</sup> Many respondents in the household survey also indicated that the reason for their lack of participation is because they do not trust the political candidates and political parties, and consider the election process unfair. Respondents also mentioned that they don't participate because they lack official registration documents, although it could not be established whether this was due to general apathy (i.e. they did not proactively attempt registration), purposeful non-participation, or whether this was due to difficulties in the registration process.

**Table 6.8 Voter participation, 1992, 1996, 2000, 2004, 2008, 2012<sup>47</sup>**

Year	National level		Selenge <i>aimag</i>	
	Number of registered voters	Voter participation (%)	Number of registered voters	Voter participation (%)
1992	1,085,200	95.6	44,288	97.1
1996	1,147,300	92.1	49,351	91.2
2000	1,247,000	82.4	54,052	80.8
2004	1,329,800	81.8	52,199	82.1
2008	1,542,600	76.5	60,945	74.2
2012	1,840,800	67.3	69,407	65.3

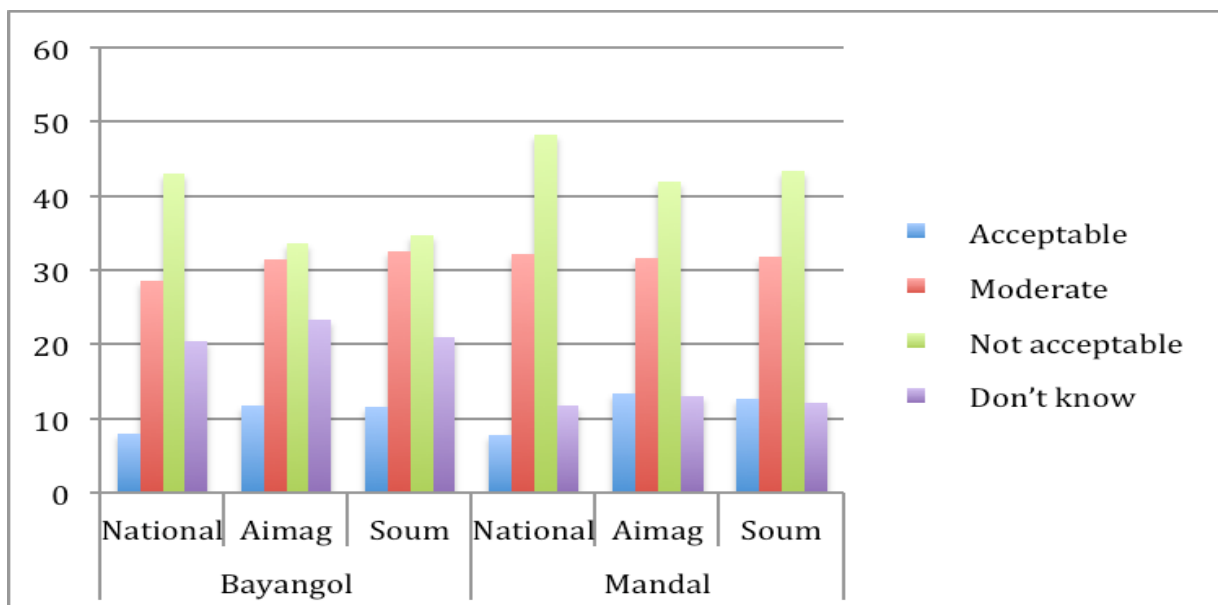
In both Bayangol and Mandal *soums*, most respondents consider the current political situation at the *soum*, *aimag* and national levels "unacceptable", with the highest percentage for the national level. This aligns closely with the Asia Foundation Study findings that almost 60% of Mongolians are not very satisfied with the Government and that this high level of dissatisfaction stems from the perception that the Government is out of touch with citizens' problems (i.e. it is general dissatisfaction rather than issue specific).<sup>48</sup> Levels of dissatisfaction are highest in Mandal compared to Bayangol. In contrast, around one third of total respondents in both *soums* described the political situation as moderate (see Figure 6.3). These low results may also correlate to the recent political and economic instability, including changing Prime Ministers and fluctuating economy. These are all factors contributing to the current low regard of the political situation among the public.

<sup>45</sup> The Asia Foundation. 2009. Mongolia Voter Education Survey.

<sup>46</sup> The Asia Foundation. 2009. Mongolia Voter Education Survey.

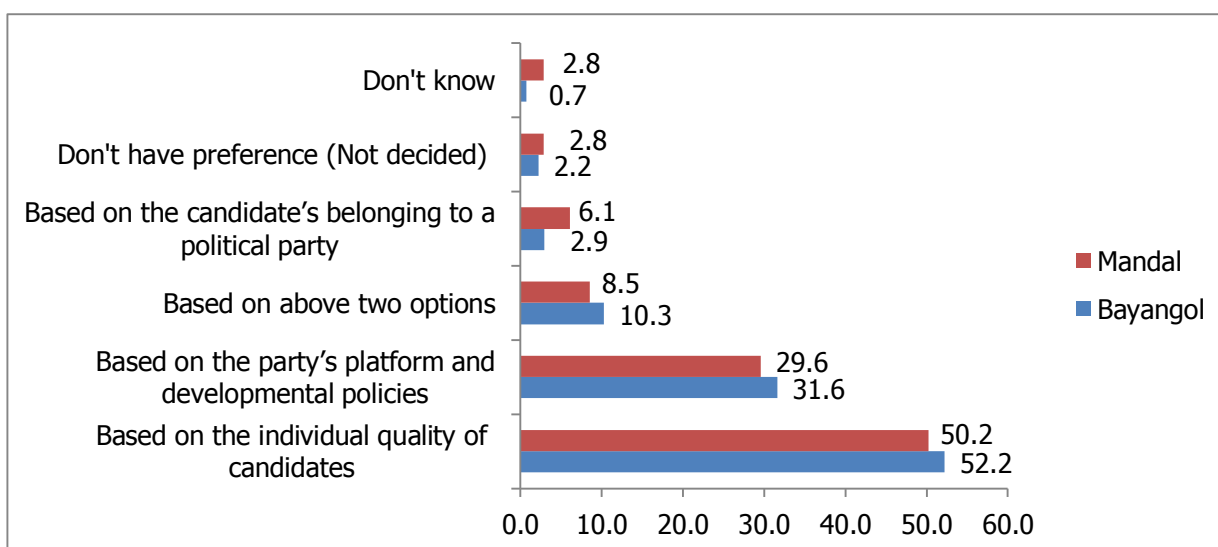
<sup>47</sup> Source: [http://www.gec.gov.mn/presidential\\_election/309/40](http://www.gec.gov.mn/presidential_election/309/40) General Election Commission of Mongolia.

<sup>48</sup> The Asia Foundation. 2009. Mongolia Voter Education Survey.



**Figure 6.3 Perceptions of present political situation in the country, by *soum* (%)**

Half of the household survey respondents reported that they vote based on the quality of a candidates' political platform, while around 30% stated that they vote based on the party's platform and development policies (Figure 6.4). The household survey also assessed respondents' views on whether they think reputable and well-respected candidates are appointed for leadership positions at the *soum* Government office. Out of the total respondents, 41.5% in Bayangol *soum* responded that "the appropriate candidates are elected," while 21.5% responded that "positions are appointed in accordance with party preferences". For Mandal *soum*, 43.2% replied that "the appropriate candidates are elected," while 26.1% responded that the selection of an appropriate candidate "never happens". These responses indicate that while a large percentage of respondents think the best candidates are being elected, there is a strong minority that feel that their vote does not count or have an influence on decision-making.



**Figure 6.4 Percentage distribution of respondents' voting preferences, by *soum***



#### 6.2.4 Government Institutions

The primary administrative division in Mongolia is the *aimag*, or province. At this level, Government institutions mirror those at the national level.<sup>49</sup> The central body at all levels of local Government is the Governor. The Governors are the representatives of the State and directly report to their respective higher-level Governors. The Governor of the *aimag* and city is proposed by the respective CRK and appointed by the Prime Minister. The Governor's Office in each *aimag* consists of the following departments in addition to Governor and Vice Governor: State Administration Department; Legal Department; Production, Trade, Agriculture and Environmental Department; Financial and Economic Policy Department; and Social Policy Department. In addition, there are numerous agencies under the Governor such as those responsible for Environment and Agriculture.

The second administrative division is the *soum*, or district. On average, each *soum* across Mongolia administers approximately 5,000 people over 4,200 km<sup>2</sup>. Most *soum*-level funding is delegated from the national Government. *Soum* Governor's Offices are limited to a maximum of 5-10 people, including: 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); and Operations Officer.

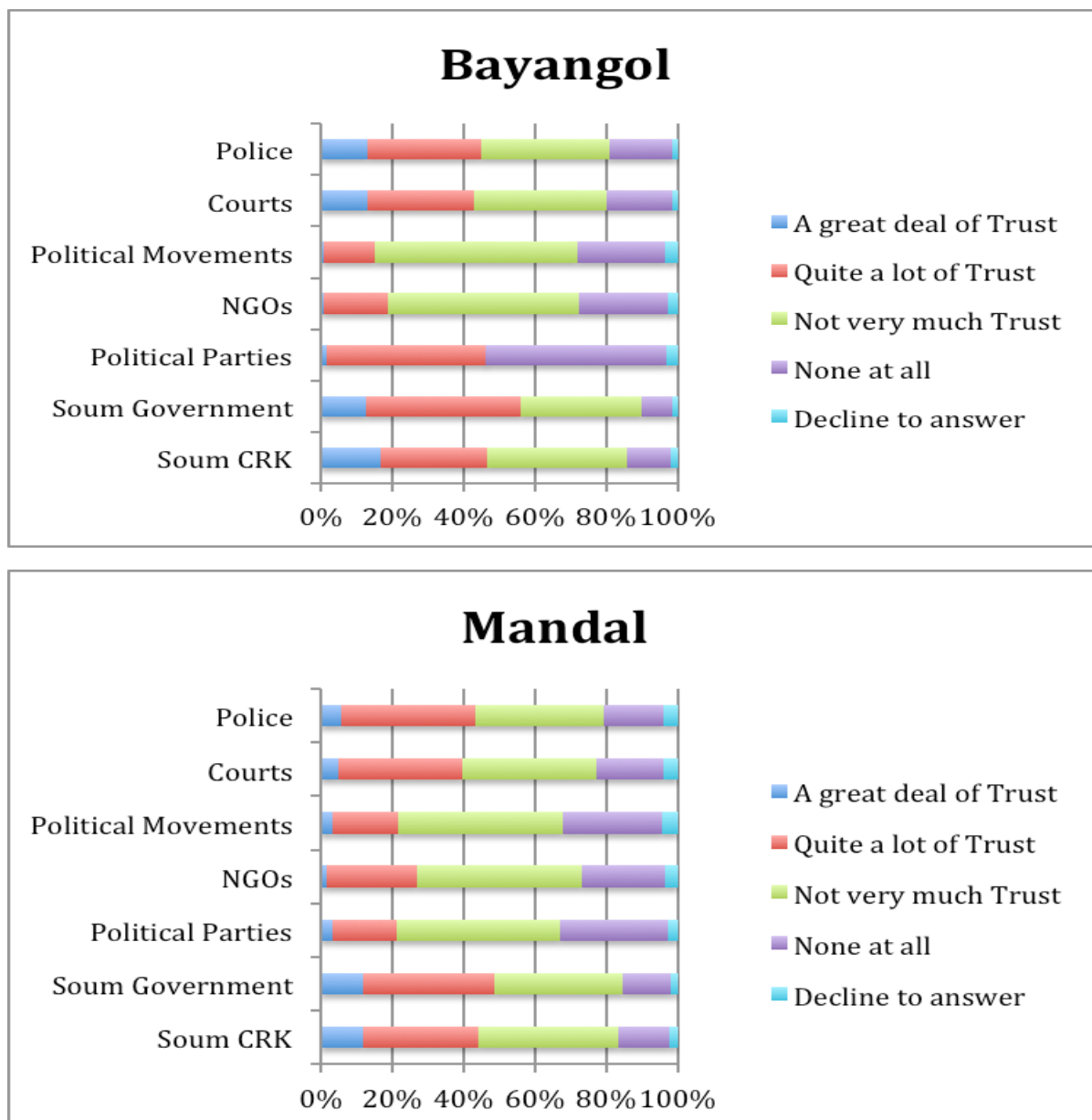
The third and lowest level of administration in Mongolia is the *bagh*, or sub-district. This level consists of a *bagh* Governor, a Civic Registration Officer and Section Leaders. The Governor's responsibilities are provided for in legislation. A *bagh* has its own budget, which is regulated by the Law on Budget and Law on Government Offices. However, the *soum* Government Office has the power to manage the budget and the *bagh* usually administers only its maintenance costs, pensions and the budget for providing prizes for the best workers, best citizens and best taxpayers.<sup>50</sup>

In the Project area, Selenge *aimag* is divided into 17 *soums* and 56 *baghs*. Mandal *soum* has 9 *baghs*, and contains 42 Government organisations. Bayangol *soum* has 3 *baghs*, and has 5 Government organisations and 5 organisations providing social services in the *soum*.

Figure 6.5 shows the level of trust in public institutions in the Project area. 43.3% of Bayangol respondents trust in the *soum* Government Office, compared to 36.7% of Mandal *soum* respondents. Overall, levels of trust in public institutions are low because citizens are not satisfied with the activities they undertake. Political parties have the highest level of "no trust at all" in both study area *soums*. However, people also either have a lot of trust, or none at all for political parties, indicating that politics is a divided issue in Bayangol *soum*. In contrast, views on political parties are generally negative in Mandal *soum*. In both *soums*, the *soum* CRK and *soum* Government have greatest overall levels of trust while political movements and NGOs have the least. Responses in Bayangol and Mandal *soum* are generally consistent with respect to trust rates of institutions.

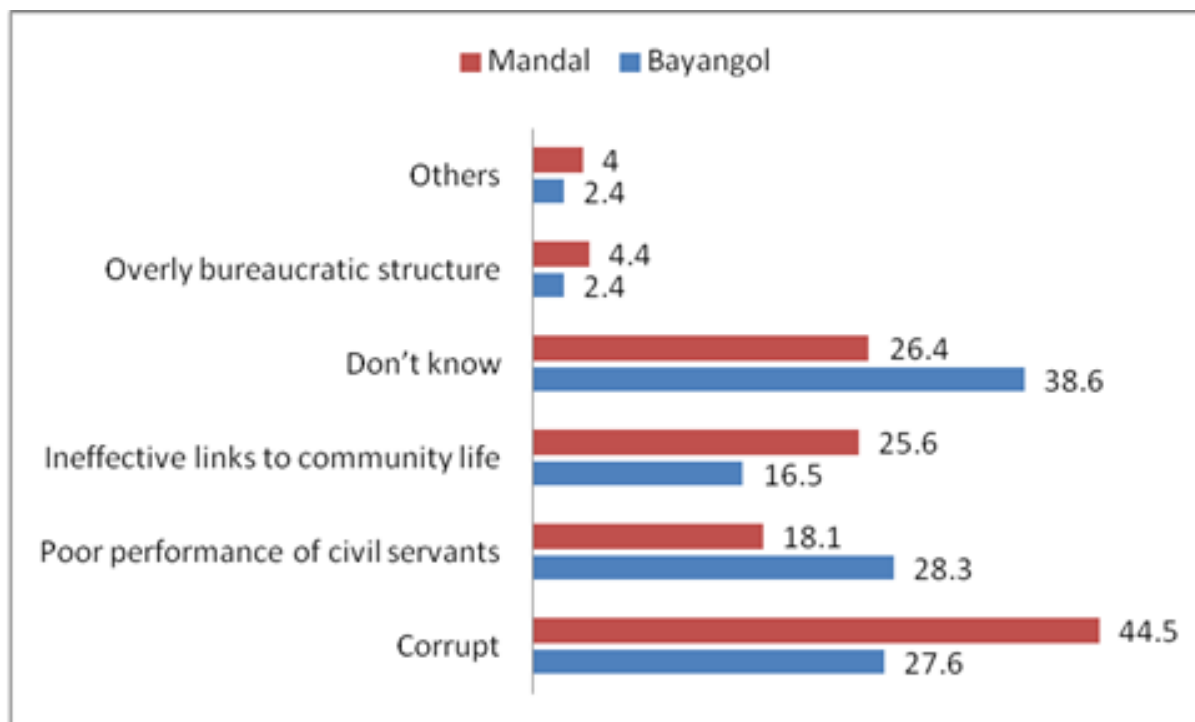
<sup>49</sup> <http://zasag.mn>.

<sup>50</sup> KII 9<sup>TH</sup> *bagh* with Government Official, Mandal *soum*.



**Figure 6.5 Respondents' trust rate for the institutions, by *soums***

According to Figure 6.6, the majority of respondents surveyed in Mandal *soum* indicated that "corrupt" and "ineffective links to community life" are the main negative aspects of the *soum* administration functions. In Bayangol *soum*, the key disadvantages with the *soum* administration functions were listed as "poor performance of civil servants" (28.6%) and "corruption" (27.6%). These views can be linked with the general dissatisfaction with political situation in the country overall, as described above in this Chapter.



**Figure 6.6** Main sources of dissatisfaction with *soum* administration functions

## 6.2.5 Social, Political, Cultural and Economic Organisations

There are a significant number of economic and social organisations in the Project area. The Selenge *aimag* business register includes data on economic establishments or entities and their subsidiaries active in all economic sectors. In the first 3 months, the number of registered entities in Selenge *aimag* reached 2,758, which included 72 new entities registered and 6 entities eliminated. A quarter of newly registered enterprises are private, limited liability companies (LLC). 66.7 percent of these entities are NGOs, community based organisations, religious organisations and industry.

**Table 6.9** Number of registered entities, at April 2015<sup>51</sup>

Name of <i>soums</i>	Private companies (LLCs)	Lending, Leasing and Money Exchange Institutions	Cooperatives	State or Public owned enterprises	Branches of Organisations	Organisations providing Government services (schools, hospitals, etc.)	NGOs	Religious organisations	Foundations	Total
<i>Aimag</i>	1,544	236	157	14	372	222	160	21	32	2,758
Mandal	331	53	22	2	44	39	23	4	7	525
Bayangol	61	6	12	1	24	6	7	3	1	121

<sup>51</sup> Selenge *aimag* Statistics Office.

A number of local NGOs, CSOs and public institutions are active in Selenge *aimag*, including: Trade Union; Association of Civil Society; Association of Employers; Social Partnership Network; Union of Women, Youth, Elders and Students; Children's Organisation; Red Cross; and Community Council. This is a large number given the population served. However, there are also a significant number of registered CSOs that are not all active or working effectively in their area of stated purpose.

**Table 6.10 List of registered NGOs in Selenge *aimag***

	Focus area	Number of NGOs
1	Environment	17
2	Youth and Women	6
3	Elders	3 (there are also branches in each <i>soum</i> )
4	Human Rights	8
5	Specialised Associations	5
6	Sports	8

The major funding sources for local CSOs and public organisations are membership fees, donations by local entities, individuals and projects (i.e. international or nationally funded programs to support development in a geographic or thematic area). The common challenges faced by CSOs include the inadequacy of funding, poor capacity of personnel, a lack of involvement by citizens, and unavailability of premises/offices. These challenges mean that the majority of organisations fail to operate properly and so, do not have the capacity to deliver on their remit, manage funds or develop as an organisation. As evidenced in the quote below, there is a lack of acceptance or trust in CSOs among communities in the Project area. One explanation of this view is that there is poor awareness of CSOs' activities / mandate, the objectives and outcomes of which are not generally well publicised, communicated or delivered, and thus this sector is often misunderstood.

"In Mandal *soum*, there are around 20 Civil Society Organisations but acceptance of them in the community and reputation among local citizens is weak."

KII with Head of Mandal *soum*

CRH

## 6.2.6 Formal and Informal Decision-Making Process

Citizens' participation is important in formal and informal decision-making processes in Mongolia. The formal decision-making process is represented by the *soum* and *bagh* CRKs, meetings of which are required to be held a minimum of twice a year at the *soum* level and 3 times a year at the *bagh* level (in practice are held around 4 times a year)<sup>52</sup>. The main duties and responsibilities of CRK members are to monitor the government activities; to engage and consult with citizens, to receive citizens' feedback and to increase citizen participation in decision-making.

There are also mechanisms for citizen's participation directly in the legislative processes. Within the *soum* CRK, there is the Citizens' Hall established in each *soum* for citizens to provide feedback on Government services and draft legislation. A key focus of Government at present is decentralisation. This is to be achieved through the Integrated Budget Law (2012), which has been adopted and includes the mechanisms for implementation of decentralisation. This Law introduced the Local Development Fund, which is useful avenue for local Governments to exercise more control over local development.

<sup>52</sup>Law on Mongolian State administrative and territorial units and its Management, Clause 23.2.

The funds allow local people to participate in defining community development priorities and provide their comments/feedback on these community development projects through the *bagh* meetings. However, final decisions on Local Development Fund projects are made by the *soum* CRK. According to the Law, elected *soum* citizens' representatives have additional duties to engage with citizens through discussions and meetings of the Citizens' Hall, conduct further studies based on the proposals and feedback received from citizens and collaborate with the *soum/bagh* Government to solve local issues.

Members of the *bagh* CRKs represent *bagh* citizens at the decision-making level, introduce proposals, provide feedback and requests from citizens, and protect the interests and rights of their constituents. The *bagh* CRK members also have a mandate to conduct advocacy on behalf of their citizens. Generally, citizens' participation in decision-making at *bagh* meetings is low. The household survey indicated participation of 67% in Tunkhel *bagh*, 66% in Kherkh *bagh*, and 55% in the other *baghs* of Mandal and Bayangol *soums*. There is a perception among citizens (particularly herders) at the *bagh* level that their voice has no impact on decisions, thereby discouraging participation in these meetings. When household survey participants were asked whether they manage to make their opinions heard at *bagh* meetings, half of Bayangol and two-thirds of Mandal respondents replied that "they never manage to make their opinions heard at *bagh* meetings/decision-making". Furthermore, a lack of information with which to make informed decisions and to enable effective participation was also stated as a problem at the *bagh* level.

*"There is a bagh Citizens Representative Khural but it is not institutionalised, or formally established through law, and this means that civil participation is low because citizens don't feel there is leverage or impact through their participation. Information dissemination is low because there is no budget for the bagh Governor to disseminate information. There is also no budget for sections leaders to work with households. The main challenges for bagh Governors are: 1) Limited budget/funding, 2) There is no vehicle for bagh Government, which is demanded highly, and 3) There is no leverage to increase citizens' participation."*  
KII with one of the *Bagh* Governors, Mandal

*soum*

*"Herders voice does not reach the decision-making level. The information dissemination process is not good."*

FGD with herders in Mandal

*soum*

*"Information dissemination is not sufficient. We have a lack of information."*

FGD with SME group in Mandal and Bayangol

*soums*

*"Bagh meeting are organised 2-3 times a year. In a meeting, 20% of total bagh citizens usually participate. This means overall attendance rate is low."*

KII with one of the *bagh* Governors in Mandal

*soum*

Many participants through FGDs and the households survey also reported that the issues discussed in *bagh* meetings are not relevant to their life. FGD and KII participants reported that they don't get the chance to vote on the key issues to be discussed at the *bagh* meetings. This further explains why citizens feel that Government is not in touch with their problems and that their voices are not heard. It may also be due to a lack of facilitation skills to organise effective meetings and broker solutions to citizen's problems by the Chairperson of *bagh* CRK Meetings (i.e. a lack of capacity at this level of Government), thus further driving feelings of marginalization and apathy (as voiced in the above quotes).

It may also be due to a lack of facilitation skills to organise effective meetings and broker solutions to citizen's problems by the *bagh* Governor/Chairperson of *bagh* CRK meetings (i.e. a lack of capacity at this level of Government), thus further driving feelings of marginalisation and apathy (as voiced in the above quotes).

**Table 6.11 Issues discussed in bag meetings relevant to your life, by *soums* and *baghs***

	<i>Soum</i>		<i>Bagh</i>			Households	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
All the time	10.9	13.4	13.4	11.5	12.6	14.2	11.7
Sometimes	24.1	12.6	13.4	12.4	22.5	13.4	18.2
Occasionally	22.6	19.3	21.3	16.8	22.5	23.6	18.9
Never	42.3	54.7	52.0	59.3	42.4	48.8	51.1

While the level of participation in *bagh* public meetings is unsatisfactory, citizen involvement in public events (community, and cultural events and activities) held by *soums* and *baghs* is relatively good. In particular, 75.1% of Mandal *soum* citizens surveyed and 71% of Bayangol *soum* citizens surveyed responded that they actively attend public events held by the *bagh/soum*, indicating the potential for engagement is much higher than what is currently achieved through formal mechanisms.

**Tunkhel *bagh's* status and desire to be a *soum***

FGDs and KIIs in Tunkhel *bagh* revealed that a key issue for participants was Tunkhel *bagh's* status as a *bagh* and the desire for this to be changed to *soum* status. The key reasons specified for this change include:

- Tunkhel *bagh's* large population of around 3,500, which is larger than many *soum* populations in Mongolia, means it should be elevated to the designation of *soum*.
- As Tunkhel is only a *bagh*, it lacks much of the social infrastructure required to service its population, which, if it was a *soum*, it could finance more easily (education, health, roads, etc.). As a *soum*, Tunkhel would have more decision-making power and autonomy as well as the budget, all of which it believes its large population and remote location warrant.
- All issues are currently discussed and ultimately decided by Mandal *soum*. This means that whenever Tunkhel citizens have a problem, they are required to go to Mandal to get health tests, maternity issues, approvals, etc., which is costly and inefficient. From the citizens perspective, this would be resolved through a change in status from *bagh* to *soum*.

If Tunkhel become a *soum*, this would have implications from a budget revenue perspective (including potential allocation of resource revenues from the Gatsuert Project). As a *soum*, Tunkhel would receive a bigger share of the budget. *Baghs* have no power over the budget expenditure and allocation and becoming a *soum* would allow Tunkhel to have greater control and power over its budget.

Tunkhel *bagh* CRK voted in support of attempting to become a *soum*, however, this motion was rejected at the *soum* CRK level and as such, has not progressed any further at this stage.

### 6.2.7 Access to Welfare / Income Support

Knowledge of welfare is low. 62.8% of respondents in Mandal *soum* and 60.6% of Bayangol *soum* respondents are not aware of welfare projects and programs implemented in their *soum*. The program with the highest level of awareness (as indicated in the household survey) is the "restocking livestock program" run by the Government since 2010, with over 25% of respondents in Mandal and Bayangol



aware of it.<sup>53</sup> The benefits from the “restocking livestock project” and small grant projects for SMEs are the most significant, which can explain the high levels of awareness of these programs.

**Table 6.12 Access to projects and programs for improving livelihoods and obtaining benefits (%)**

Projects and programs	Mandal		Bayangol	
	Aware of projects/ programs	Program beneficiary	Aware of projects/ programs	Program beneficiary
Household Livelihood Capacity Support Program	16.3	9.2	15.9	19.4
SME Support Project	18.6	6.2	20.5	3.2
Restocking livestock	25.2	13.8	28.0	16.1
<i>Soum</i> Development Fund	13.2	3.1	18.9	9.7
Employment Promotion Program	14.7	9.2	18.2	0.0
Green Gold Project	14.7	0.0	15.2	0.0
Others	2.3	16.9	0.0	16.1
Don't know	<b>62.8</b>	<b>47.7</b>	<b>60.6</b>	<b>35.5</b>

## 6.2.8 Women in Society

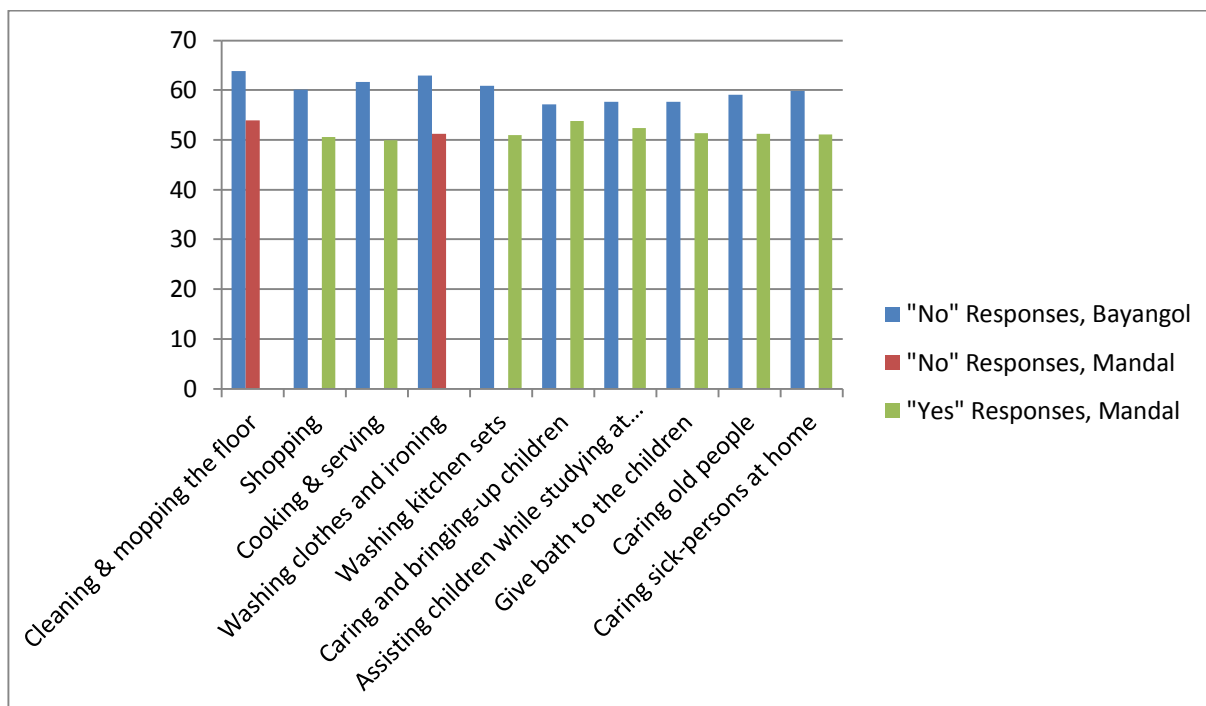
### 6.2.8.1 Women's Contribution and the Role in the Family

There have been broad changes in social attitudes since Mongolia's transition in the 1990s, which have also affected the marital and family roles of women and men. The household survey asked respondents who in the household/family should be the major bread winner(s). 54.7% of total respondents in Bayangol *soum* and 53.4% of Mandal *soum* respondents reported that both the husband and wife are the major bread winners. In contrast, 40.9% of Bayangol *soum* respondents and 35.1% from Mandal suggest the man/husband is the major bread winner in the family. The remaining respondents (very few people) consider breadwinning is the role of women.

The study found differences between Mandal and Bayangol *soums* in local community perceptions towards women's roles in household activities. It is interesting to see that Mandal *soum* respondents are more open to men participating in household activities that are traditionally seen as the women's domain. More than a half of the total respondents in Mandal *soum* indicated the following activities can be done by the man/husband: shopping, cooking and serving, washing, caring for children, old and sick people, assisting children while studying at home, bathing the children. However, Mandal *soum* respondents consider other activities such as washing and ironing clothes, cleaning and mopping the floor are not appropriate for men. In contrast, the majority of Bayangol *soum* respondents consider almost all of the above-mentioned household activities are not appropriate for men, demonstrating that in the Bayangol *soum* community, women should dominate the indoor / household responsibilities. The differences in opinion between the two *soums* may be attributed to the larger urban population in Mandal *soum*, where gender roles may be less fixed or open to new influences.

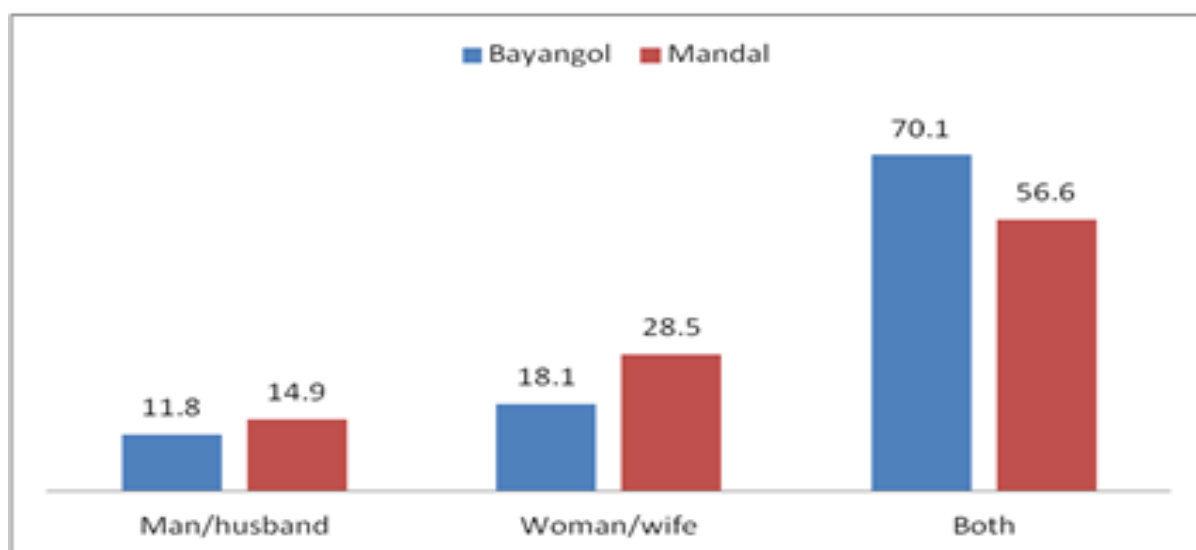
The majority of respondents in both study *soums* answered that household activities including fixing housing problems, electricity problems and vehicle problems are appropriate to be undertaken by men, and not women.

<sup>53</sup> Government Resolution # 197. Source: <http://www.legalinfo.mn/annex/showPrint/2699>.



**Figure 6.7 Activities considered to be men's responsibility, Bayangol *soum* (%)**

Financial decision-making is one of basic indicators of the equality of family members in households. This is shown in Figure 6.8, where 70.1% of Bayangol respondents and 56.6% of Mandal respondents indicated that decision-making is equally shared between husband and wife. Interestingly, a greater proportion of Bayangol *soum* respondents consider decision-making a joint responsibility, while at the same time suggesting clear delineation of male/female household roles. In contrast, Mandal *soum* respondents consider less equity in financial decision-making yet greater responsibility for women in this task, at the same time as greater male participation in what would elsewhere be considered predominantly female domestic duties. This suggests a shift in women's roles in the household with growing urbanisation.

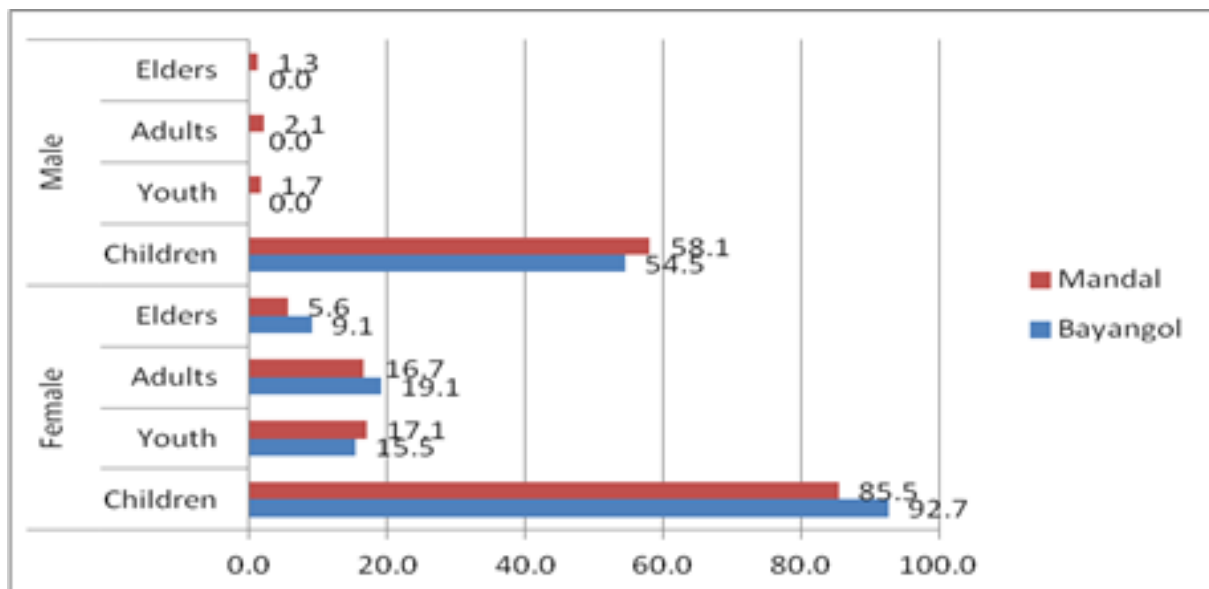


**Figure 6.8 The primary decisions about financial issues in the household (%)**

#### 6.2.8.2 Domestic Violence Issues

An anonymous form on gender-sensitive issues was included in the household questionnaires, which were filled in by the wives and husbands of the families involved. On identifying who the victims of domestic violence are, 92.7% of Bayangol respondents and 85.5% of Mandal respondents indicated that girls are vulnerable to domestic violence, while 54.5% of Bayangol respondents and 58.1% of Mandal respondents indicated that boys are vulnerable. It should be noted that these answers do not represent the actual percentage of local domestic violence, but rather the perceptions on who the primary victims are.

The household survey also asked how often domestic violence happens in your area in the last 12 months. 76% of Bayangol residents and 77.9% of Mandal residents responded there is no domestic violence. While the above statistics point to low levels of perceived domestic violence, the reality of this issue is far more complex and studies show that domestic violence is, in fact, very common in Mongolia with 1 in 3 women the victim of domestic violence in 2010.<sup>54</sup> The taboo nature of the topic means that domestic violence is often understated (which may explain the responses gathered in the household survey). Furthermore, there is an acute lack of awareness, both at the societal level and the institutional level, as to victims' rights and institutional responsibilities in relation to domestic violence. Indeed, out of 288 respondents in the survey, only 56.4% of Bayangol respondents and 61% of Mandal respondents answered that they know there is a law prohibiting such acts. Moreover, the respondents did not know about any of the provision or rights enshrined in the law. However, greater female response rates suggest a greater awareness of its prevalence and of potential victims, consistent with discussions later in this chapter on crime.



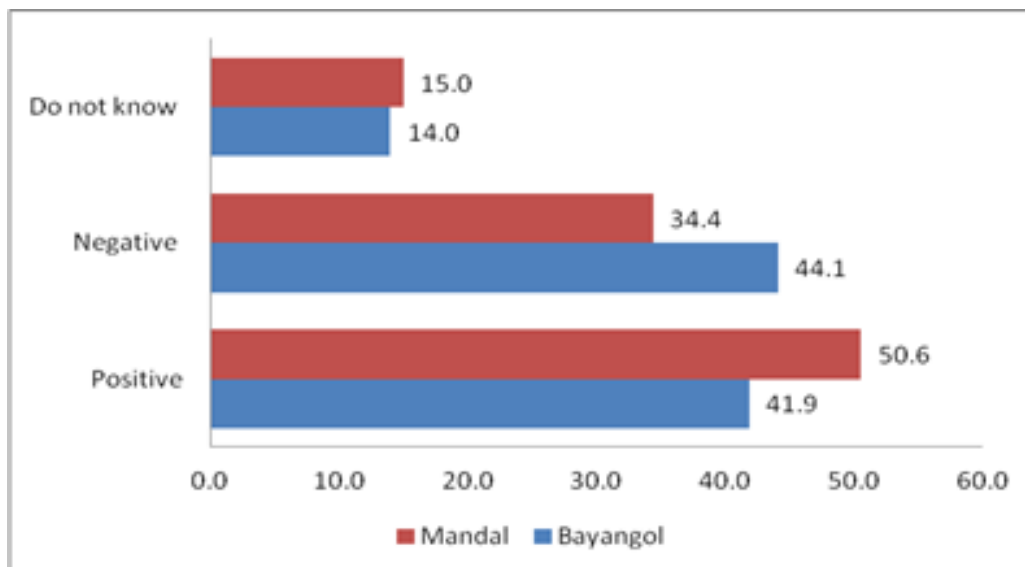
**Figure 6.9 Household perceptions of demographic groups vulnerable to domestic violence (%)**

<sup>54</sup> The National Centre Against Violence. 2010. Implementation of Mongolia's Domestic Violence Legislation.

### 6.2.9 Attitudes towards Migrant Workers / Outsiders

The population locality and dispersion of Mongolia has changed rapidly since the 1990s due to migrations flow from rural to urban areas. Of the total population in Mongolia, around a third or 63.7% of households are concentrated in cities, while 36.6% are located in rural areas. Across Mongolia, migration to Ulaanbaatar and the central regions has also increased, particularly following economic transition of the 1990s, due to hard times such as drought, *dzud* and other natural disasters experienced by herders and rural communities. Migration to Selenge *aimag* from other *aimags* and *soums* has increased since 2000 and the in-migration rate was the highest between the years of 2009-2010, coinciding with two significant years of *dzud*. Since then, in-migration numbers have declined in Selenge *aimag* (see Section 4.1 Demography for further discussion on migration).

In the household survey process it was important to clarify what the attitudes of the local community are to foreign workers and immigrant “outsiders”. Of the total respondents in Mandal *soum*, 50.6% demonstrated positive attitudes to immigrants from different *soums* and *aimags*. One in ten responded negatively and 21.7% failed to express their opinion. In Bayangol *soum*, 44.1% of respondents replied that they have a negative attitude to the immigration and settling of outsiders. When respondents were asked to provide a reason for answering positively, half of the total respondents indicated that *soum* population will increase (generally perceived as a good thing). In addition, respondents mentioned that outsiders will do a lot for, and they will introduce new people into, the *soum*. The reasons behind negative responses included the decreased availability of resources such as pasture and water (see further discussion in Section 6.6 Land Use and Natural Resources), and that outsiders are dangerous and decrease job opportunities for locals. It is interesting to note that 84.9% of Bayangol respondents reported that their negative attitude is due to the decrease in natural resources such as pasture and water attributed to in-migration.



**Figure 6.10 Attitude to immigration and settling of “outsiders”, percentage, by *soums***

### 6.2.10 Conclusion

Some of the key issues and themes that emerged in the course of investigating social structures included that levels of trust in public institutions are generally low due to community dissatisfaction with the activities of public organisations. Political parties are the least trusted institutions in both Mandal and Bayangol *soums*. In both *soums*, the *soum* Citizens Representative Khural (CRK) and *soum* Government have the greatest overall levels of trust while political movements and NGOs have the least. Most people surveyed (65%) indicated that they do not belong to any political party and only 10% of voters identified a particular party allegiance. In Selenge *aimag* and similar to the national level, voter participation has dropped steadily since 1992. Political apathy and poor voter turn-out may also be explained by the strong feelings of political alienation in Mongolia, with a large majority of Mongolians feeling that the Government is out of touch with citizens' needs and concerns. Many respondents in the household survey also indicated that the reason for their lack of participation is because they do not trust the political candidates and political parties, and consider the election process unfair. Levels of dissatisfaction are highest in Mandal compared to Bayangol. Community perceptions on corruption are also a key source of discontent with the political situation in both Mandal and Bayangol.

*Baghs* face unique challenges in the Project area, including the perception among *bagh* citizens that their voice does not count or is not heard in decision-making (*bagh*-level and beyond), in addition to poor information dissemination by *bagh* CRKs, which further alienates *bagh* constituents and impedes their ability to participate meaningfully in decision-making. A key issue in Tunkhel *bagh* is its status as a *bagh* and the desire for this to be changed to *soum* status. If Tunkhel became a *soum*, this would have implications from a budget revenue perspective (including potential allocation of resource revenues from the Gatsuurt Project). As a *soum*, Tunkhel would receive a bigger share of the budget and would have greater autonomy. Action to formally progress this motion has been thwarted at the *soum* level so far and as such, there is no indication as to how this may move forward in the future.

The majority of CSOs in the Project area fail to operate successfully as they do not have the capacity to deliver on their remit, manage funds, or develop as effective organisations. Welfare / community upliftment projects have low levels of awareness in the Project area. Indeed, 62.8% of respondents in Mandal and 60.6% in Bayangol *soum* are not aware of welfare projects and programs implemented in their *soum*. The program with the highest level of awareness is the "restocking livestock program" run by the Government.

Of the total respondents in Mandal *soum*, 50.6% demonstrated positive attitudes to immigrants from different *soums* and *aimags*, while in Bayangol *soum*, 44.1% of respondents replied that they have a negative attitude to the immigration and settling of outsiders. When respondents were asked to provide a reason for answering positively, they indicated that this is because in-migration will introduce new people into the *soum* and increase its population and that outsiders will do a lot for the *soum*. The reasons behind negative responses included the decreased availability of resources such as pasture and water, and that outsiders are dangerous and will decrease job opportunities for locals.

## 6.3 ECONOMY

### 6.3.1 Introduction

This Section elaborates on the local economy in Selenge *aimag*, Mandal and Bayangol *soums* including the subjects of the local budgets; pricing; development of economic sectors such as agriculture, industry, mining, and livestock; emerging markets; living standards; and, household incomes.

### 6.3.2 Reference Data

The reference period for the baseline study is 2012 to 2015. Secondary data sources consulted in the development of this section include national statistics, population and housing census data, official statistics from the Selenge *aimag* and Mandal and Bayangol *soum* local governors' offices. Primary data was gathered in KIIs and FGDs with local community members, as well as in the household survey conducted among households in the Project Area of Influence.

Additional tables and figures not part of the body of this Section are included in Appendix D.

### 6.3.3 Local Economy and Budgets

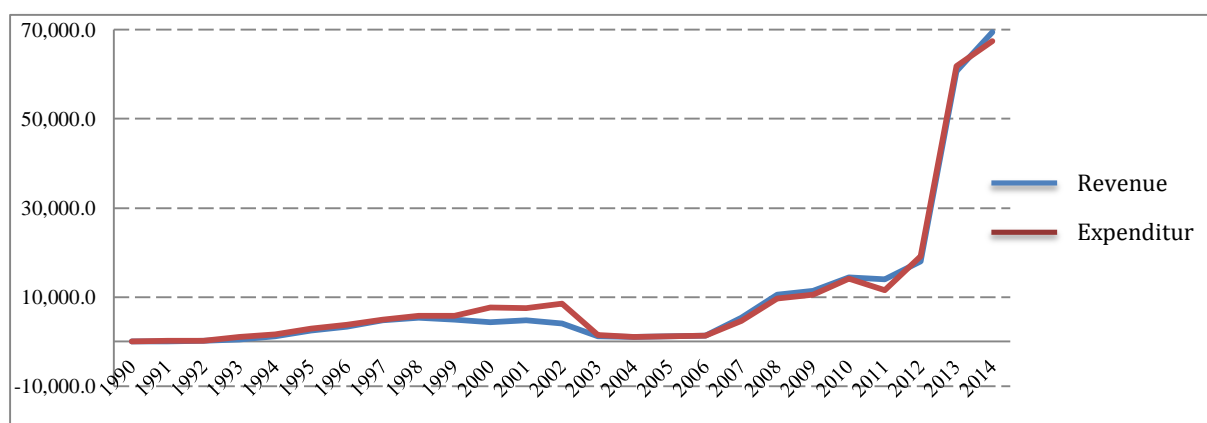
The Mongolian economy has contracted in the past 3 years on the back of a global recession and national government policies which further compounded economic decline. Gross Domestic Product (GDP) growth, which had reached 12.3% in 2012, decreased to 11.6% in 2013 and 7.8% in 2014. However, per capita GDP increased from 5,876,800 MNT (MNT) (3,939 USD)<sup>55</sup> in 2012, to 6,614,100 MNT (4,563 USD) in 2013 and 7,403,400 MNT (4,512 USD) in 2014. This growth was primarily due to activity in the mining industry in Mongolia. From the breakdown in national GDP growth by sector, the mining and extractives sector comprised 24.2%, finance and insurance activities 22.9%, transportation and warehousing 20.9%, and agriculture comprised 14.5% in 2014.

In 2014, Selenge *aimag* contributed 2.7% of the national GDP growth and over 20% of the share from the Central region. Even though Selenge *aimag* is the biggest contributor to GDP growth among the 7 *aimags* of the central region, its contribution dropped from 25.5% in 2012 to 23% in 2013 and 21.6% in 2014. From the GDP breakdown by sector in Selenge *aimag*, the industrial sector (including mining) accounts for 45.5%, agriculture for 27.7% and service sectors for 26.7%.

Analysis of the *aimag* budget revenue and expenditure for 1990-2014 reveals that *aimag* expenditure has exceeded the available budget consistently each year. However, the situation has improved since 2012, with budget revenues exceeding expenditure. This may be explained by a change in Government in 2012 and a policy of increasing budgetary decentralisation. For example, "Local Development Funds" have been established at the *aimag*, *soum*, and *bagh* levels assisting in the targeting of funds to community needs. Total budget revenue increased 14.3% in 2014, the majority (78.4%) of which comprised revenues from aid and development assistance, with the remaining 20% coming from tax revenues, and around 3% from non-tax revenues, asset revenues, and account balances.

<sup>55</sup> As estimated by the World Bank atlas method.





**Figure 6.11 Local budget of Selenge *aimag* (million MNT), in 1990-2014**

The budget income and expenditure of Selenge *aimag*, Bayangol, Mandal *soums* is presented in Table 6.13. Compared to the other *soums* in Selenge *aimag*, Mandal *soum* has high fiscal income and expenditure (exceeding Sukhbaatar, the *aimag* centre), indicating its economic dominance in the area.

**Table 6.13 *Soum* budget income and expenditure, MNT, 2014<sup>56</sup>**

	Total local income budget		Total local expenditure budget	
	Target	Performance	Target	Performance
Bayangol	101,534,600	107,707,200	711,695,800	622,534,800
Mandal	471,228,400	802,650,000	2,783,432,800	2,186,853,600
<i>Aimag</i> budget	13,046,898,000	13,441,348,900	17,797,596,300	16,191,103,400
<b>Total</b>	<b>15,646,283,700</b>	<b>16,759,288,600</b>	<b>33,613,130,800</b>	<b>28,391,305,900</b>

### 6.3.4 Pricing and Inflation

Inflation dropped from 14% in 2012 to 12.5% in 2013 and 11% in 2014 respectively, due to the downturn in the mining sector in Mongolia and associated Government fiscal policy decisions over the period. With respect to inflation, food products have experienced the highest price growth, and specifically meat (which has experienced a dramatic price increase of the past 5 years). At the national level, meat products alone make up 16% of households' total expenditure and are the major primary food group for most households compared to other food products. The key reasons for the dramatic increase in the meat price include the last *dzud* (in 2009 – 2010), which significantly decreased supply; and the general increase in economic growth and incomes.

Herders in the Mandal *soum* FGD expressed their concerns about the increasing prices of goods. They are still being paid the same price for a litre of milk they produce and therefore find it increasingly difficult to afford goods for household consumption:

"Herders are not satisfied with market price of livelihood products. Each year, 55 million litres of dry milk is imported from other countries. The price of 1 litre milk hasn't changed at all in the last 5 years. But the price of other goods (for example: fodder and flour) has increased."

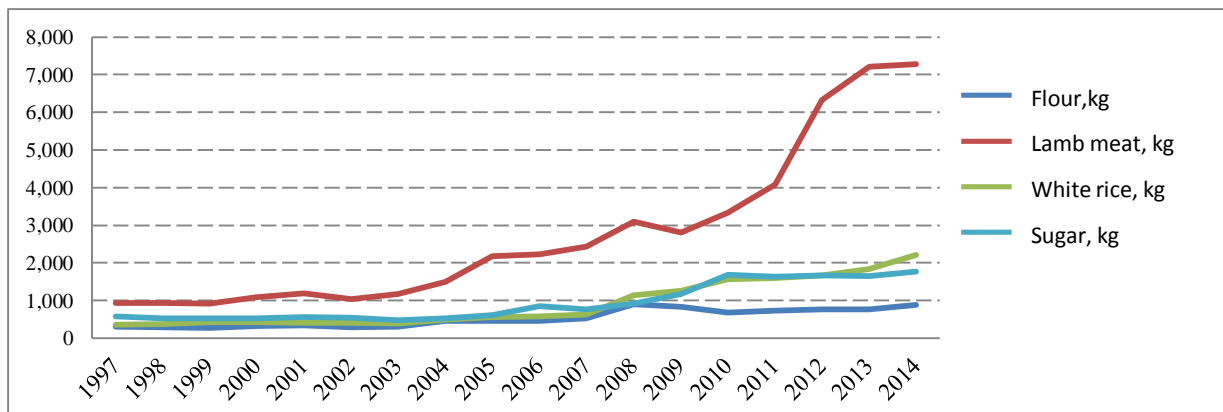
Herder FGD, Mandal

*soum*

<sup>56</sup> Local Governor's Office (2015). The socio-economic indicators of Selenge *aimag*-2014, Local Governor's Office of Selenge *aimag*

Selenge *aimag* has seen a constant increase in the consumer price index each year between 2010 and 2014. With respect to the type of products subject to price increases, the biggest price increases have been food products (especially meat); alcohol; tobacco; clothing; fabric goods; housing; water; electricity; fuel; and educational services. Figure 6.12 illustrates Selenge *aimag*'s particular food product price range between 1997 and 2014. Comparing 2012 to 2014, lamb meat increased by 15.2%, flour by 14.5%, white rice by 33%, and sugar by 5.5%. Mandal *soum* prices are similar to that of the Selenge *aimag* average, while in Bayangol the price of potatoes is the lowest in *aimag* and the price of rice is the highest *aimag*. The prices of meat and gasoline appear to be higher in Bayangol compared to other *soums*, with Mandal prices again similar to the average. Slightly higher prices in Bayangol may be attributed to it having a smaller urban centre than Mandal *soum* and therefore less competition among goods and service providers.

According to the household survey, more than two thirds of households complained that goods are overpriced. That prices for goods have increased so steeply in the past few years is listed as a key common issue for more than 85% of households surveyed. Furthermore, the poor quality of goods and the inability to access markets are additional struggles for the households. Even though the access to infrastructure in Selenge *aimag* is good (with railway and roads links), access to fresh produce and quality goods varies considerably within the *aimag*). This is a particular issue for Tunkhel *bagh* due to its remoteness from the *soum* and *aimag* centres, which tend to have bigger, better, more competitive and accessible shops.



**Figure 6.12 Selenge *aimag*'s certain consumer good price survey, of 1997-2014**

### 6.3.5 Agriculture

Selenge *aimag* is considered the major region for national crop production in Mongolia. In 2014, Selenge *aimag* produced 28.1% of potatoes, 31.2% of vegetables, 47.3 of wheat, 21% of fodder<sup>57</sup>, and 13% of hay in the total national production figures. In 2014 the production of potatoes decreased by 27%, and other vegetables by 7.3% compared to the previous year. The decreased vegetable production can be explained by a major increase of 90.7% in the production of wheat and fodder. Similarly, at the *soum* level, the total area dedicated vegetable farming decreased, and the area dedicated to crops increased in both Bayangol and Mandal *soum* by 20.6% and 12.5%, respectively.

<sup>57</sup> Fodder is derived from natural grass in the area, whereas hay is a specifically cultivated crop.

The quality of land for the production of crops and vegetables is evidenced by the high yields attained in Selenge *aimag* compared to other parts of Mongolia. In 2014, from 1 hectare of land, an average of 16.4 centners<sup>58</sup> wheat was harvested at the national level. In Selenge *aimag* in the same period, 17.2 centners was harvested. Furthermore, where an average 122.3 centners of potatoes were harvested at the national level, Selenge *aimag* harvested 154.3 centners in 2014, which is the highest yield of potatoes from 1 hectare of land in Mongolia.

Over 70% of household survey respondents stated that are able to produce crops. Almost two-thirds of Bayangol respondents cited that opportunities are available for crop production, in spite of the lack of professional advice on farming. This was higher than Mandal respondents, who expressed that they have even lower access to advice on farming methods and technologies. Tunkhel *bagh* respondents were split almost one third each on whether they consider crop production as possible, occasional or impossible. 75% of Tunkhel *bagh* residents indicated that they cannot access professional advice on crop cultivation and that this was a significant barrier to their success in this activity. There was no significant difference between responses from herder households and settled residents. Overall the results demonstrate that households are persevering with crop cultivation (whether it be primary occupation or as an income diversification strategy), but that this is being done in the context of frustrations and limitations in the support they feel will allow them to be more effective farmers and obtain high yields.

However, the household survey indicates that locating suitable land for farming is the key challenge for approximately 70% of residents in Selenge *aimag*. Around 28% of respondents consider that collecting and filling out the applications to obtain a land is complicated and time consuming, with over 20% mentioning that obtaining farm land is extremely competitive. Not surprisingly given the nature of their work, herder households have a greater recognition about the scarcity of available land than urban dwellers.

### 6.3.6 Livestock and Herding

Livestock numbers in Selenge *aimag* have increased from 0.7% in 2013 and to 12% in 2014, to 1.47 million livestock. The number of sheep, goats and cows has increased substantially in the past year, and small livestock make up the bulk of overall figures (sheep comprise 47.5% and goats 33.7% of the *aimag* total livestock numbers). The national average number of livestock in a *bagh* is 28,100, whereas the average *bagh* in Selenge *aimag* is 23,500 livestock (data projected in 2013). Mandal *soum* ranks as the 10th with its leading number of cows in the nation's 330 *soums*.

**Table 6.14 Livestock indicators, Selenge, Selected *soums*, 2014<sup>59</sup>**

	Number of livestock			In 2014				
	2012	2013	2014	Camel	Horses	Cattle	Sheep	Goats
<i>Soum</i>								
Bayangol	123,500	128,900	140,900	-	7,300	17,900	71,700	44,000
Mandal	100,800	106,100	115,900	600	11,000	30,000	38,200	36,600
<i>Aimag</i> Total	1,305,600	1314,200	1471,700	600	79,800	196,600	698,900	495,900

<sup>58</sup> A centner is a metric unit of mass equal to one hundred kilograms (100kg).

<sup>59</sup> Local Governor's Office (2015). The socio-economic indicators of Selenge *aimag*-2014, Local Governor's Office of Selenge *aimag*.

Livestock insurance coverage is low in Selenge *aimag*. Only 3.4% of total livestock in the *aimag* are covered by insurance (rank 17 of 21 *aimags*), while the coverage is 4.7 % for Selenge *aimag's* herder households (rank 16 of 21 *aimags*) revealing the deficiency of coverage for an economically significant sector. Low insurance coverage may be explained by a general perception among herders that due to the relatively good pasture in Selenge *aimag* compared to other areas in Mongolia, they need not worry about livestock insurance (or *dzud*). There is also a general lack of awareness of insurance and the benefits thereof (in the case of *dzud*, fire, drought or natural disaster, and so on.).

Mandal *soum* accommodates 21.8% of households in Selenge *aimag* with livestock, representing 10.6% of the total number of herders and households with livestock (i.e. urban households who own livestock in rural areas). Bayangol *soum* has the highest number of herders in the *aimag*, while Mandal and Bayangol have the highest percentage of herders per *soum* in Selenge *aimag*. In recent years most *aimags* have experienced a decrease in herder households and the number of herders. In 2013 Selenge *aimag's* herder households and the number of herders decreased slightly (0.1 to 0.4%) from the previous year, although in 2014 the number of herders (3.1%) and herder households (1.8%) increased slightly.

The production amount of livestock products varies in each *soum*. In the past year (2014-2015) Mandal *soum* produced 20-27% of all skins/hides from horses, cows and goats. These can be sold to market for an average of 1,024, 6,205, and 2,1754 MNTs per item, respectively.

### 6.3.7 Industry

Industrial production in Selenge *aimag* increased by 40% in 2014. This jump was primarily due to the mining industry contribution of 82.9% of total industrial production. Further delineation of the mining sector contribution shows that iron ore is the largest contributor at 80.1%. Moreover, the food and construction industries increased by 93.7% and 79.4%, respectively. From the comparison of major industrial products produced, those with the highest growth included cement, and alcohol and spirits. There were similar growth increases for mining and construction products including iron ore (56.7%), coal (44.2%), bulk wood (26.1%), lime (12.8%), bricks (8.7%) and food products such as flour (92%) and bread (38.1%).

Industrial production in Selenge *aimag* varies considerably in each *soum*. In 2013, production in Mandal *soum* increased by 21.4% and subsequently by 93.3% in 2014. The determinants of this large increase in production in Mandal *soum* were primarily due to the increase in production by the Tunkhel *bagh* wood processing factory and the distillery in Mandal *soum* centre. Depending on whether it has been a good or a bad growing season, permission / approvals to cut timber vary and 2014 proved to be a good season in which a high number of approvals were granted. The good season also translated into a bigger harvest of grains and grasses, amongst others, to supply the distillery in Mandal *soum*, which drove higher production there. In Bayangol *soum*, industrial production also varied considerably, with an increase of 20.1% in 2013, and a decrease of 38.9% in 2014. The key reasons for the decrease in production in Bayangol *soum* was due to the reduction in gold mining in the *soum*.

"The Sectors that will contribute to the further development of the *soum* are:

- Agriculture (especially animal husbandry farming and milk production factory);
- Construction;
- Vegetable oil production;
- Diesel production using rapeseed."

Bayangol *Soum* Governor

KII

### 6.3.8 Mining

There are a total of 96 deposits of 34 types of minerals in Selenge *aimag*. Recent discoveries of hard rock and placer gold deposits located along the Bayangol and Yeroo river fluvials are the main areas for mining development in the *aimag*. Selenge *aimag* is considered one of the wealthiest in Mongolia in terms of natural resources, with around 450 million tonnes of iron ore, 107 million tonnes of coal, 10 tonnes of placer gold, 56 tonnes of hard rock gold and significant lime deposits. The *aimag* is deemed as a strategically important region for the economy of Mongolia.

In Selenge *aimag*, several major mining production industries are in operation. For instance, during the past few years Boroo Gold gold mine has produced approximately 40% of the total gold production in Selenge *aimag*, and Bold-Tumur-Yeroo River LLC produces more than 80% of the exported iron ore from Mongolia, thus indicating the significance of the *aimag's* mineral production at the national level.

There are a total of 137 enterprises operating exploration licenses in the *aimag*, with a combined area of 254,800ha, and 167 enterprises with mining licenses, with a combined area of 1,931,100ha. Exploration and development is currently being facilitated through geological mapping of the *aimag*. Topographic maps with 1:200,000 scale have been developed for around 50% of the above-mentioned mining and exploration licence areas using the state budget. Moreover, satellite maps are currently being developed with foreign investment funding.

Selenge *aimag* aims to develop 2 main regional policies on mineral resources usage:

- The *aimag* is aiming to develop a policy to improve the *specific regional infrastructure* supporting local mining projects including:
  - Tumurtei iron ore exploration and production in the Bayangol Khustai region;
  - Gatsuurt Project in Mandal *soum*;
  - Ikh Taishir hardrock gold deposit in Bayangol *soum*;
  - Molybdenum deposit in Tushig *soum*; and
  - Exploration, production and export of coal at Ulaan Ovoo.
- In order to successfully enforce the law "To Prohibit Mineral Exploration And Mining Operations At Headwaters Of Rivers, Protected Zones Of Water Reservoirs" (the so-called 'Long Named Law'), it plans to create a protection area along the Selenge, Yeroo, Kharaa, Orkhon and Tuul rivers; to protect the areas under the special local protection (such as Ikh Alt Tolgoit, Kharganat and Sangiin rivers), which were previously explored and used for mining activities, and to implement the policy to appropriately use the areas with no waste and an excellent rehabilitation program under the order of the Selenge *aimag* CRK.

There is a general disconnect between awareness of the mining sector among citizens in the Project area. Of all household survey respondents, herder households in Kherkh *bagh* (77%) and Mandal *soum* (66%) have the highest awareness of the major mining projects (i.e. a broader understanding of the mining industry in Mongolia). Most urban household respondents named only the Boroo Gold project, whereas most herders mentioned Boroo Gold and Tavan Tolgoi. The reasons that herders are generally more aware of mining projects may be due to the fact that they may have more connection to or interaction with natural resource-based industries such as mining and exploration in their day-to-day activities, whereas mining projects are less visible or relevant to those households in urban areas. That being said, awareness of mining is generally low in the Project area. This may be explained by the fact that herding has been the main source of income and employment for people in both Bayangol and Mandal *soums* for the past 15 years, with agriculture as the second biggest economic and employment sector. Mining is not as big an employer despite its significant economic contributions to the *aimag* and *soums*, and is therefore less visible to the general public.

Household survey responses varied on their opinions on the impact of mining on livelihoods. More respondents agreed (moderately agree, or strongly agree) that mining offers better salaries and so improves livelihoods in Bayangol than in Mandal *soum*. However, there were more “do not know” responses to this question in Bayangol than in Mandal. The responses from herders compared to urban households were approximately the same (about half agreeing compared to disagreeing with the statement). These responses point to a general lack of awareness about the formal mining sector, the processes and technicalities thereof, and the potential benefits and risks associated with large-scale mining. They also indicate that there are “fence sitters” in the Project area, whose opinion may be readily swayed either way.

There is also a demonstrated lack of understanding of what effective stakeholder engagement encompasses, based on the responses gathered in the household survey. Given options as to their agreement with the statement that “effective engagement is undertaken at all stages of mine development” approximately one fifth of all respondents answered that they did not know. There were otherwise no significant differences (around 50% split) in opinion on this statement between Bayangol and Mandal, between *baghs*, or between herder and urban households.

The majority of household survey respondents agreed that there could be positive impacts due to the mining industry, including: enhancement of the local economy; increase in job availability; improvement of local citizens’ livelihoods and welfare; and an increase of investment in local development projects. There was no significant difference on this issue between the *soum*, *bagh* or herder and urban households.

*“Boroo Gold Company created 80% of its workforce from the local workforce market. Now local communities have high expectations from Gatsuert Project, in particular new jobs and supplier opportunities creation.”*  
KII with Head of *Aimag* Government Administration Office and Policy Development Department

With respect to the risks associated with mining (in general), over 50% of respondents stated that the top negative problems included water resource availability (water availability is not currently perceived as a problem, although respondents believe it will become an issue once mining commences, see further discussion in Section 6.6.5 Use of Natural Resources)); habitat degradation; decline of ambient air



quality; and increases in dust. There were a number of significant responses on the negative impacts of mining that are worth highlighting, including:

- Over 90% of the people in Kherkh *bagh* believe that mining has a negative impact on water resource availability, habitat degradation, decline of ambient air quality, and an increase in dust.
- Nearly 65% of respondents from Tunkhel *bagh* indicated that their key concern is the impact of mining on land quality.
- Herder households in Mandal *soum* had the highest percentage of respondents with concerns about water availability for herders.
- 48% of respondents in Mandal *soum* centre stated that habitat degradation is a problem, and they indicated that stopping any further mining in the area could solve this.

### 6.3.9 Finance

This evolution over many decades means that, today, Mongolia has a dynamic banking sector comprising 13 banks ranging from dominant players including the Trade and Development Bank, Khan and Golomt banks, to community development and microfinance providers..

*"Mongolia scores impressively when it comes to ensuring access to financial services considering ...around a quarter of the population are nomadic herders...far beyond the reach of the country's almost non-existent transport infrastructure. Provision of services of any kind – let alone banking – is a challenge. Yet almost 80% of Mongolians have a formal bank account...with the level of penetration far exceeding that of most of the country's neighbours including China, Russia and Kazakhstan. Mongolia outperforms other low-to-middle income countries on every financial inclusion variable apart from health insurance, its East Asian neighbours on most measures, and even rivals some high-income developed countries in areas such as penetration of debit cards. One in four has a loan; the number of women with bank accounts exceeds men by 10% with the proportion approaching that of North America and the Euro area. It scores particularly highly in inclusion of groups whose access to financial services is commonly limited, including those with only a primary education, low incomes and rural residents."*

EuroMoney Special Report July

2014<sup>60</sup>

There are a total of 67 banking institutions registered in Selenge *aimag* including:

- 31 Khaan Banks;
- 27 State Banks;
- 3 Khan Banks;
- 2 Golomt Banks;
- 2 Capital Banks; and
- 2 Trade and Development Banks.

An overview of the status of the banking sector in Selenge *aimag* is shown in Table 6.15. Notable aspects of the below figures include the reduction in the total cash flow in 2014 by 11.2%. This is indicative of the general contraction of the Mongolian economy which has also impacted household cash flow. In addition, the total number of loans in the *aimag* increased by 16% with the number of

<sup>60</sup> EuroMongey Special Report. 2014. Mongolia Aims for a Brighter Banking Future. [www.euromoney.com](http://www.euromoney.com).

overdue loans increasing by 47% and the number of non-performing loans by 60% (i.e. loans close to default). Furthermore, the number of deposits only increased by 10.9%. These figures are concerning as they indicate that households are increasingly living on credit, and struggling to pay back their loans. The low savings and deposits levels in the *aimag* compound this trend.

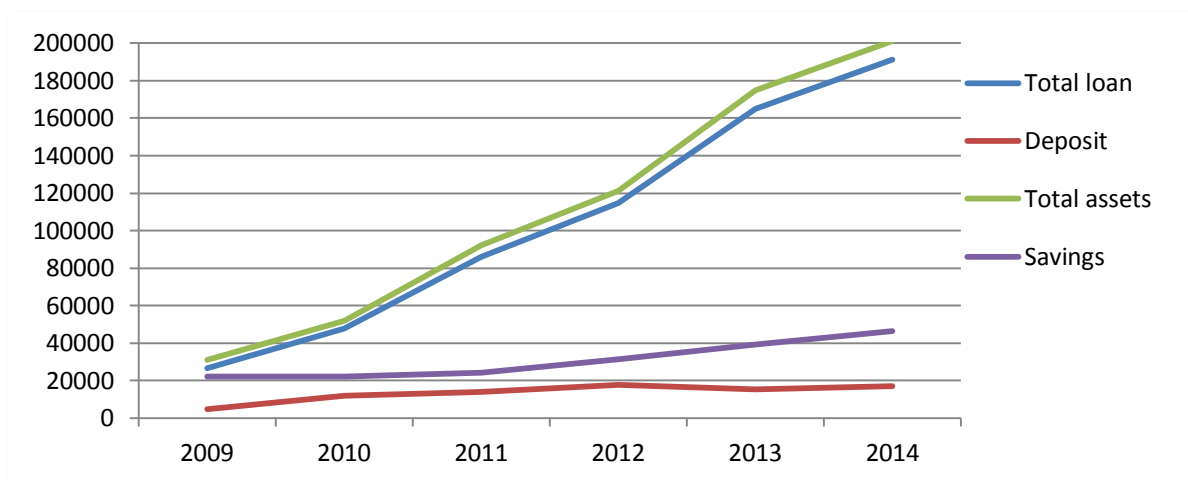
Both the number of lending facilities and the number of citizens taking out loans is increasing. The average loan per *soum* in Mongolia is 6,974,900 MNT, and in Selenge *aimag* it is 9,695,700 MNT. This may suggest that Selenge *aimag* residents are confident in their creditworthiness, or the assets being purchased are of higher value compared to the national average.

**Table 6.15 Banking sector parameters (million MNT), Selenge *aimag*, 2012-2014<sup>61</sup>**

Parameter	Year			Increase %
	2012	2013	2014	2014/2013
Cash	2,561.0	4,852.5	4,309.4	-11.2
Total loan	114,827.0	16,4827.0	191,373.0	16.1
Overdue loan	1,078.0	1,529.2	2,247.9	47.0
Non-performing loan	717.0	1,061.9	1,706.5	60.7
Asset	2,525.0	3,000.2	3,229.3	7.6
Total assets	21,284.0	174,761.0	201,050.0	15.0
Deposit	17,858.0	15,530.0	17,228.0	10.9
Time deposit	21,172.0	26,745.0	34,746.0	29.9
Demand savings	10,293.0	12,578.0	11,720.0	-6.8
Equity capital	11,643.0	15,356.0	21,798.0	42.0
Total liabilities	109,641.0	159,406.0	179,252.0	12.4
Profit/loss	11,643.0	15,356.0	21,798.0	42.0
Total income	21,001.0	26,526.0	35,223.0	32.8
Interest income	19,025.0	22,987.0	32,193.0	40.0
Total expense	9,358.0	11,170.0	13,425.0	20.2
Interest expense	3,110.0	4,520.7	5,062.0	12.0
Loan loss provision	103.0	27,024.0	1,363.2	-95.0

The national average of savings per *soum* is 2,918,600 MNT, and the average savings per *soum* in Selenge *aimag* is 2,313,100 MNT. Mandal *soum* leads in terms of savings deposited in the bank in Selenge *aimag*. The average savings per household in Mongolia is 1,998,300 MNT, whereas it is 1,322,700 MNT in Selenge *aimag*, which puts it 20<sup>th</sup> out of the 21 *aimags*. This suggests greater investment in assets rather than retaining savings in Selenge *aimag*. It also suggests that households in Selenge *aimag* are less prepared for a downturn, by virtue of having less saving and deposits, and more money tied up in assets. For example, should a *dzud* occur, households in Selenge *aimag* generally have fewer savings to tide them through the hard times and are already facing high debt levels.

<sup>61</sup> Local Governor's Office (2015). The socio-economic indicators of Selenge *aimag*-2014, Local Governor's Office of Selenge *aimag*.



**Figure 6.13 Loans, deposits and savings in Selenge *aimag* (million MNT), 2009-2014<sup>62</sup>**

Despite the high levels of lending in Selenge *aimag*, FGDs revealed that individuals at the *bagh* and *soum* level are finding it difficult to obtain loans and struggle with meeting the requirements to qualify for loans. Consistent with the above analysis, which indicates high levels of non-performing and overdue loans, is the fact that households indicated they are struggling to meet the interest rate requirements for loan repayments.

*"Local households' livelihoods depend on pensions, child allowances and income from livelihood products. Bank services are bureaucratic. It is hard to obtain loans from banks. Also loan interest rates are very high."*

Mandal *soum* citizens FGD

*"It is difficult to obtain bank loans as we don't have enough collateral assets to qualify."*

Mandal *soum* SME

FGD

#### 6.3.9.1 Financing and Loans

The above section indicates that citizens generally trust banks. When households require reliable financial services, more than 70% stated that they would approach a banking institution, as opposed to informal lenders. With respect to loan collateral, households tend to deposit their salary, pensions, livestock and properties. Livestock and salaries are the most common forms of collateral in Bayangol, while in Mandal real estate is more prevalent.

When households are faced with an emergency need for financial aid and support, 60% of respondents indicated that they approach their relatives for help, 20% go to banks, 10% to their local administration (Governor), and the rest to their friends. There was no major difference in responses between *soums* and/or households. 70% of respondents indicated that they are able to access assistance when they need it. 50% of people approached for assistance tend to help with cash, 20% with emotional support, and more than 20% with material support or donations. The average amount of money provided in these situations was reported to be 400,000 to 650,000 MNT. The key actions that locals take in the event of emergencies to support their livelihoods include selling off their livestock, finding employment, and requesting aid from their local administration (Governor). A number of the respondents also

<sup>62</sup> Local Governor's Office (2015). The socio-economic indicators of Selenge *aimag*-2014, Local Governor's Office of Selenge *aimag*

indicated that when they hit financial difficulties they often attempt to start a small business (handmade products such as bread and felt shoes, groceries, and honey, among others) to supplement their incomes or undertake artisanal mining activities. Seeking support from an administrator (*Governor*) is more prevalent in Bayangol than in Mandal *soum*, which may be more reflective of strong relationships enabled through residing in a smaller community.

#### **6.3.10 SMEs and New Economic Opportunities**

Since the advent of the market economy in early 1992, business opportunities have increased in the rural areas. In Selenge *aimag*, SMEs that have experienced particular growth include timber production, grocery products such as fruit and vegetable processing, pharmaceutical production, and walling and insulation material production. Growth in SMEs can be further linked to a Government run program which commenced in 2013 and provides concessional loans to SMEs. The program is called the "One *soum*, One product program" which references each *soum's* "brand" products or those products with a competitive advantage in each area (for example Mandal *soum* has a focus on the production of honey). When products are compared, 21% was bread production, 56% was other food industries such as pastries, cake, and dairy production, and 33% from sewing and wooden craft production.

In Selenge *aimag* in 2014 there were a total of 1,925 registered tax-paying entities, out of which 1,530 are limited liability companies (LLC), 237 limited liability partnerships (LLP) and 158 are corporations. Only 121 of the total tax-paying entities are considered to be sustainable operations, thereby indicating a high SME failure rate. In 2014, SMEs in Selenge *aimag* made products worth 3,558,400 MNT. 52% of these products were produced in Sukhbaatar *soum* (*aimag* centre), 12% in Mandal *soum*, and the rest in other *soums*. The main activities of the entities are bakeries (31.4%), wood and wooden materials (20.7%), dairy products (14%), and construction materials (9.1%).

The opportunities available to start a new business (or diversify their current business) using the profits from a current business were also surveyed. 30% of respondents stated that they are in the financial position to diversify their businesses. Specifically, 35% of Bayangol *soum* and 31.6% of Mandal *soum* citizens responded positively. However, only 27% of respondents in Tunkhel *bagh* responded that they are able to do this. On the other hand, a third of SME owners responded that it is not possible to finance new ventures from their existing business activities. This perception is likely due to, as mentioned above, the high number of unsustainable / failing SMEs in the Project area.

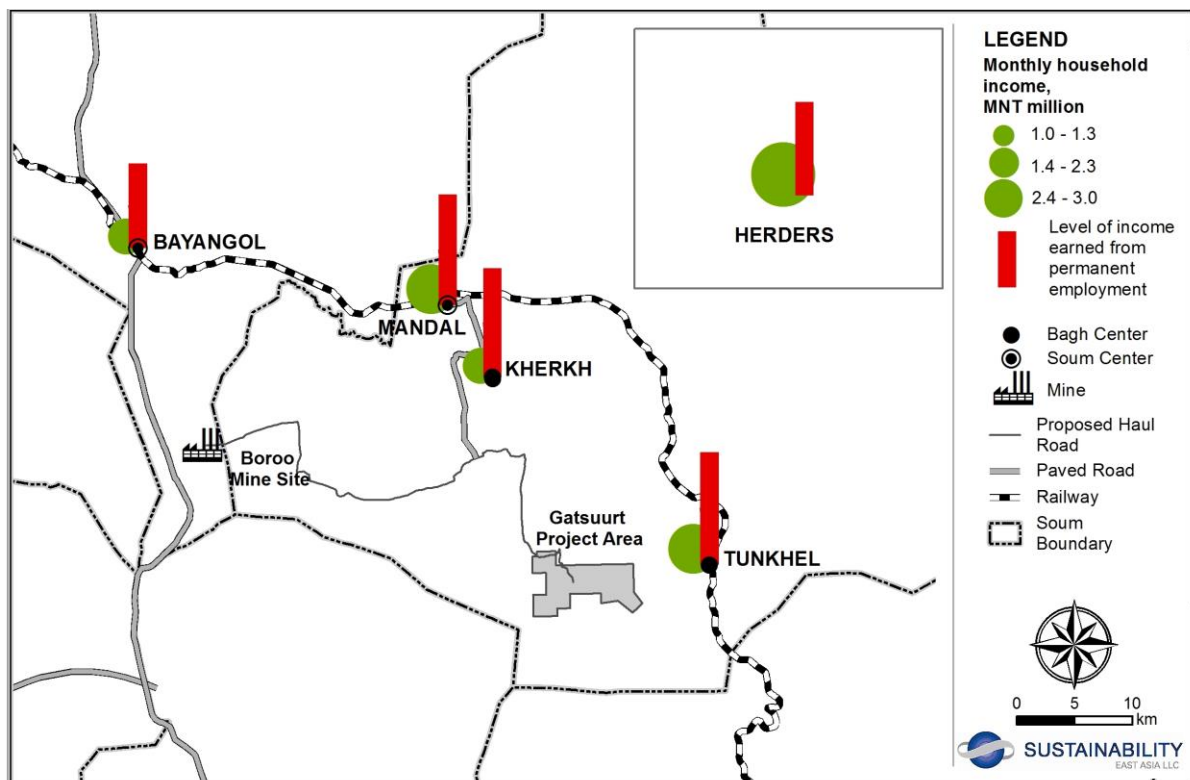
#### **6.3.11 Household Incomes**

The national average household income was 974,400,000 MNT in 2014. According to the household survey, the average household income in Bayangol *soum* is 1,039,000 MNT and it is slightly higher at 1,359,500 MNT in Mandal. The average income in Kherkh *bagh* (991,600 MNT) is 340,000 MNT lower than Tunkhel households. Average incomes in the Project area are slightly higher than the national average, possibly due to Selenge *aimag* being an agricultural hub in Mongolia which directly benefits incomes in the *aimag*.

As Figure 6.14 illustrates, the average income of herder families (1,446,600 MNT) is 217,000 MNT higher than the income of settled households in the Project area, and herders also receive 3 times more financial donations from other stakeholders. The reason may be due to the fact that wealthier people

in the Ulaanbaatar or other settlements have a tendency to donate more to herder households based on the perception that herders need assistance or are more vulnerable to economic shocks.

With respect to the distribution of monthly income sources among the surveyed households, 41% stated that they received their income from donations (which includes cash and non-cash support); 38.6% from pension and benefits; and 20.4% from salaries. There were significant differences between the income sources in Bayangol and Mandal *soums*. For instance, pensions and benefits were the highest (65.3%) source of income in Bayangol *soum*, while the highest income source in Mandal *soum* was donations (41.7%) from other stakeholders. As discussed in Section 6.1 Demography, Bayangol's population structure is skewed towards young children and this explains the higher dependency on benefits as the primary source of income. Herder household incomes consist of 44% salary in cash and 56% donations. For urban / settled households, 65.3% of their income is cash from salaries and the rest 35% is from donations.



**Figure 6.14 Average monthly household incomes in the Project area**

One in every 10 households surveyed responded that they use natural resources such as wild leek, ramson (a type of wild onion), antelope and roe deer for general household consumption (not generally for commercial purposes). In Bayangol *soum* 18.1% of respondents use such natural resources, while only 7.8% do so in Mandal. Mandal is a more urbanised *soum* than Bayangol and there is more travel for the collection of natural resources than in Bayangol, which explains the difference. There was no difference between herder and urban/settled households in the use of these types of natural resources.

### 6.3.12 Technology

In the last few years there has been an increase in the development of new information technology between and within *soums* in Selenge *aimag* as well as between Selenge *aimag* and Ulaanbaatar. The

number of mobile phone users is constantly increasing, in parallel with a decrease in the number of landline users. In 2004, Mongolia had only one internet connection source with 78 megabytes per second capacity. Now there are 6 connection sources available with a capacity of over 11 gigabytes per second, a massive increase in capacity since 2004. Between 2009 and 2010, the total number of permanent internet users increased to approximately 72 users per 1,000 citizens in Mongolia. This is a good indication of the enhanced capacity of internet connections, the decrease in internet fees, and the expansion in network development and services in rural areas. The number of permanent internet users is expected to increase further in the coming years.

Based on the national population and housing census conducted in 2010, 73.6% of Selenge *aimag's* population use mobile phones, and 17.7% of the *aimag* population have access to internet in their homes. There are no significant differences in the number of cell phone usage between Bayangol and Mandal *soums*, where approximately 74% of the population in each *soum* use cell phones. However, in Mandal *soum* 21.6% of the citizens use internet, while only 11.5% of Bayangol citizens use internet at home. The difference can be attributed to Mandal having a bigger urban population than Bayangol, whose urban population is smaller and rural population larger. The number of cable TV users in Selenge *aimag* was 2,630 by the end of 2012, and this had nearly doubled by 2014, where the number of users was 4,661.<sup>63</sup>

**Table 6.16 Percentage of the population using mobile phones and internet at home<sup>64</sup>**

	Percentage of population using cell phones	Percentage of population accessing internet at home
Sukhbaatar	80.3	32.8
Bayangol	74.0	11.5
Mandal	74.5	21.6
Selenge <i>aimag</i>	73.6	17.7

### 6.3.13 Living Standards

The poverty level percentage in Mongolia is 29.8%. In other words, there are a total of 837,600 people or 3 in 10 people who cannot afford to buy food and/or supplies to meet their basic needs.<sup>65</sup> The poverty level in Ulaanbaatar city is the lowest in the country at 23%, while the central *aimags* which include the Project area have the highest level of poverty at 26.3%. The National Statistical Office<sup>66</sup> reported a poverty level of 29.8% (7,259 people) in Mandal *soum* which is slightly higher than the poverty level in Bayangol *soum* (29.1% or approximately 1,429 people). The poverty level in Kherkh and Tunkhel *baghs* is also similar to the *soum* average.

The poverty gap indicates the percentage of people below the poverty line. It gives an understanding of distribution of poor people. The poverty gap in the central *aimags* is 7.8%, which means that those people classified as poor in the region have an income which is an average of 7.8% lower than the poverty line income level. The highest standard of living was observed in Ulaanbaatar, and the lowest was in the eastern *aimags*, followed by the central *aimags*. Overall younger, less educated, unemployed,

<sup>63</sup> [www.1212.mn](http://www.1212.mn).

<sup>64</sup> NSO (2012). *Population and Housing Census consolidated results for 2010*, Selenge *aimag*, Mongolian National Statistical Office, Ulaanbaatar.

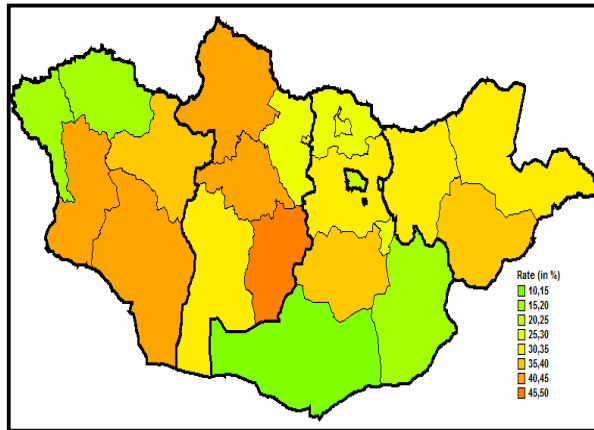
<sup>65</sup> National Statistical Office of Mongolia. 2010. *Population and Housing Census in 2010*.

<sup>66</sup> NSO, UNDP, 2012, *Poverty depiction based on population and housing census of Mongolia in 2010*.

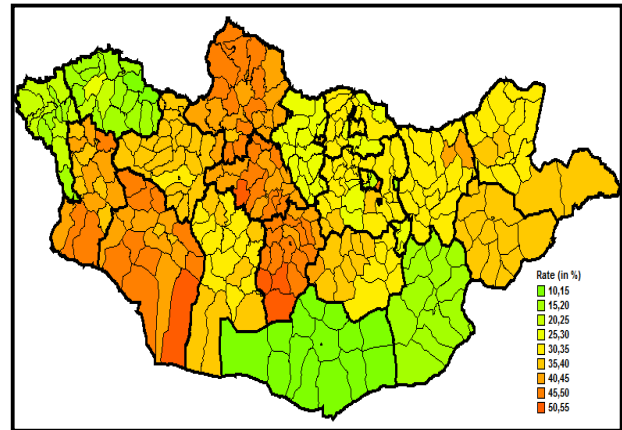


and large households are most likely to be poor. Poverty mapping is a good way to graphically depict living standards in an area. Figure 6.15 shows the poverty level in Selenge *aimag* is similar to the national average.

#### A. *Aimag*



#### B. *Soum*



**Figure 6.15 Poverty mapping, *aimag* and *soum*, 2010<sup>67</sup>**

With respect to housing types in the Project area, the household survey revealed that 59% of households in Bayangol and 28.8% of households in Mandal live in *gers*. This is consistent with higher urban population in Mandal *soum* as opposed to Bayangol. By *bagh*, the majority (78.3%) of households in Tunkhel live in conventional dwellings. The high number of people living in conventional dwellings in Tunkhel *bagh* can be explained by the easy availability of timber in the *bagh* which provides the key raw materials for the construction of conventional dwellings. In Kherkh *bagh*, less than 50% of households live in conventional dwellings. In general, living conditions are better in Tunkhel compared to Kherkh *bagh*, and similarly, in Bayangol *soum* compared to Mandal *soum*. For instance, one third of households in Mandal reported that their ger does not have a floor, while only 9% reported this in Bayangol *soum*, 22.2% in Tunkhel *bagh*, and 40.9% of households in Kherkh *bagh*.

The majority (more than 90%) of households covered by the household survey build their houses themselves. The average cost of a house was 10.5 million MNT in Bayangol, and 17.5 million MNT in Mandal. By *bagh*, it was 16.5 million MNT in Tunkhel, 16 million MNT in Kherkh.

### 6.3.14 Conclusion

The key themes that emerged out of the primary and secondary data analysis included that steep price inflation of goods and services is the major concern for households in the Project area. Thereafter, the poor quality of goods and households' inability to access markets are the major issues. Tunkhel *bagh* households experience these issues most acutely due the *bagh's* remote location. A related issues is the fact that households in the Project area appear to be increasingly living on credit, and struggling to pay back their loans (as seen in the low savings and deposits levels in the Project area).

Households in the Project area are increasingly frustrated and limited by their lack of access to professional assistance, knowledge and technology on effective crop and vegetable farming methods that may assist them in being better farmers and in obtaining higher yields. Moreover, livestock

<sup>67</sup> NSO, UNDP, 2012, Poverty depiction based on population and housing census of Mongolia in 2010.

insurance coverage is low in the Project area. This may be driven by the general perception that due to the good pasture in Selenge *aimag* compared to other areas in Mongolia, they need not worry about livestock insurance (or potential impacts of *dzud*). There is also a general lack of awareness of insurance and the benefits thereof (in the case of *dzud*, fire, drought or natural disaster, and so on.).

Household survey responses varied on their opinions of mining. More respondents agreed than disagreed that mining offers better salaries, and so improves livelihoods, in Bayangol than in Mandal *soum*. However, there were more “do not know” responses to this question in Bayangol than in Mandal. The responses from herders compared to urban households were approximately the same (about half agreeing compared to disagreeing with the statement). These responses point to a general lack of awareness about the formal mining sector, the processes and technicalities thereof, and the potential benefits and risks associated largescale mining. The responses also indicate that there are a number of “fence sitters” in the Project area whose opinion may be readily swayed either way.

## **6.4 EMPLOYMENT**

### **6.4.1 Introduction**

This Section discusses employment in the Project area, including the labour force and labour participation, employment and unemployment, key industry employees, working conditions, and salary and earnings.

### **6.4.2 Reference Data**

The reference period for the baseline study is 2012 to 2015. Secondary data sources consulted in the development of this section include national statistics, population and housing census data, official statistics from the Selenge *aimag* and Mandal and Bayangol *soum* local governors' offices. Primary data was gathered in KIIs and FGDs with local community members, as well as in the household survey conducted among households in the Project Area of Influence.

Additional tables and figures not part of the body of this Section are included in Appendix D.

### **6.4.3 Labour Force and Labour Participation**

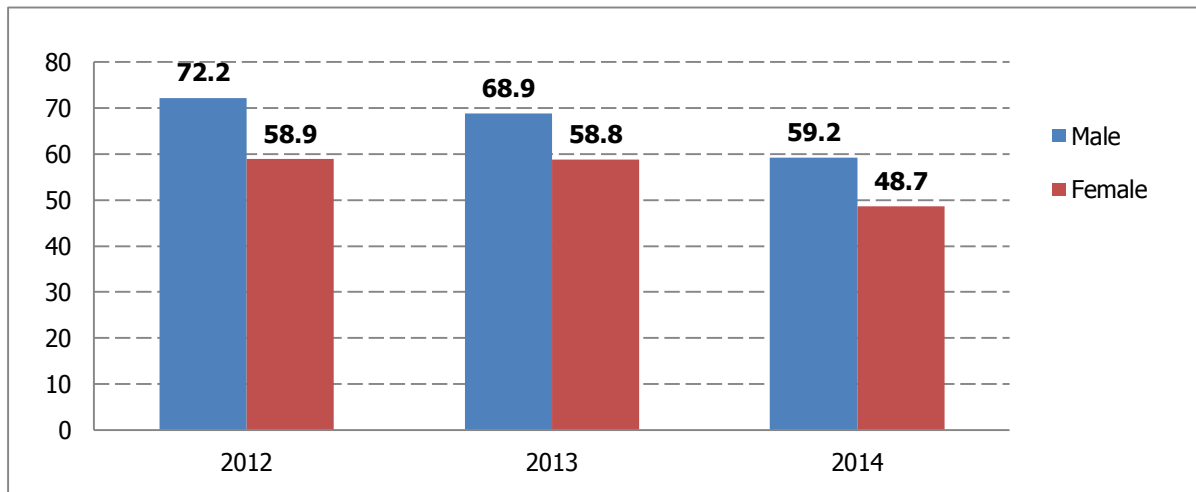
As outlined in Section 4.1 on demography Mongolia's working age population has steadily increased, reaching 69% of the total population in 2010. Mongolia has over 1.2 million economically active people, 3% (35,900 thousand) of whom reside in Selenge *aimag*. In the past 3 years, the working age population in Selenge *aimag* increased by 5.6. In practice, however, only 54.1% of the working-age population in Selenge *aimag* are economically active. Furthermore, the labour force participation rate<sup>68</sup> in Selenge has also dropped consistently in recent years. In 2014, the labour force participation rate dropped by 11.2% and employment increased by 4.2%, in comparison to the data from 2012. Poor participation in the labour force and the lack of economic activity can be partly attributed to the slowdown in the Mongolian economy in recent years, which has negatively impacted on job opportunities and employment. In addition, household survey participants indicated significant barriers to participation including, poor access to financial capital to start business, and lack of professional and technical skills for business success, among others (see Section 6.4.8 Job Creation for further discussion).

With respect to the gender ratio, female participation in the labour force is 48.7%, which is lower than the figure for males at 59.1%. The female employment rate of 91.3% is higher than that for males (88.5%). The difference among males and females with respect to economic participation is still high and there is no indication that this disparity will decrease at the *aimag* level, having only slightly decreased over the past few years.

29.4% of the total economically active population and 30.9% of the total employed population in Selenge *aimag* are from Mandal *soum*. As these figures illustrate, Mandal *soum* plays a significant role in the overall employment picture in Selenge *aimag*. As the largest *soum* in the country and home to nationally significant industries, Mandal contributes approximately one third of the *aimag's* total workforce.

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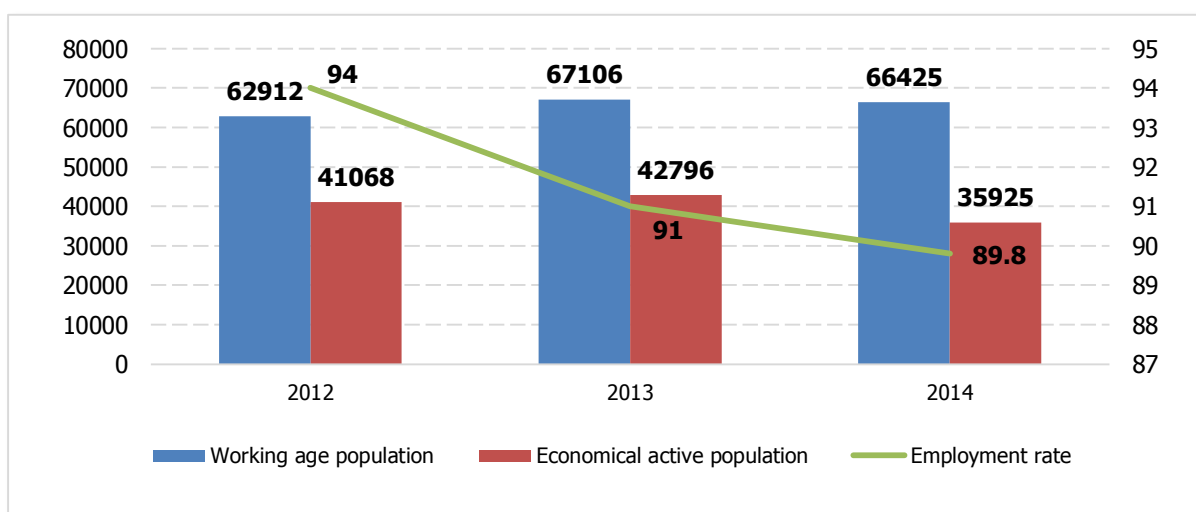
<sup>68</sup> Labour Force Participation Rate is the working age population divided by the economically active population.



**Figure 6.16 Labour force participation rate, by gender, Selenge *aimag*, 2012-2014**

#### 6.4.4 Employment

At present there are over a million workers in Mongolia and 3% of them reside in Selenge *aimag* (32,200 people). Since 2012 the employment rate in Selenge *aimag* has dropped consistently. It fell from 94% in 2012 to 91% in 2013 and further to 89.8% in 2014. The Selenge *aimag* Labour Department reported<sup>69</sup> that the employment conditions of most private sector companies are good / satisfactory, but due to low wages, there is a lack of a stable workforce. Small and medium enterprises (SMEs) primarily employ people in the following sectors: restaurants and shopping services - 50%; cropping - 30%; farming (cattle, pigs, bees and poultry) – 10 to 15%; while the remainder are in food production construction material production (blocks, bricks, putty), and wood products. The largest SME in the *aimag* has more than 200 employees and annual sales of 1.5 billion MNT. The smallest SME has less than 10 employees and annual sale of less than 200 million MNT.



<sup>69</sup> KII, Labour Department, Local Governor's Office, Selenge *aimag*, Sustainability East Asia LLC, 2015.

**Figure 6.17 Employment rate, Selenge *aimag*, 2012–2014<sup>70</sup>**

Of the total 183,600 civil servants in Mongolia, 5,700 or 3.1% are currently employed in Selenge *aimag*. There is demonstrated constant growth in public sector employment (5,074, 5,248 and 5,693 employees in 2012, 2013, and 2014, respectively). So, consistent with the general downturn in the Mongolian economy (slowing growth and investment climate), employment in the private sector has declined. At the same time, public sector employment has increased, which can be explained by the growth in the population and the Mongolian Government increasing focus on the provision of public services through decentralisation.

Private sector employment is the most common in Mandal *soum*, reflective of the major industries there including a distillery, agriculture, and cropping. A key facilitator of industry in Mandal is its access to the rail transport network traversing the *soum*. The household survey identified that the main types of employers in the *soum* are Limited Liability Companies (LLCs) at 41.3%, private businesses (including herding) at 29.4%, and the public sector at 13.5%, while the remaining 10% work for cooperatives and associations.<sup>71</sup> Unfortunately, the same statistics were not available for Bayangol *soum* at the time of the Study.

The household survey indicated that 51.6 % of all respondents are engaged in income earning activities, while at the *soum* level the number is 43.3% for Bayangol and 56.7% for Mandal *soum*. More than 50% of the total respondents in Tunkhel and Kherkh *baghs* are employed (in income earning activities – both formal and informal). In total, 51.9% of all herder households surveyed are engaged in income earning activities, while urban households make up 51.5%. Out of total respondents in the household survey, over 40% are self-employed, 33% work for private entities and the remaining 15.2% work for government organisations. The breakdown analyses per *soum* demonstrate that in Bayangol *soum*, 67.5% of the total respondents are self-employed, 21.4% work for private entities and the remaining 10.3% work for government organisations while in Mandal *soum*, 38.9% are self-employed, 38.9% work for private entities and the rest 17.2% work for government entities and / or the public sector.

**Employment and Artisanal Mining in the Project Area**

*"Two cooperatives are working in Noyot mountain (not Noyon mountain), but located 38km to the northeast from the soum centre. Most of us don't have any work to do right now. So this means instead that we stay in the soum centre looking for part time work, helping others for cash jobs. Many of the ASMs are interested in Boroo mine site and livelihood income projects. We are expecting to work in the Boroo site as artisanal miners (not in a formal employment capacity). Working as a 'Ninja' (artisanal miner) can't be done long term, because we know it is bad for our health, but we still prefer ASM to nothing and expect to do ASM at Boroo. We want to work on the open pit areas as ninja."*

ASM FGD, Kherkh

*bagh*

*"Artisanal miners look for other jobs as well, but its hard to find anything else."*

ASM FGD, Kherkh

*bagh*

*"We don't cover our household needs because we have no real income. There are only 2 cooperatives working at Noyot mountain. Others are not working at all there due to the following reasons: 1) there has been no exploration done at Noyot mountain, so the mineral resource extent is unknown; 2) mining costs are very high and a lot of investment is needed, even though it is small-scale mining. Now, artisanal miners have no income or jobs. There is no area except Noyot mountain for mining. We gave our request to the*

<sup>70</sup> Local Governor's Office (2015). The socio-economic indicators of Selenge *aimag*-2014, Local Governor's Office of Selenge *aimag*.

<sup>71</sup> Local Governor's Office of Selenge *aimag*. 2014. Socio-economic indicators for Selenge *aimag*, 2014.

*soum last year for approval for us to work in the Boroo Gold Mine area, but we don't have approval yet. Their response was that it is actually located to in the Bayangol soum territory, therefore miners in Bayangol soum might work there. We think the capacity of the Bayangol soum, ASM NGOs and cooperatives are weak."*

ASM FGD, Mandal

*soum*

The transition from a centrally planned, command-style economy was a significant trigger for the development of the ASM sector in Mongolia, due to the large pool of unemployed, semi-skilled and unskilled workers it created. Additionally, Mongolia's harsh climate, successive *dzud* between 1992 and 2002 and the subsequent loss of livestock and incomes forced many more herders to turn to ASM. Many more people's livelihoods have become increasingly dependent on the ASM sector as a permanent or supplementary form of income generation. The drivers of ASM include the attraction of high mineral prices (compared to other employment such as herding); lack of formal qualifications needed and therefore low employability in large scale mining and other sectors; poverty; higher income possibilities than other occupations (artisanal miners earn on average 57% more than the minimum wage); opportunities for income supplementation / seasonal employment; and the increased ability to support families and send children to school, among others.<sup>72</sup> In April 2010 the formalisation of the ASM sector in Mongolia was achieved through a majority vote in Parliament. This legislation provides for security of tenure: that artisanal miners will be able to secure mining land and hence viable workplaces and a stable income. It also provides for better access to occupational safety, social welfare and health services. However, in practice, the artisanal mining industry is still marginalised at a Government and societal level with respect to regulation, support, broad social acceptance and awareness.

From the analysis above and the FGD findings it is clear that ASM, while historically rooted in poverty, is driven by a wide range of factors. ASM can provide households a way in which to supplement their incomes, or it is a permanent occupation. For some Mongolians, many of whom are unable (due to lack of qualifications and finances) to pursue another occupation or translate their skills to mining in the formal mining sector, ASM is perceived as a legitimate occupation, especially for those working in ASM cooperatives where they can earn viable incomes and work autonomously. ASM is therefore a key issue in relation to the Gatsuert mine development and one which will require a sensitive management approach that takes into account the complex drivers of this practice.

#### 6.4.5 Income Diversification

A key theme that emerged from the household survey was the importance of income diversification strategies employed by households. Diversification strategies are an important way in which households manage risk in the Project area. It was found that most households engaged in multiple activities to supplement their incomes and provide for their families, including cropping, herding, artisanal mining (see above box), and informal production and services, among others.

##### 6.4.5.1 Cropping

Almost a quarter of households surveyed indicated that they engage in crop farming for household consumption and as an income diversification strategy. Of these households 22.7% of respondents own their crop plantation field, while the rest share fields with family or rent space (sharing family land is more common). At the *soum* level, according to the household survey, 21% and 23.4% own a crop plantation field in Bayangol and Mandal *soum*, respectively. The average household plantation ranges from around 5,500sq.m in Bayangol *soum* to approximately 7,500sq.m in Mandal *soum*. In the past 12 months, 80.8% of households with a crop plantation field in Bayangol *soum* planted grains and vegetables and harvested 360kg on average, the majority of which was used for household consumption. In Mandal *soum*, 69.2% of households planted grains and vegetables and harvested 873kg, 23.3% of which was sold and the rest for was used for private consumption. The average

<sup>72</sup> Sustainability East Asia. 2014. *Strategic Environmental and Social Assessment of the Mining Sector in Mongolia*.



income earned from crop farming activities was 1,875,000 MNT per household. The relatively low amount earned from crop farming activities by households is due to the fact that most household conduct crop farming activities primarily for household consumption, with additional produce not required for the household being sold. Households also indicated that there are barriers to selling their products, including the requirements to obtain local Government permissions to do so, and the requirement to then pay taxes. This is an effective disincentive for many households.

According to the household survey, 25% of respondents from Tunkhel *bagh* possess a crop plantation field, the average size of which is 11,000sq.m, which is 5 times bigger than Kherkh bag (2,199sq.m). In the past 12 months, the majority of Tunkhel *bagh* households (87%) planted and harvested 778.7kgs of crops and vegetables per household. The harvest is mainly designated for household consumption. In contrast, households from Kherkh *bagh* own relatively smaller plantation fields, and approximately 40% of their total harvest was for commercial sale with an average sales income of 2,606,000 MNT per household.

#### 6.4.5.2 Herding

Out of total respondents in the household survey, 75.4% in Bayangol *soum* and 51.5 % in Mandal *soum* have engaged in herding in the past 12 months. At *bagh* level, this indicator is as follows: Tunkhel – 44% of respondents from Tunkhel *bagh*, Kherkh - 67.6% of respondents from Kherkh *bagh* have respectively been running animal husbandry. The above statistics illustrate the high urban population in Mandal *soum*, and the relatively smaller urban population in Bayangol *soum*.

#### **Herding in the Project Area and the Difficulties in Diversifying Income Streams**

The number of herders has slightly increased in the Project area in the past year. In Selenge *aimag* the number was reported as 7,710, a decrease by 0.4% between 2012 and 2013, however the number increased by 3.1% to a total of 7,952 between 2013 and 2014. As of 2013 the number of herders increased by 2.1% in Mandal *soum*, while the number decreased by 2.3% in Bayangol *soum*. FGD data suggests that this is due to in-migration of herders from the Western region in response to accessibility of markets and good pasture in Selenge *aimag* compared to the western *aimags*. However this perception is not borne out in reality as the migration statistics discussed in Section 4.1 show that migration in the Project area has decreased.

The increasing difficulties experienced by herders in the Project area may be further explained whereby increasing profitability of herding is a function of the number of animals once is able to run on the pasture land up to the point that the land is no longer able to support the number of livestock. As a result, the pastureland in the Project area is increasingly degraded and less productive. This is also exacerbated by competition for productive land between agriculturalists and herders, in what is one of Mongolia's biggest cropping and agricultural hubs.

Furthermore, herders in the FGDs indicated that they feel unable to diversify out of herding due to their lack of skills, industry experience, and English language skills appropriate to work in the mining (and other) sectors. They are effectively confined to herding (and to the imperative of increasing their livestock numbers to maximise financial returns, or, less commonly, improve quality/yields to maximise financial returns). The perception that the problems associated with herding are due to the influx of herders from the Western *aimags* is a convenient perception that upon further examination belies the complex dynamics surrounding herding in present day Mongolia (see further discussion on land use and resources in Section 4.6 Land Use and Natural Resources for further discussion).

#### 6.4.5.3 Informal Production and Services

Only one household in Bayangol *soum* and 8 households in Mandal *soum* responded that they run informal production and services. The household respondent from Bayangol *soum* runs a trade business. Regarding the households from Mandal *soum*, the 3 of them are engaged trade, 2 run

cafeterias, 1 runs a shoe repair service, 1 runs a tailoring business, and 1 owns a carpentry and wood processing workshop. Only around 60% of these business owners pay income tax. In general, many local women run sewing / needlework, jewellery making, felt making, dairy production, chicken farming and pig breeding to generate income.

#### **6.4.6 Salary and Earnings**

At the national level, the gross average monthly salary is 796,600 MNT for employees working for private entities and organisations. The average salary for males (859,700 MNT) is higher than for females (733,300 MNT)<sup>73</sup>, or, females earn 85.2% of the average salary for males. In Selenge *aimag*, the average monthly salary is 693,300 MNT, lower by 103,300 MNT than the national average. In terms of gender, the national average salary for females and males is 625,000 and 654,400 MNT respectively. The difference in salaries of 4.5% between men and women in Selenge *aimag* is less than the national average.

According to the household survey conducted, the average monthly salary of respondents is 397,200 MNT. Breaking this down into *soums*, the average salary<sup>74</sup> in Mandal is 412,200 MNT and in Bayangol it is 360,200 MNT. Mandal *soum* has the highest number of respondents with monthly earnings of over 500,000 MNT (22.3%), which is consistent with its status as an economic hub with a larger urban population than Bayangol *soum*. Bayangol *soum* has a larger number of respondents with monthly earnings of up to 300,000 MNT. In contrast in the *baghs*, Kherkh *bagh* respondents have average monthly earnings of 407,600 MNT, which is higher than in Tunkhel *bagh* where the average is 386,900 MNT, both classified as rural areas.

#### **6.4.7 Working Conditions**

The household survey indicates that the majority (81%) of respondents from Bayangol *soum* believe that their workplace environment is standard, while 17.1% believe that they work in hard conditions. In Mandal *soum* 52% of respondents report their working conditions as standard, 23.5% as hard, and 10% as hazardous for their health and unsafe. In Tunkhel *bagh*, in which the forestry industry is a key employer and the work notoriously physically taxing, 35% of respondents perceive their working conditions as hard, 7% as toxic and hazardous conditions. In Kherkh *bagh*, 12.6% think that they work in hard conditions and 10% believe they work in hazardous and toxic conditions. When perceptions of working conditions among all households surveyed are further delineated into herder and settled (urban) households, the majority of respondents agree that working conditions are standard, with approximately 20% from both demographics perceiving conditions as heavy. So, even though herding is a physical occupation, it is clear that herders do not generally perceive their working conditions are abnormally hard or hazardous.

<sup>73</sup> NSO (2015). Mongolian Statistical Yearbook, 2014, Mongolian National Statistical Office, page 59, Ulaanbaatar.

<sup>74</sup> According to the statistical yearbook in 2012 of Mongolia, monthly average salaries of employees by occupation, the lowest was among skilled agricultural workers (360,800 MNT), and by sector it was lowest in agriculture (224,500 MNT).

**Table 6.17 Perceptions of working conditions<sup>75</sup>**

	Perception of the working conditions						Number of respondents
	Satisfactory	Standard	Heavy	Hazardous to health	Unsafe	Uncertain	
Soum							
Bayangol	1.7	81.2	17.1	-	-	-	117
Mandal	12.3	52.2	23.5	3.4	6.3	2.2	268
Bagh							
Tunkhel	7.3	46.3	35	4.1	3.3	4.1	123
Kherkh	11.8	64.6	12.6	3.1	7.1	0.8	127
Other	8.1	71.1	17.8		3		135
Households							
Herder	8.3	63.6	19.8	3.3	4.1	0.8	121
Settled	9.5	59.8	22.3	1.9	4.5	1.9	264
All	9.1	61.0	21.6	2.3	4.4	1.6	385

#### 6.4.8 Job Creation

In Selenge *aimag*, the number of new positions increased by 1,686 in 2013 and dropped to 1,548 in 2014, a decrease of 8.2%. A similar trend is evident in Mandal *soum* where 262 new positions were created in 2014, though this dropped by 3.3% compared to 2013. In contrast, 93 new workspaces were created in Bayangol *soum*, which is an increase of 17.7%. In contrast to the data, participants in the FGDs believe that there are more jobs and opportunities being created in Mandal than in Bayangol. This is possibly due to Mandal having a bigger economic centre and therefore driving the perception that there is more economic activity here than in Bayangol *soum*. Most of the jobs created in Mandal and Bayangol are seasonal in nature, and mainly in the construction of buildings (particularly in Mandal), in the agricultural sector.<sup>76</sup>

Due to Selenge *aimag's* location close to the Russian border and Ulaanbaatar, as well as the infrastructure links which traverse the *soum*, households indicated that there are many opportunities for households to conduct trade and establish SMEs. However, despite the availability of opportunities, there is still high unemployment and a lack of economic activity to exploit the relative advantages of location and good farmland in the *aimag*. Households indicated that they feel ill-equipped to take advantage of these opportunities due to a lack of human capacity, including professional and technical skills and experience, as well as poor access to and affordability of material inputs and equipment, and financial (start-up) capital. For example, households might have the land available to produce vegetables / crops commercially, however, they don't have the equipment and technology, including tractors / planters, or technical know-how to do so successfully.

<sup>75</sup> Sustainability East Asia LLC, 2015. Random survey of the households, 2015.

<sup>76</sup> KII Selenge Aimag Statistical Officer.

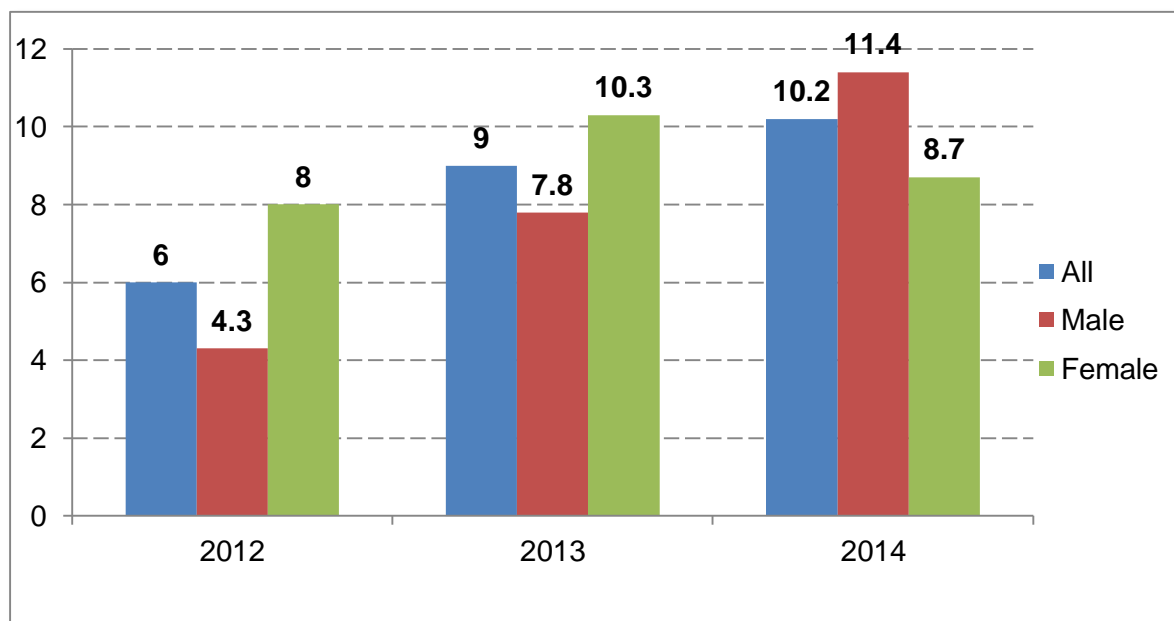
"Bayangol *soum* has a large available local workforce. This workforce mainly comprises local Bayangol people (80%). With respect to future job opportunities and which sectors will see the highest growth, local communities have high expectations for job opportunities from the development of the Gatsuurt Project."

KII with Bayangol Soum Government

Officer

#### 6.4.9 Unemployment

There are a total of 95,700 formally unemployed people in Mongolia, and 3.9% (3,700) of them are in Selenge *aimag*<sup>77</sup>. The number of officially registered unemployed people seeking employment opportunities in Selenge *aimag* increased from 2,480 in 2012 to 3,700 in 2014, an increase of 67.4%. The breakdown of the economically inactive population shows that 67% are unemployed, 23.4% are students, and 9.7% are people with disabilities at the *aimag* level. At national level, female unemployment is usually higher than males and a similar trend is observed in Selenge *aimag* in 2012 and 2013. The higher rate of females who are officially registered as unemployed can be explained by the fact that females are more active in seeking job opportunities through official channels, whereas males prefer to use their unofficial networks (acquaintance and friends) instead of recruitment agencies. This practice holds true in Selenge *aimag* for 2012 and 2013, but not in 2014 where officially registered unemployment was higher for males (11.4) than females (8.7%). The reasons for the increase in registration in 2014 is likely due the creation of new labour offices in *soums* due to changes at the Ministry of Labour, whereby a policy of increasing engagement and information dissemination on employment / unemployment at the local level is currently being pursued.



**Figure 6.18 Unemployment rate, by gender, Selenge *aimag*, 2012-2014<sup>78</sup>**

Unemployment is a significant problem in the Project area. A key finding from the KIIs and FGDs was that people reject low-paying jobs or perceived menial jobs (street sweeping, cleaning, etc.) and would prefer to attempt to remain autonomous and start their own business rather than work for someone else in a menial job. Men were found to be more likely to reject these jobs than women, which correlates

<sup>77</sup> NSO (2015). Mongolian Statistical Yearbook, 2014, Mongolian National Statistical Office, pages 53-55. Ulaanbaatar.

<sup>78</sup> NSO (2015). Mongolian Statistical Yearbook, 2014, Mongolian National Statistical Office, Ulaanbaatar.

with the higher employment rate of women than men in the Project area. Unemployment is most significant among younger people in Selenge *aimag*, most of whom are educated. Related to the high level of unemployment in the Project area is the problem of under-employment. KII and FGD participants indicated that many of the available jobs are temporary and / or seasonal and therefore mean that people are unable to draw a reliable income.

*"There are approximately 9,000 labour aged people in the soum. Around 5,000 have regular jobs. For the remaining people, it is uncertain. There are a lot of requests from local people to provide regular jobs. The Soum Government is trying to establish opportunities to support vegetable/crop farmers to build greenhouses which can be used in all 4 seasons of the year as well as vegetable and crop storage houses which can also operate in all seasons."*

KII with Mandal *soum* Deputy

Governor

*"Due to age situation (so many young people), there are not enough jobs for everyone."*

FGD with Mandal *soum* centre

citizens

*"No job opportunities exist for youth. More male youth are unemployed and so move away to find work."*

KII with Tunkhel *bagh*

Governor

The analysis of the educational background of Selenge's population that is unemployed / actively searching for employment opportunities affirms the high number of people with a secondary education. Indeed, the 65% of the population that is actively seeking employment has completed secondary education. This indicates that there is an educated available workforce in the *aimag*. It also indicates that there is a demand for the creation of job opportunities and for the provision of further vocational qualifications and training.

**Table 6.18 Percentage distribution of the registered unemployed population, by education level, Selenge *aimag*, 2012-2014<sup>79</sup>**

Education level	2012	2013	2014
Tertiary	23.3	17.9	18.3
Specialized	3.9	4.8	4.9
Complete secondary	62.2	63.5	65.0
Vocational	9.6	11.3	11.5
Uneducated	1.0	0.2	0.2
Total	100.0	100.0	100.0
Number of unemployed population	687	842	823

With regards to people that are not actively seeking employment (i.e. choose to remain unemployed), 44% of population surveyed indicated that this is due to the lack of available jobs, 31% stated that they are retired, and the remaining 11.4% indicated that they are studying full time. By *soum*, 37% and 55% of Mandal and Bayangol *soums* respectively, responded that their unemployment status is due to the shortage of job opportunities. FGDs in Tunkhel *bagh* indicated that unemployment is the primary issue for young people, in particular, young males. It was reported that this is resulting in young men leaving the *bagh* in search of work, which has knock-on effects on family structures and community dynamics in the *soum*. While this issue was highlighted in Tunkhel *bagh*, the out-migration

<sup>79</sup> Local Governor's Office (2015). The socio-economic indicators of Selenge *aimag*-2014, Local Governor's Office of Selenge *aimag*.

of youth to urban centres, and in particular to the capital city, Ulaanbaatar, is a common trend in Mongolia and in the Project area at large.

#### **6.4.10 Conclusion**

A number of key themes associated with employment emerged in the conduct of the Social Baseline Study. Job creation is generally low across the Project area. There were more jobs created in Bayangol *soum* than in Mandal *soum* between 2013 and 2014. Specifically, Mandal *soum* experienced a drop in job creation of 3.3%, while Bayangol experienced an increase by 17.7% (or 93 new jobs). Unemployment is a significant problem in the Project area. Unemployment is a major issue among younger people in Selenge *aimag*, most of whom are educated. Youth unemployment and lack of opportunity is arguably the biggest concern to the community in Tunkhel *bagh*. Related to the high levels of unemployment in the Project area is the problem of under-employment. KII and FGD participants indicated that many of the available jobs are temporary and / or seasonal and therefore mean that people are unable to draw a steady income.

With respect to employment, most people have a secondary education in Bayangol and work in herding, whereas in Mandal people are more likely to work in the trades and services or agricultural sector. Monthly average salaries are lowest in Tunkhel *bagh*, whose population is also the least educated in the of Project area. Income diversification strategies are an important way in which households manage risk in the Project area. It was found that most households engaged in multiple activities to supplement their incomes and feed their families. Herders indicated that they feel unable to diversify out of herding due to their lack of skills, industry experience, and English language skills appropriate to work in the mining (and other) sectors.



## **6.5 SOCIAL INFRASTRUCTURE**

### **6.5.1 Introduction**

This Section of the Social Baseline Report describes the social infrastructure in the Project area, including the development thereof, the current condition and adequacy of existing infrastructure, and the supply and consumption of social infrastructure. The content focuses on education, energy, water supply and waste water management, sanitation and solid waste management, transport infrastructure, and communications and postal services in the target *soums* and *baghs* in Selenge *aimag*.

### **6.5.2 Reference Data**

The reference data for this section covers the years 2012-2015 and includes the following secondary sources: national-level statistics; official statistics from *aimag* and *soum* Governor's offices. Primary data gathered in the household survey was also used to inform this Section on social infrastructure, including the infrastructure and consumption level statistics of the 400 households involved in the research. Furthermore, KIIs and FGDs were conducted to explore social infrastructure issues in the Project area and the qualitative data gathered in fora are referenced throughout this Section.

### **6.5.3 Education**

The current Mongolian education system is based on that which was introduced during Soviet times. During the communist period, where religious education declined and secular, primary education became compulsory, literacy rates rose to 98% and have remained high since the transition. The education system has continued to evolve with the Mongolian government striving to meet international standards and to provide educational access for all.<sup>80</sup> However, as discussed in Section 6.1 Demography, while education levels in Mongolia are generally high, a key issue currently confronting the country is the maintenance and modernisation of aging educational facilities and the building of new facilities to meet the requirements of the future. The education system comprises:

- Kindergarten (ages 2 to 6);
- Primary School – grades 1 to 5 (age 6 to 11);
- Secondary school – grades 6 to 9 (age 12 to 15); and
- High school – grades 10 to 12 (age 16 to 18).

Schooling is compulsory from age 6 to 16, after which, students can either drop out, or attend Technical, Vocational Education and Training (TVET) to complete the last two years of high school and learn a trade. Students must have completed grade 12 to be able to enter university. TVET schools – can comprise grades 10 and 12 in parallel to a 2 year trades courses, or, short term vocational training (2 weeks to 6 months), (from age 16). Tertiary education includes higher education at one of 101 public colleges and universities in Mongolia, or at an increasing number of private universities (from age 18).

Education facilities and resources are provided in *aimags*, *soums* and *baghs* based on population, funded by the state budget, and administered by the Ministry for Education. In order to provide

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<sup>80</sup> VSO Mongolia (2011), [The Mongolian Education Sector and the Role of International Volunteers](#).

education services for rural households, including nomadic herder households, Mongolia has long provided dormitory facilities in some *soum* centres for children during the academic year.

In Selenge *aimag* there are currently 38 kindergartens and 35 schools available. Mandal *soum* has 7 kindergartens, 6 schools, and 1 TVET college. There are 2 kindergartens and a school in Bayangol *soum*. Despite an increasing population, the number of institutions providing education at all levels is tending to remain static, leading to overcrowding of these facilities.

#### 6.5.3.1 Kindergarten Services

Nationally, with respect to kindergarten facilities, UNICEF notes that access to kindergarten still remains a challenge in Mongolia, despite creative practices such as the mobile ger kindergarten, which aims to cater for the children of nomadic herders.<sup>81</sup> Kindergartens include state-owned and private kindergartens as well as alternative educational programs that are coordinated in parallel with the kindergarten educational syllabus. In the Project area, at the *aimag* level there are 38 kindergartens available which are staffed with 244 teachers and catered for 7,394 children in the academic year 2014-2015. The majority (91%) of children attended kindergarten at the *aimag* level.

There are 7 kindergartens in Mandal *soum*, of which 6 are state-owned and 1 privately run. There are only 2 kindergarten facilities in Bayangol *soum*, 1 of which is state-owned and the other is privately owned. Despite attempts to do so and fulfil local needs for additional kindergarten services, no new kindergartens were established in the last two years in the Project area *soums* (see box below).

"The *soum* has planned to build a new kindergarten and the tender for its construction (350 million MNT) was selected at the *aimag* level. The bidder started its implementation 2 years ago but the kindergarten still hasn't been built due to limited budget. In addition, the *aimag* budget was set to complete the kindergarten construction work by this year."

KII with a Representative of the State Fund, Governor's Office, Bayangol

*soum*

"In Mandal *soum*, there are several kindergarten buildings under constructions now. Herein: a) State budget investment in construction of kindergarten for 100 children; b) State budget investment in kindergarten construction for expansion of kindergarten "Narkhan" (740,0 million MNT) for additional 60 children (80% complete) c) State budget investment in construction of kindergarten (913.7 million MNT) for 75 children in Kherkh *bagh* (80% complete) d) State budget investment in construction of kindergarten expansion in Tarni *bagh* (350 million MNT) - 30% complete."

Mandal *soum* Statistical

Bulletin

In total 1,442 children in Mandal *soum* (with 49.6% female participation rate) and 416 children attended kindergarten in Bayangol *soum* (with 48.5% female participation rate). The number of herder children attending kindergarten is very low, with only 3.7% of those children attending kindergarten. Due to the remote locations of most herder households and the difficulties of travel during the winter months, most herders' children don't go to kindergarten, except in the summer months when they can access it. However, as most state kindergartens shut down in summer, this effectively precludes many herder children from kindergarten education. There is an alternative educational program in place (as provided in the Law on Pre-School Education [2008]). It includes shift classes, nomadic groups and mobile teachers. In rural areas, "the nomadic group" is commonly organised during the summer, which specifically facilitates herders and rural communities access to kindergarten (albeit temporary access).

<sup>81</sup> [http://www.unicef.org/mongolia/media\\_11903.html](http://www.unicef.org/mongolia/media_11903.html).

"During the summer time, 86 children of herders involved in alternative education program through ger kindergarten."

KII with Director of State kindergarten in Bayangol

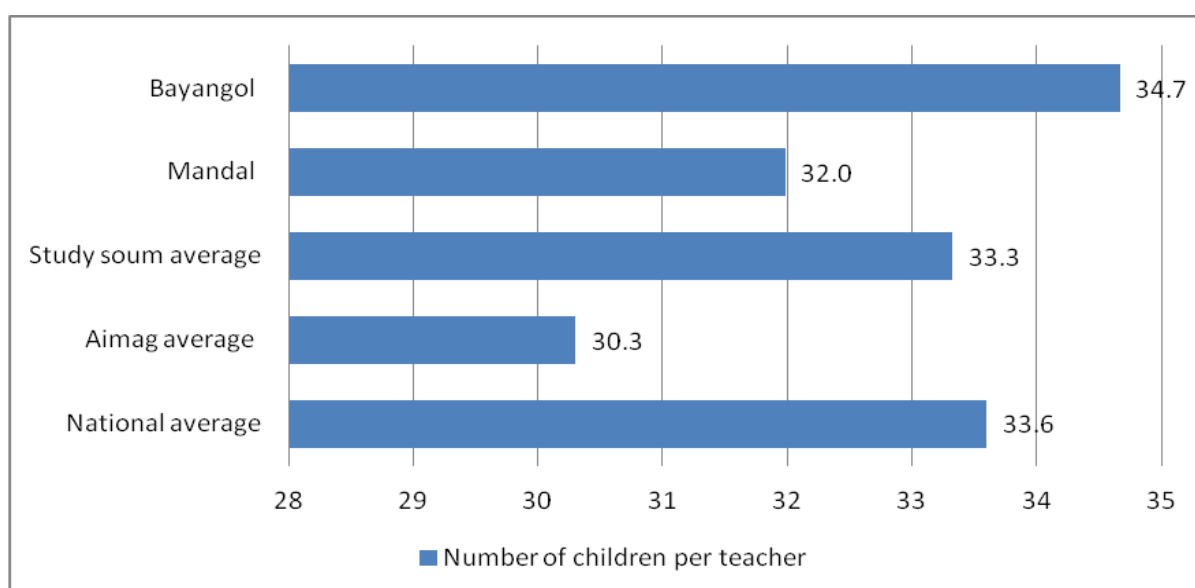
*soum*

"The kindergarten in Tunkhel *bagh* has been organised ger kindergarten for 20 children of herders in summer times."

KII with Director of State kindergarten in Tunkhel

*bagh*

The child-teacher ratio in kindergartens in Bayangol and Mandal *soums* is higher than the *aimag* average. Figure 6.19 shows that the *soum* average (Bayangol and Mandal) is 33.3 children per teacher, whereas the *aimag* average is 30.3. The ratio in Bayangol is 34.7 children per teacher, 4.4 % higher than the *aimag* average and slightly (1.1%) higher than national average.



**Figure 6.19 Kindergarten child-teacher ratio in the Project area, 2014/2015<sup>82</sup>**

In both Mandal and Bayangol, the kindergarten attendance rate is around 87% of the population, with the remaining 13% of children being turned away due to the facilities being at capacity. Those children that are turned away tend to be looked after by a family member. The KII with the Social Policy Officer in Bayangol highlighted the issue as follows: "In Bayangol *soum* there are a total of 733 children between the ages of 0 and 5 years old, of which 336 are attending a public kindergarten. The number of children greatly exceeds the capacity of the facilities, as the maximum number of children should be 275 in a public kindergarten. 49 children attend private kindergarten and 93 children do not attend kindergarten." Kindergarten provision at the *bagh* level was also researched, and FGDs indicate that facilities are operating over capacity and are not able to provide a sufficient level of service for the *bagh* children (see FGD excerpt below). This means children in the Project area are missing out on vital early childhood education, and will not be as prepared as those that do attend for subsequent stages of their education.

<sup>82</sup> Department of Education, 2015. Educational indicators, Selenge *aimag*.

"Kindergarten classes are over capacity. There are only 3 kindergartens supporting children in 2 *baghs*, which is not enough."

*Bagh* section leaders involved in the FGD in Mandal

*soum*

### 6.5.3.2 Primary and Secondary Education Services

The majority of primary, secondary, and high schools are public facilities. As of 2014, there were a total of 35 primary, secondary, and high schools with 17,502 children and 983 full-time teachers operating at the *aimag* level. Of the 35 schools in Selenge *aimag*, 32 are state-owned, while the rest are privately owned schools.

In the academic year 2014-2015, 2,139 children (566 children in Mandal and 117 children in Bayangol *soum*) were enrolled in grade 1. In total, 456 students (6 from Bayangol *soum*) were involved in non-formal educational programs (see Section 6.5.3.4 Non-Formal Education for further discussion). At the *aimag* level, there are 63 illiterate people (adults and children); this number has fallen by 17 persons compared to 2013, which may be due to availability of non-formal education programs to ensure compulsory attendance requirements are met.

**Table 6.19 Enrolment and graduation status, academic years 2012-2015<sup>83</sup>**

Location of schools	First grade enrolment			Graduation from secondary school (9 <sup>th</sup> grade)			Enrollment to high school (10 <sup>th</sup> grade)		
	2012 / 2013	2013 / 2014	2014 / 2015	2012	2013	2014	2012	2013	2014
Total of <i>aimag</i>	1,694	1,849	2,139	2,230	1,834	1,981	1,816	1,515	1,562
Mandal	491	520	566	613	510	498	506	411	39
Bayangol	78	71	117	117	83	105	81	68	78

School attendance declines with age. At the *aimag* level and out of 26,378<sup>84</sup> school-age children, school attendance in the academic year 2014-2015 was 17,502 students at primary, secondary and high schools, and 456 children in non-formal education. Of the full time students, 48.2% attend primary school, 30.6% secondary schools, and the remaining 21.2% attend high schools. The school attendance rate in the 2014-2015 school year was 99.9% at the *aimag* level. The number of children who dropped out of school has decreased consistently between the years of 2004 and 2007.

<sup>83</sup> Educational indicators, Statistic bulletin of Selenge *aimag*.

<sup>84</sup> Number of children ages between 5 and 19 in Selenge *aimag*.

**Table 6.20 Selected education indicators (primary, secondary and high) in the Project area, 2012-2015<sup>85</sup>**

	2012/2013	2013/2014	2014/2015
<b>Net attendance</b>			
Selenge <i>aimag</i>	17,817	17,580	17,502
Mandal <i>soum</i>	4,782	4,701	4,697
Bayangol <i>soum</i>	839	834	809
<b>Number of full-time teachers</b>			
Selenge <i>aimag</i>	958	964	983
Mandal <i>soum</i>	235	234	243
Bayangol <i>soum</i>	43	43	43
<b>Number of students in dormitories</b>			
Selenge <i>aimag</i>	1,230	1,131	1,114
Children of herders <sup>86</sup>	-	-	831

*Soums* have school facilities at all levels. There are three schools in Mandal *soum* centre, plus one each in Kherkh and Tunkhel *baghs*. 4,776 (98.4%) of children aged between 6 and 17 attend primary, secondary and high schools in Mandal *soum*. 49.7% of total students attend primary school, 29.6% are in secondary education and 20.7% of the total students in Mandal *soum* are in high schools. In Bayangol *soum*, there is a high school which serves 809 pupils. 98.4% of children aged between ages of 6 and 17 attend primary, secondary and high schools, of which 48% are in primary school, 32.2% are in secondary school, and 19.7% are in high school.

There are only two dormitories in Mandal *soum* (one of these is in Kherkh *bagh* and the other in Minjinkhangai *bagh*). In total, 122 children were accommodated in these two dormitories in the academic year of 2014-2015. Both facilities are over-subscribed, with Kherkh high school's dormitory accommodating only 42% of herder's children, and the facility in Minjinkhangai over-crowded (actual capacity is for 80 students) due to additional intake of students at the school in the area. There is also a dormitory house in Bayangol *soum* which served 138 children in an academic year of 2014-2015. The dormitory house in Bayangol *soum* has capacity for 130 students, and in academic year 2014-2015 accommodated 138 children. Furthermore, the total number of herder's children needing accommodation in Bayangol *soum* was 165. As indicated above, and in the excerpt from an FGD in the box below, boarding facilities are an issue in the Project area due to the lack of existence thereof, and also where they do exist, due to over-subscription and overcrowding.

"There is no school dormitory in Tunkhel *bagh*. Therefore, children from rural areas encounter some difficulties in attending school. Without a dormitory, those children are reliant on staying at a friend or relative's home during the academic year to be able to attend school."

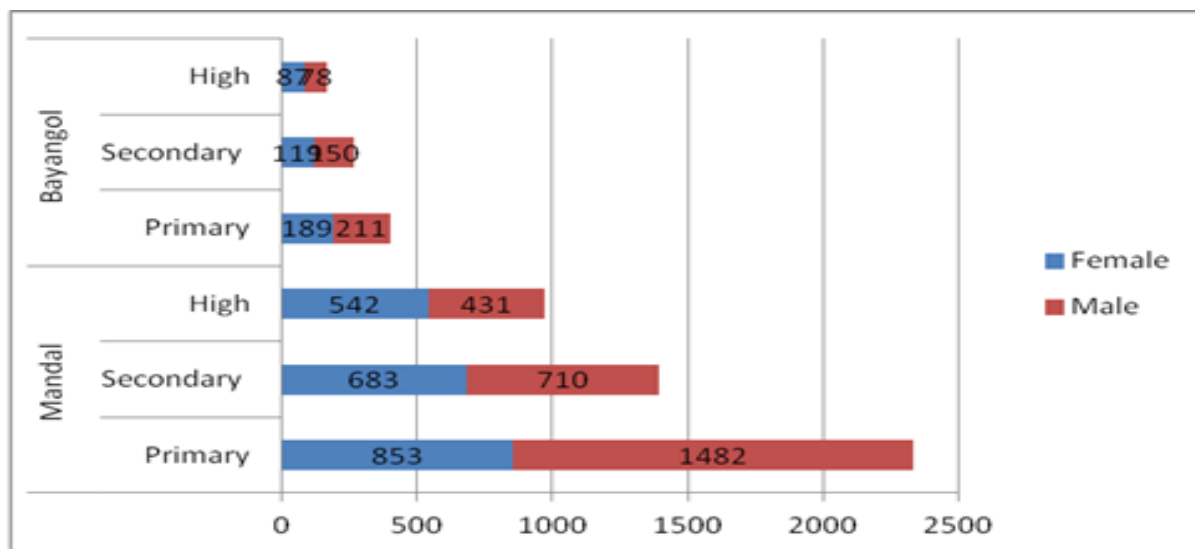
FGD among artisanal miners group in Tunkhel *bagh*

There is disparity in gender ratios at schools, particularly at the primary level. In Mandal and Bayangol *soums*, male students are dominant at primary schools in the Project area. However, as Figure 6.20 shows, the sex ratio declines as students' transition to high schools in both *soums*. More girls progress

<sup>85</sup> Department of Education, 2015. Educational indicators, Selenge *aimag*.

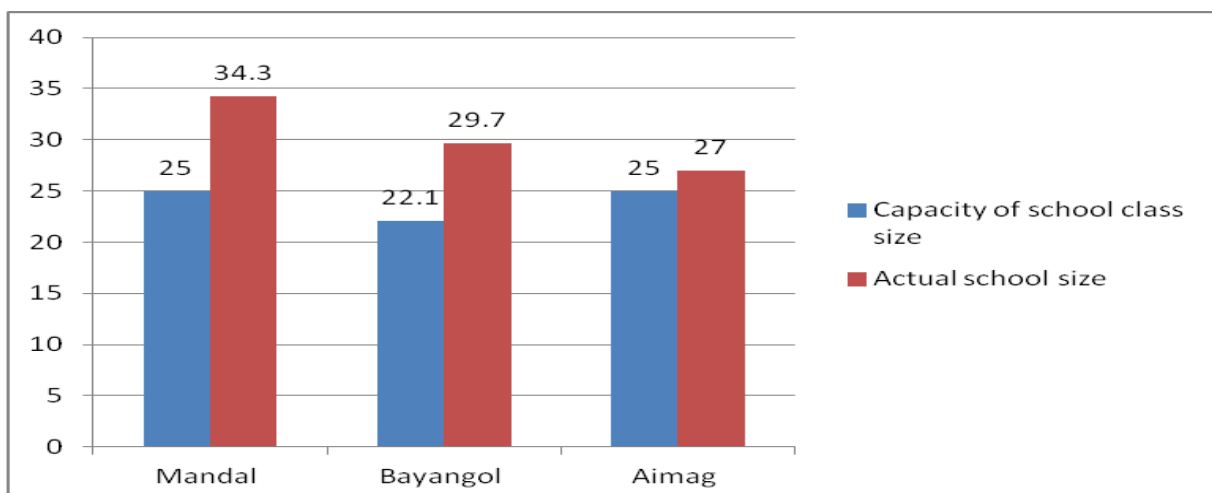
<sup>86</sup> There is no data available about children of herders in the academic years of 2012/2013 and 2013/2014.

to high school than boys. This is due to male students dropping out (to assist families with herding, pursue vocational education instead of regular school, and/or pursue employment). There is a high gender disparity between enrolment in primary school and enrolment in secondary school. In academic year 2014-2015, the transition rate from secondary school to high school declined. In terms of gender, the female student transition rate is higher than the male rate. Transition rates are an influential indicator for gender disparity in further education acquisition and employment opportunities later on in life. As more females are enrolled in secondary education, they will be more likely to obtain further education (tertiary and vocational) in the future and potentially better jobs (and hopefully, earning power).



**Figure 6.20 Sex ratio of school attendants, academic year 2014-2015, in both *soums***

In academic year 2014-2015, Mandal *soum* had the largest average class size of 34.3 students, higher by 7.3% than the *aimag* average and nearly ten students more than class capacity. Bayangol *soum*'s average class size is 29.7 students, which is lower by 9.3% than the *aimag* average but still 7 students over class size capacity.





**Figure 6.21 School class size, academic year 2014-2015 (full-time students)<sup>87</sup>**

In Selenge *aimag*, the ratio of students per teacher at the beginning of the academic year 2014-2015 was 17.8, a decrease by almost 1 student compared to the previous year. In Mandal *soum*, the ratio is 19.3, up by 1.5 students than the *aimag* average and also slightly higher than in Bayangol *soum*. These figures reveal that remote rural *soum/bagh* schools have fewer students per teacher than in urban areas. The ratio is the highest in primary education (28.1 students per teacher in Mandal *soum*; 33.3 students per teacher in Bayangol *soum*). This is consistent with the figures presented above that show a higher percentage of primary school attendants versus secondary education. The Bayangol *soum* centre citizens FGD corroborated the statistics, citing with respect to educational facilities that “the *soum* has a lack of primary school teachers”.

**Table 6.21 Pupil-teacher ratio for general educational schools, by academic years<sup>88</sup>**

	Number of children per teacher		
	2012-2013	2013-2014	2014-2015
<b>National average</b>	<b>18.5</b>	<b>18.3</b>	<b>18.4</b>
<b>Central region average</b>	<b>17.7</b>	<b>17.9</b>	<b>17.4</b>
Selenge <i>aimag</i>	18.6	18.2	17.8
Mandal	20.3	20	19.3
- Tunkhel <sup>89</sup>	-	-	18.9
- Kherkh <sup>90</sup>	-	-	16.5
Bayangol	19.5	19.3	18.8

*“Each year, around 40 percent of total graduate students go to universities. The remaining students go to *soum* TVET.”*

Social Policy Officer/Social Worker

### 6.5.3.3 Vocational and Tertiary Education

There is limited TVET education availability in the Project area and the facilities that do exist provide training for a predominantly male student population. At the *aimag* level, there is only one vocational training centre, which operates out of Mandal *soum*. In academic year 2014-2015, this institution provided vocational education and training to 395 students (see Table 6.22). 135 students of the total students (24.2%) are female students. The enrolment rate increased by 9.5% compared to the previous academic year.<sup>91</sup> This TVET has a particular focus on the construction sector, and it can be seen that these occupations tend to be male-dominated professions. Most female students are studying to be chefs, dress-makers, plasterers, hair-dressers, and farmers, whereas men are predominantly studying to become general mechanics, heavy truck mechanics, plasterers, welders and plumbers.

<sup>87</sup> Department of Education, 2015. Educational indicators, Selenge *aimag*

<sup>88</sup> Educational indicators, Statistic bulletin of Selenge *aimag*

<sup>89</sup> No data available in the years of 2012/2013 and 2013/2014.

<sup>90</sup> No data available in the years of 2012/2013 and 2013/2014.

<sup>91</sup> The data on graduations by courses is not available.

**Table 6.22 Number of students at the Mandal *soum* TVET, by occupation, 2015<sup>92</sup>**

Nº	Occupation	Total students	Female	Female (%)
1	Chef	61	49	80.3
2	Dress-maker	32	32	100.0
3	Civil plasterer	54	28	51.9
4	Bricklaying / Plastering	6	1	16.7
5	Mechanic	63	0	-
6	Mechanic (heavy truck)	44	0	-
7	Welder	59	0	-
8	Plumber	17	0	-
9	Vegetable farmer/ driver	15	4	26.7
10	Animal husbandry farmer/driver	20	6	30.0
11	Reforest	8	6	75.0
12	Hairdresser	11	9	81.8
13	Machinist and tractor driver	5	0	-
<b>Total</b>		<b>395</b>	<b>135</b>	<b>34.2</b>

#### 6.5.3.4 Non-formal education

"A national program to develop non-formal education" was instigated in the Mongolian Government Resolution No. 116 (1997) in accordance with the provisions of Article 17.2 of the Law on Education. The non-formal educational system facilitates both informal educational programs that support formal education and livelihood educational programs, including:

- Literacy training at a beginner, intermediate and advanced level;
- Alternative education (includes primary, secondary and high education) for schools drop-outs and comprises after-hours / night classes and short training classes to assist students obtain school certifications;
- Life skills training (includes life skills, health, and others).

Non-formal education at an *aimag* level is coordinated through 15 non-formal education centres based on general secondary schools. The major educational programs focus on literacy and alternative programs. In Selenge *aimag*, 63 people took part in literacy programs and 456 were students involved in alternative programs in the 2014-2015 academic year. In the 2014-2015 academic year 81 new students were involved in alternative programs. Out of these new students 42% or 34 have never enrolled in formal schooling before, while the rest or 58% are formal schooling drop-outs. Some of the key factors for children never having enrolled in formal schooling or dropping out include child employment due to low living standards and big families (poverty); long distances to get to *aimag* and *soum's* school and the dormitory shortages; and orphans and disabled children, children with poor care (family of alcoholics, ASMs).<sup>93</sup> Furthermore, according to the household survey the key reason for boys dropping out of school are primarily to become herders and to contribute to the family's livelihood. For girls, the main reason for dropping out of school or never attending school is illness.

**Table 6.23 Number of students attending the alternative program, 2014/2015<sup>94</sup>**

	Primary education	Secondary education	High education
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<sup>92</sup> TYET, 2014-2015, Mandal *soum* statistical bulletin, 2015.

<sup>93</sup> <http://www.mongoleducation.mn/modules.php?ss=4&id=192> No research done at Selenge *aimag*.

<sup>94</sup> Socio-economic statistic bulletin of Selenge *aimag*, 2014.

<b>Aimag</b>	106	214	136
Mandal	15	29	38
Bayangol	1	20	-

## 6.5.4 Energy and Heating

### 6.5.4.1 Energy Supply

Energy is an especially significant sector of infrastructure that directly affects the national economy, sustainable development of the country and the quality of life of the general public. Up to the present in Mongolia, the State has managed almost all energy production, its transfer and distribution. With sharp economic growth in recent years, the demand for energy has outstripped supply, and the country is currently grappling with how to construct the energy facilities required and the huge investment necessary, especially given the geographic and climatic challenges of Mongolia.

Selenge is generally considered to have a good power supply, with much of the infrastructure developed during the Socialist period. While all of Selenge's 17 *soum* centres have electricity, not all citizens are able to access this centralised supply. Within Selenge *aimag*, 24.5% of all households in Selenge *aimag* live in traditional dwellings or *gers*, 74.6% live in houses and 0.9% lives in other types of dwellings.<sup>95</sup> At the *aimag* level, 684 households live without electricity, which represents a decrease of 2.8% since the previous census study. Further, 81.4% households living in *gers* or residing in remote / rural areas live without electricity.

The Darkhan-Selenge Electricity Distribution Network (DSEDN) operates through all *soums* of Selenge *aimag* and provides energy to all entities and institutions and household consumers in *aimag/soum* centres. DSEDN distributes electricity to 3,466 entities and 40,810 households in the territory of 74,000 square km. Since 2001 the price of power sold to the central region has grown 1.5 times, the tariff for housing heating has risen by 1.65 times and tariffs for household heating have risen by 2.5-3.75 times.<sup>96</sup>

The main source of power supply in Mandal *soum* is Zuunkharaa sub-station. Power for the sub-station is imported by 110 kilowatt power line from the Central Energy System through the DSEDN and distributed to 110, 35, and 6 kilowatt lines. Between the years of 2009-2012, a power substation was built in Tunkhel *bagh* of Mandal *soum*.

As indicated by the below excerpts from KIIs, there seems to be a disconnect between the *aimag*-level perceptions of electricity infrastructure access and coverage and the *soum* and *bagh* level experience. *Aimag* level authorities suggest that the electricity infrastructure is generally well established, while at the *soum* level it was revealed that energy supply services are inconsistent and that a monopoly on supply means energy is expensive.

*"The infrastructure of Selenge aimag is well developed compared to other aimags, with most infrastructures established during socialist time in state farms. In most soums roads are developed and electrical grids are established. However the exception is the infrastructure of Eruu and Khuder soums – this is not well established."*

KII with Head of Policy Development Department in Selenge

*aimag*

<sup>95</sup> *Aimag* program document to create healthy environment, job opportunities and schools at *bagh*, *soum* and *aimag* level.

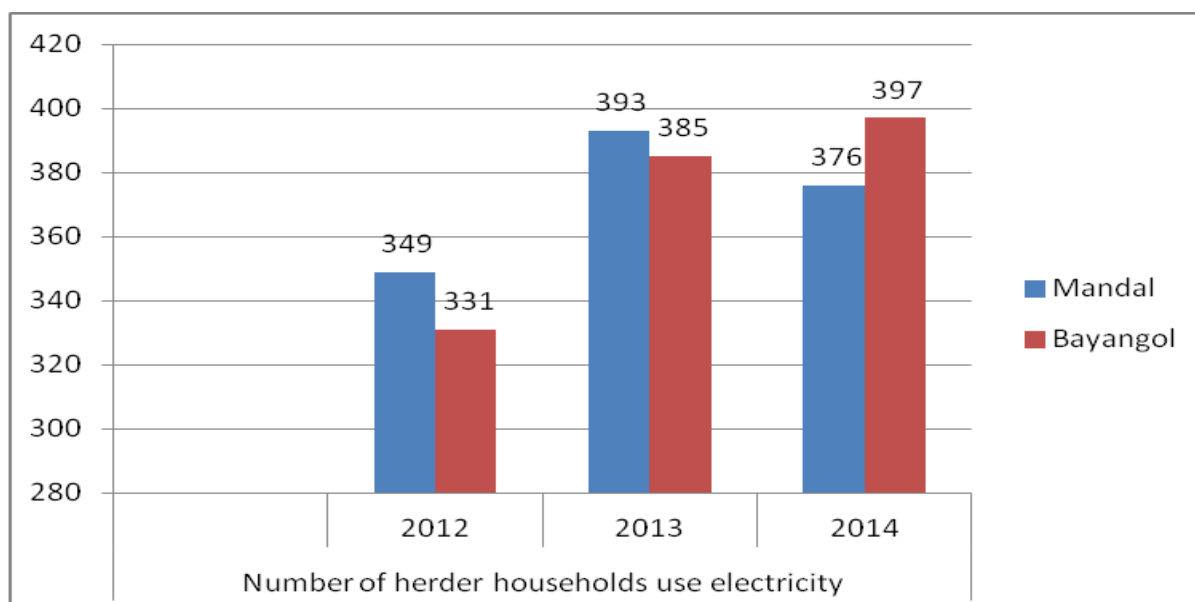
<sup>96</sup> Energy Governance assessment, 2012.

*"Mandal soum's power is monopolised by one source and is dependent on the Darkhan/Selenge Power Station. But the service is not good. Some areas of the soum centre still lack an electricity supply, for example, not all citizens of 3rd and 7th baghs have electricity."*

KII with *Soum* Deputy Governor in Mandal

*soum*

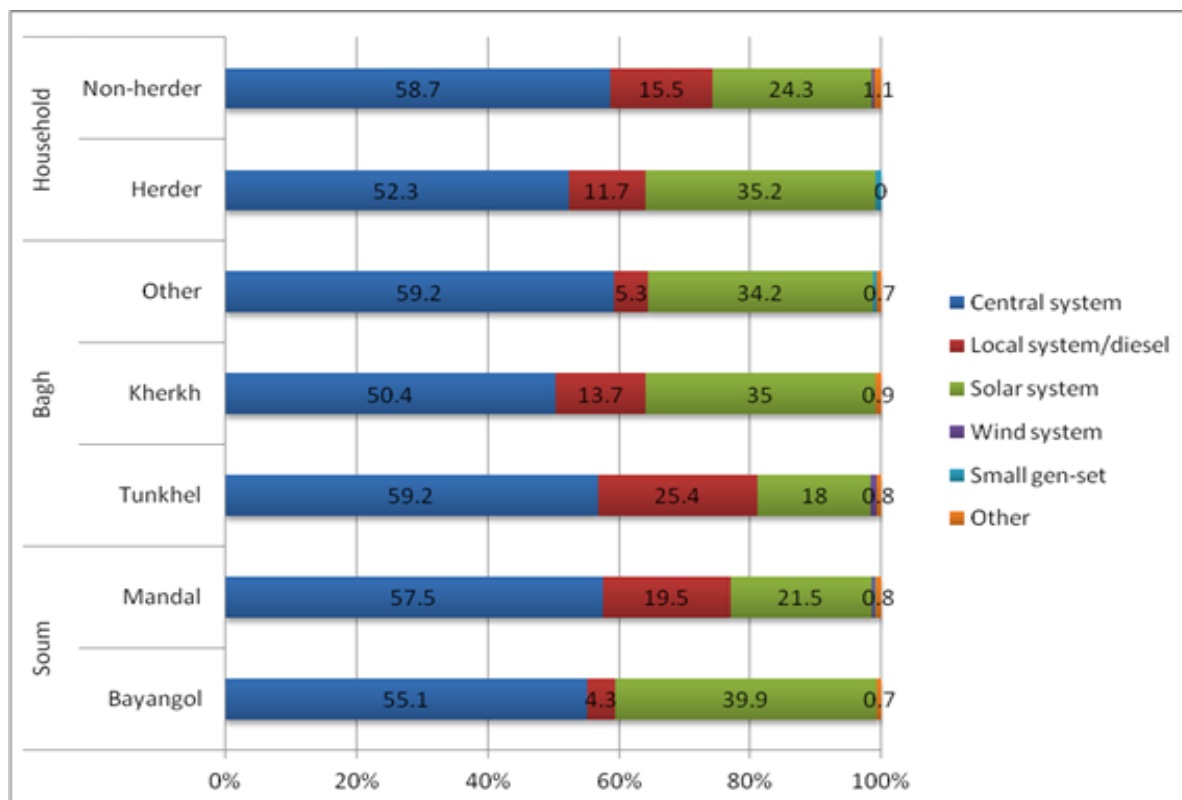
Further to the above, and unsurprisingly, nomadic households access the centralised power supply least, and tend to use small, decentralised supplies such as solar or wind power. However, as Figure 6.22 shows, herder access to the centralised supply system is slowly increasing. According to the *aimag* statistical data, herder households have the least access to the centralised electricity network. Figure 6.22 shows that only 16.3% of herder households in Mandal *soum* (376 herder households out of 2,310) have access to centralised electricity. In contrast, 67.7% of Bayangol herder households (397 herder households out of 586) have access to centralised electricity, which may reflect an increasing semi-settled lifestyle of herder households, or greater access/proximity to the centralised source.



**Figure 6.22 Number of herder<sup>97</sup> households accessing centralised electricity**

Figure 6.23 presents results of the household survey on the energy resources of households residing in the *soum* centres and *gers* in remote rural areas. The majority (55.1% in Bayangol and 57.5% in Mandal *soum*) of households residing in *soum* centres consume energy from the central energy system, while 21.5% of surveyed households in Mandal *soum* and 39.9% of surveyed households in Bayangol *soum* use renewable energy. Solar systems are prevalent across all surveyed areas, in particular, for herders and those in Bayangol. Tunkhel was the exception at the *bagh* level with a greater reliance on a local diesel system compared to other *baghs*. 19.5% of surveyed households in Mandal *soum* also reported that their household energy resource is based on the local diesel system. In some *soum* or *bagh* centres, electricity is supplied through a diesel power station which does not usually work throughout year (only in the winter months between October and April). These diesel power plants normally supply electricity for 4-5 hours per day. The diesel power plants are inefficient, both technically and economically and have high operating costs.

<sup>97</sup> This refers to all households (remote and in semi-settled areas) that identified themselves as herders.



**Figure 6.23 Type of electricity sources you use, by *soum* and *baghs*, percentage**

#### 6.5.4.2 [Heat Supply](#)

Heat supply is an essential basic service in Mongolia, but it is not accessible to everyone, especially people in rural areas in both Mandal and Bayangol *soums*. The current heating system in *soums* mainly consists of (i) small stoves; and (ii) centralised and decentralised coal fired boilers used for heating in schools, dormitories, hospitals, local government office buildings and some apartments.

The majority of heating in households is independent of the centralised grid. Most households residing in Bayangol (98.5%) and Mandal (88.8%) *soums* use traditional fire wood/coal/dung stoves for heating. Only 0.7% in Bayangol *soum* and 2.7% in Mandal *soum* use the central heating system. High use of coal/wood/dung may be due to the centralised system being a more expensive option, and also the number of households living in apartment areas with no access to the central heating system. For cooking, the majority of households responded that they use wood and charcoal. It is interesting to note that 68.6% of Bayangol surveyed households reported that they use dung. Dung is typically considered to be of lower preference compared to firewood or coal. The use of dung is also reflective of poverty and a lower social status. This may suggest a lower availability of household incomes in Bayangol to purchase wood or coal, or greater social acceptability there of using dung.

### 6.5.5 **Water Supply**

While at national level the percentage of freshwater resources withdrawn is very low (approximately 1.5%), in several regions potential over-exploitation of water resources, both groundwater and surface water, and inadequate water supply and sanitation services are major issues faced by Mongolia. The

main causes for these are rapid urbanisation, climate change and increased mining activity, along with immature policy and water resource management systems. A key challenge confronting Mongolia is that of the effective provision of water and sanitation services, especially in rural areas. Indeed, approximately two thirds of the Mongolian rural population lack access to water and sanitation. Moreover, the majority of wastewater treatment plants in *aimag* centres do not treat their throughput. At the same time, the high technical standards required by equipment that can operate in Mongolia's environmental extremes, the short construction season, and distance from international markets all make the construction and maintenance of infrastructure very expensive by global standards. For example, freezing temperatures complicate the extension of water networks, as water pipes need to be laid making special provision (depth, insulation) for the cold.<sup>98</sup>

#### 6.5.5.1 *Aimag and soum water supply*

Mongolian water resources are regularly tracked. From the 2012 water resource census (Table 6.24), out of 4,582 water resources registered in Selenge *aimag*, 3,188 (69.5%) are engineered deep wells and 376 (8.2%) are bore wells. In Mandal *soum*, consistent with the environmental landscape, river water resources dominate, while in Bayangol, deep and bore wells are the predominant water supplies. In Bayangol *soum*, of the 147 water resources registered, 56 are bore wells and 53 are engineered deep wells. In contrast, out of 182 water resources in Mandal *soum*, there are 23 bore wells, 15 springs and 127 rivers. According to the *aimag* statistical data, 32 springs were dried out at the *aimag* level. Explanations for these springs drying out include a mixture of human (deforestation, water use) and environmental factors (drought). In Tunkhel *bagh*, 16 small rivers and springs flow into the Tunkhel River which, in turn, merges with the Kharaa River. The maps provided in the following figures illustrate the key water sources in Mandal and Bayangol *soums*.

**Table 6.24 Water resource census results, 2014<sup>99</sup>**

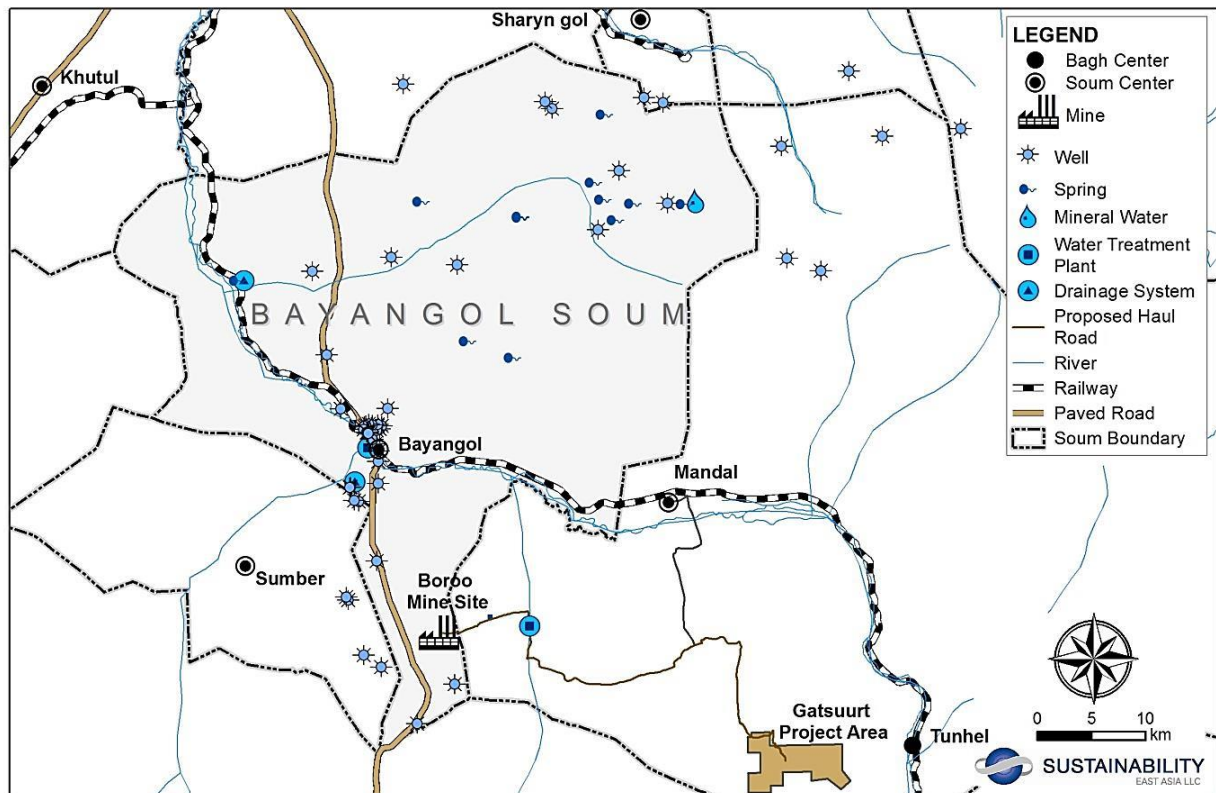
<i>Soum</i>	Bore well	Engineered deep well	Spring	Lakes, ponds	River	Sewage plant	Spring/spa	Piezometer	Well with short casing	Watering system	Total
Bayangol	56	53	12	-	10	2	1	-*	11	2	147
Mandal	23	-*	15	1	127	2	3	6	-*	5	182
<b><i>Aimag</i> total</b>	<b>376</b>	<b>3,188</b>	<b>198</b>	<b>40</b>	<b>589</b>	<b>8</b>	<b>18</b>	<b>6</b>	<b>127</b>	<b>32</b>	<b>4,582</b>

*No information available.*

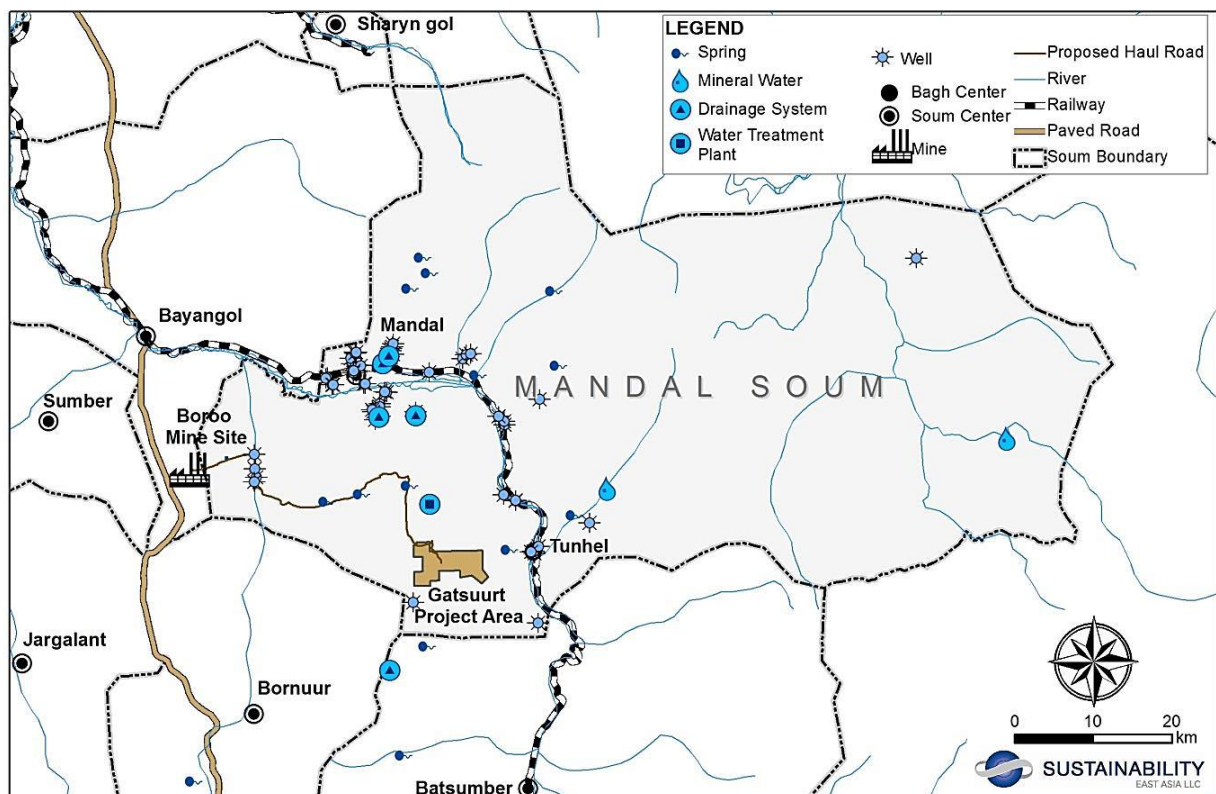
<sup>98</sup> UNDP. <http://www.mn.undp.org/content/mongolia/>.

<sup>99</sup> Source: Department of Environment and Tourism, Selenge Aimag Governors' Office.





**Figure 6.24** Water sources in Bayangol *soum*



**Figure 6.25** Water sources in Mandal *soum*

#### 6.5.5.2 Household Drinking Water Resources and Consumption

The main sources of drinking water in the Project area are protected (from contamination) and unprotected wells, rivers and springs, and mobile distribution points. Household drinking water supplies are quite similar between categories of users, with most households using protected wells as their major source. Protected wells are more common in Bayangol than Mandal *soum* centres, at 66% and 46%, respectively. Additionally Bayangol sources more water from unprotected wells (at a higher risk of contamination than protected wells) than Mandal *soum*, at 23% compared to 16%. Mandal *soum*, including Tunkhel and Kherkh *baghs*, source more water from rivers than Bayangol, consistent with availability from the natural environment. There was no significant difference between herder and settled households in terms of water supply mix. No households cited obtaining their water from snow/ice, or from a neighbour's source. There were also very few households in the Project area that access drinking water through the centralised system, highlighting the lack of centralised water infrastructure that is currently a key challenge across Mongolia.

**Table 6.25 Main source of drinking water, by study *soums* and *baghs* (%)**

		<i>Soum</i>		<i>Bagh</i>			Household	
		Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Non-herder
Centralised	Hot and cold water	0.0	0.8	0.8	0.8	0.0	0.8	0.4
	Cold water only	0.0	0.8	0.8	0.8	0.0	0.8	0.3
Well	Protected	65.9	46.4	48.8	42.9	64.9	53.8	52.8
	Unprotected	23.2	15.7	10.9	16.8	25.8	15.4	19.7
Mobile distribution points		5.1	13.3	14.0	13.4	5.3	10.7	10.4
Spring, river		5.8	23.0	24.7	25.3	4.0	18.5	16.4
Snow, ice		0.0	0.0	0.0	0.0	0.0	0.0	0.0

#### 6.5.6 **Sewage and Sanitation and Solid Waste Management**

The sewage and sanitation services in the Project area broadly consist of:

- Centralised sewage system, in *soum* centre apartment districts;
- Solid waste collection points, in *soum* and *bagh* ger districts;
- Bath houses in some *soum* and *bagh* centres; and
- Outdoor pit toilets constructed by households in ger districts and for herder households in rural areas.

Most homes surveyed in the Project area use pit toilets constructed by the householders. Households residing in gers only have access to outdoor toilets. According to the household survey, 96.6% of Bayangol *soum* households and 92.7% of Mandal *soum* households use outdoor toilets. The remainder, 3.7% in Bayangol *soum* and 3.5% in Mandal *soum* do not have any access to proper toilet sites. The majority of these are households live in ger districts or rural areas.

Solid waste management services are undertaken by public and private service providers, to remove and manage waste, maintain and operate street lighting and enhance urban environments through tree planting /green space enhancement measures. Within Selenge *aimag*, there are 3 service operators

running in urban areas and in total 5 solid waste disposal vehicles are used within the *aimag centre*. There is state service provider in Sukhbaatar *soum*, "Mandal network" LLC in Mandal *soum*, and the State service provider in Saikhan *soum*. The service providers dispose of waste to landfill sites. These are generally poorly managed, if at all.

Within Mandal *soum*, there are 4 central collection points for solid waste and one of these points is in the *soum* centre (a field of 21ha). In total, there are 9 solid waste disposal vehicles including, 7 in the urban landscaping office, 1 solid waste disposal vehicle in Tunkhel *bagh* and one in Kherkh *bagh*. 6 vehicles out of 9 were newly purchased in 2014, indicating that there are attempts underway to improve the system. According to the statistical bulletin of Mandal *soum*, a total of 30,751 tonnes of garbage was collected from 756 enterprises and 3,975 households and transported to an integrated garbage dump in 2014. 11ha of waste disposal work was conducted in 2014 (waste burial). 73.6% of total solid waste is household waste and 26.4% is industrial waste. 970 tonnes waste was accumulated in an unauthorised area of 262.4ha (i.e. dumped, but not an official waste collection point).

According to the household survey, over half of households, in particular those located in rural gers have a local Government specified collection point for garbage disposal. For those in areas outside the collection points, households tend to burn/bury their household solid waste.

### 6.5.7 Communication and Postal Services

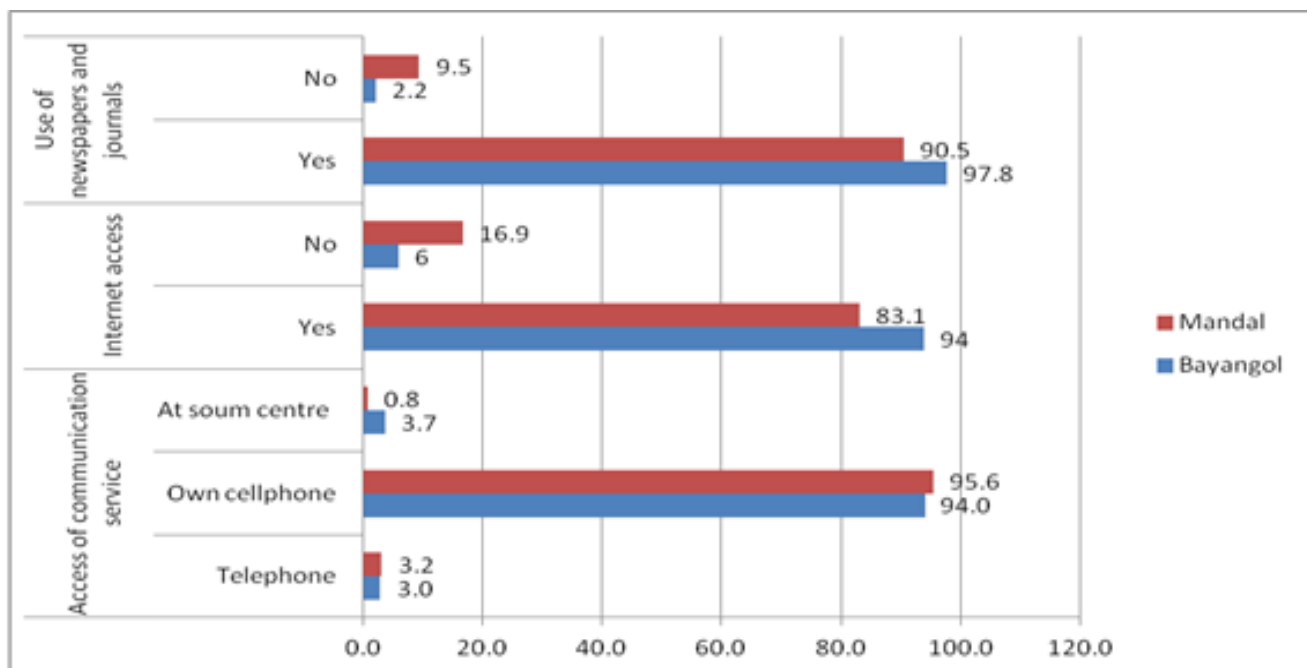
All *soums* in Selenge *aimag* have access to a cell phone network and internet through fibre optic cable. Multi-satellite channels are also available. Five cell phone operators including the national operator and Mobicom, Skytel, Unitel, G-Mobile, are available in the Project area. Cell phone service access depends on many factors including the network coverage capacity of cell phone operators in rural areas, local environment, geography, requirements and needs of citizens, and affordability.

Due to technology development there is less service demand for delivery of telegrams, post and documents; however there is still a demand for express post. Access to the communications technology sector is increasing every year. As Table 6.26 shows, daily use of cell phones, computers and internet is increased and people directly received information if necessary.

**Table 6.26 Communication and Postal Services, in Selenge *aimag*, by years**

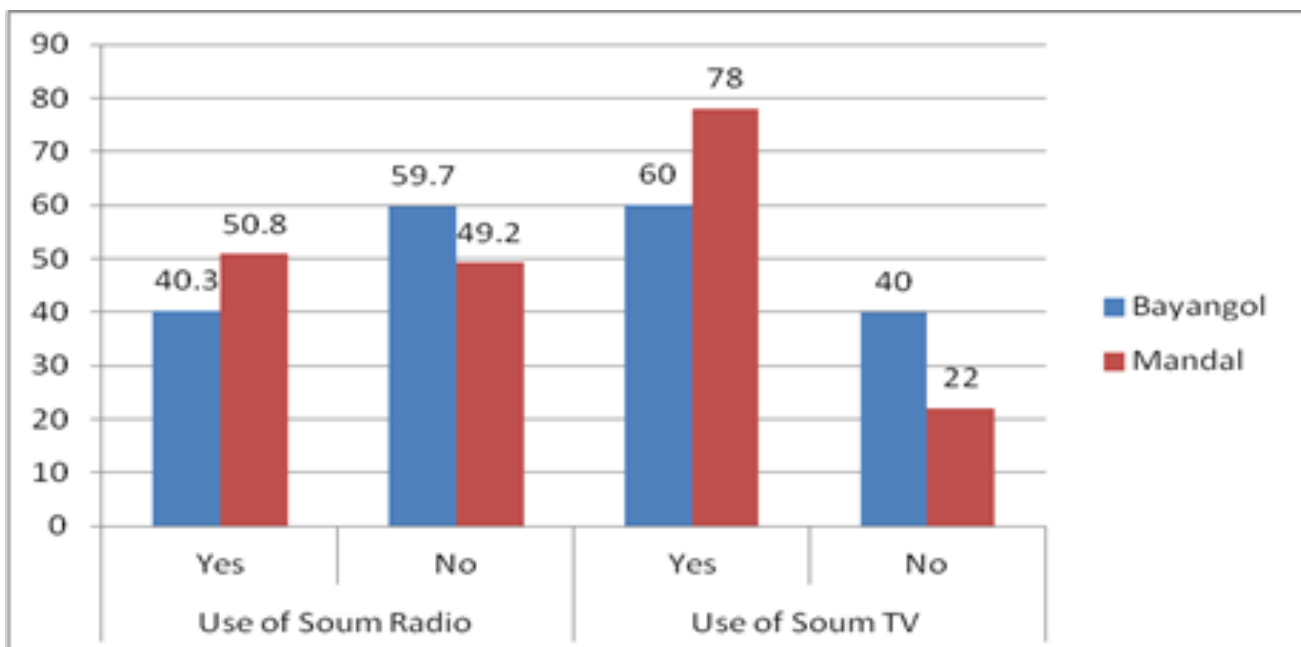
	2012	2013	2014
Branches of Post Office	8	5	7
Number of telephone lines (total)	1,674	1,491	1,505
Herein:			
Organizations	335	313	302
Entities	211	189	208
Families	1,128	989	995
Size of Telecommunication (million minutes)	221,1637	126,7947	665,095
Telegram	335	318	350
Number of <i>soums</i> connected to internet	2	4	5
Number of Internet service providers	2	4	5
Number of internet users	338	440	609

Furthermore, as Figure 6.26 shows, the number of cellular phone users is very high in comparison to the number to the number of people with fixed lines. In addition, Figure 6.26 also shows that nearly all respondents have access to the internet if they need it. Slightly fewer people have internet access in Mandal *soum*, and this may be attributed to the remote location of some of the *baghs* (i.e. Tunkhel).



**Figure 6.26 Access of communication and post services, 2015, by soums, percentage**

More people in both Mandal and Bayangol make use of TVs than radios in the Project area. This indicates that households in the Project area are primarily receiving information, news, and entertainment from TVs and has implications for the most effective means of communication with communities in the Project area.



**Figure 6.27 Access of TV and Radio, 2015, by soums, percentage**

## 6.5.8 Transport Infrastructure

### 6.5.8.1 Roads and Transportation

The road networks of Mongolia have been in development since 1929. The vertical axis of the Millennium Road passes through Selenge *aimag* (Ulaanbaatar to Russia). The total length of the improved road network was 9,428km, of which 340km of this road is in Selenge *aimag*. In addition to this portion of the Millennium Road, Selenge *aimag* has approximately 1,101.4km of national and local roads. A map of the key roads in the Project area roads is included is provided below. As these maps show, the proposed Gatsuurt Project is close to major transport infrastructure, including paved roads and railways, from both a Mandal and Bayangol *soum* perspective.

#### **Gatsuurt Haul Road**

*A gravel-surfaced 56km long, haul road has been constructed between Gatsuurt and the Boroo Mine Site. This is an 8m wide single lane road, with a passing lane strategically located along the route to allow traffic to pass safely. This road, to be used by the Project for ore haulage is a public road that was constructed by Boroo Gold Company for the Mandal soum government in 2010. The Road Commissioning Act<sup>100</sup> specifies that BGC is the road user and financier and the road possessor (owner) as Mandal Soum Governor's Office<sup>101</sup>, who has responsibility for ensuring the road's construction and timely maintenance. The Road Commissioning Act did not require the road to be paved, and as such it will remain an improved dirt road. The road currently has directional signs, but no speed signs.*

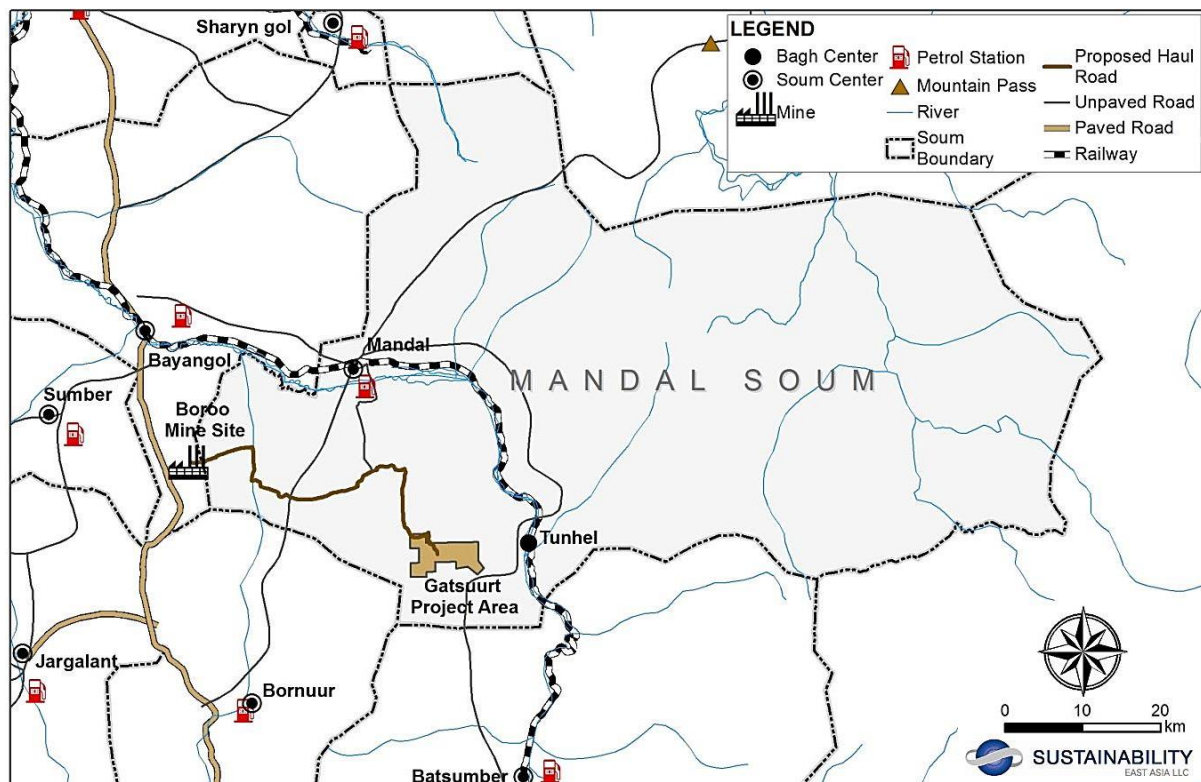
<sup>100</sup> Road Commissioning Act 03/66/2010, Gatsuurt LLC and Mandal Soum, 12 November 2010.

<sup>101</sup> Article 3.1.9 of Law on Road states that a local scale road is road within territory of city/ *aimag* which connects *soums*, districts and settlement areas.





**Figure 6.28 Project area road and rail infrastructure map, Bayangol *soum***



**Figure 6.29 Project area road and rail infrastructure map, Mandal *soum***



#### 6.5.8.2 Traffic and Vehicle Ownership

In 1998, the number of registered vehicles in Mongolia was 36,700, of which 23,800 were private cars. By 2008, this had increased to 105,000 registered vehicles (nearly tripled) and 78,500 private cars. This rapid increase was largely due to the growing economy which stimulated private car ownership, especially in light of poor public transport systems in the country. Table 6.27 shows the number of vehicles in the *aimag* and *soums* as stated in the government census of 2014. In recent years, the number of vehicles has increased rapidly in Selenge *aimag*. According to the vehicle inspection statistical data 2014, there were 7,090 vehicles registered in 2014 within the *aimag*.<sup>102</sup> This number increased by 340 vehicles compared to 2013. Mandal *soums* takes 2nd place after Sukhbaatar *soum* (*aimag* centre) in terms of the number of vehicles, and Bayangol *soum* places 5<sup>th</sup> in the *aimag*.

A number of road programs have recently been completed in Mandal *soum*, as follows:

- A road to Kherkh *bagh* - 167.8 million MNT in 2011;
- Underground Railway Tunnel – 800.0 million MNT in 2011; and
- Road between Kherkh *bagh* and downhill of Tunkhel Mountain - 480 million MNT in 2013.

**Table 6.27 Number of vehicles covered by technical inspection<sup>103</sup>**

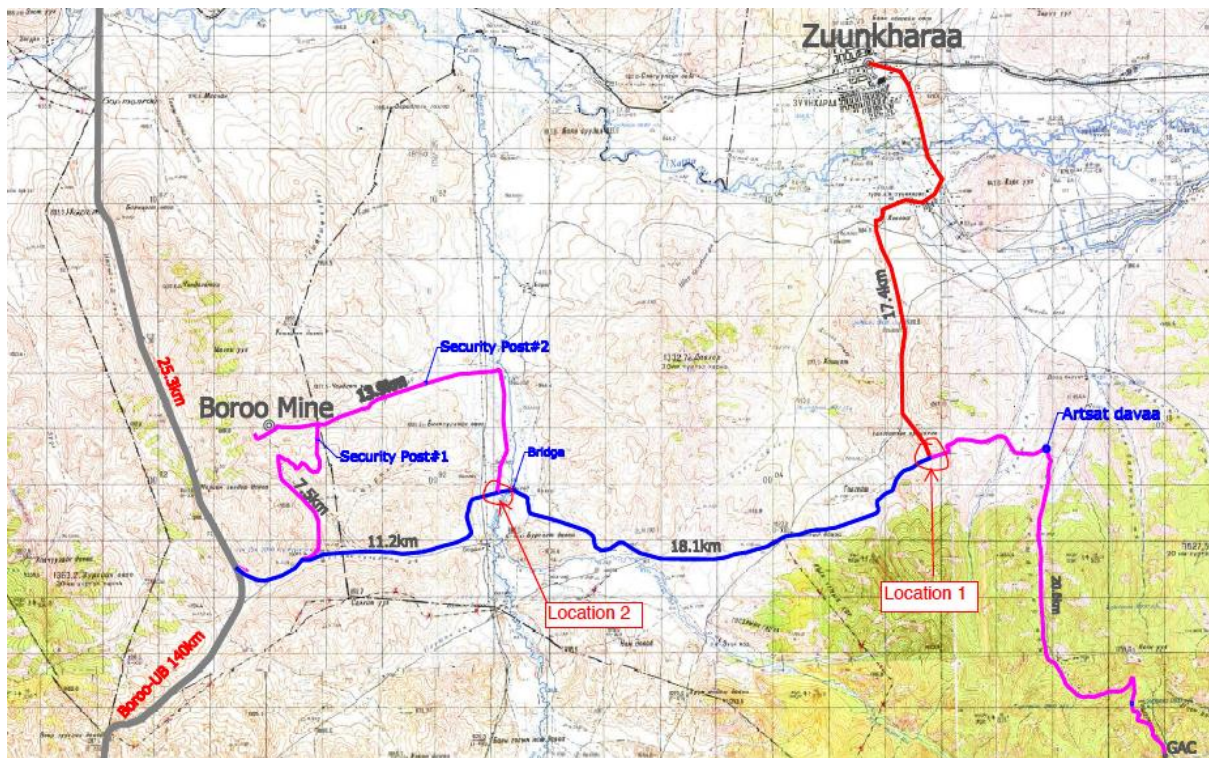
<i>Aimag, soums</i>	2012	2013	2014	Types of vehicle					
				Passenger cars	Trucks	Buses	Special purposes	Motorcycles	Trackers
State	345,473	384,864	437,677	303,724	96,581	20,650	16,722	-	-
Central region	39,757	44,509	47,811	27,750	13,270	2,549	4,242	-	-
Selenge	6,677	6,750	7,090	3,682	2,928	318	162	-	-
Mandal	-	-	2,724	1,265	1,154	-	-	264	41
Bayangol	-	-	688	319	315	-	-	51	3

With respect to traffic trends in the Project area, traffic was surveyed at two locations along the Gatsuurt haul road as follows (see also Figure 6.30):

- Location 1: At the intersection of the Zuunkharaa turnoff (i.e. 29.3km from the UB road);
- Location 2: At the intersection near the bridge to the west of the Boroo River (i.e. 11.2km from the UB road).

<sup>102</sup> Selenge aimag socio-economic statistic bulletin, 2014.

<sup>103</sup> Mongolian statistical yearbook, 2014.



**Figure 6.30 Traffic Survey Locations**

The data gathered indicates that, in line with the vehicle ownership statistics discussed above, the majority of traffic along the Gatsuurt haul road is light vehicular traffic followed by mini trucks. Location 2 at the intersection near the bridge to the west of the Boroo River experienced the most traffic. This is likely due to the fact that this is the route to Ulaanbaatar and counts vehicles from Boroo and to the north, as well as from Gatsuurt or Zuunkharaa.



**Figure 6.31 Traffic Count along the Gatsuurt Haul Road**

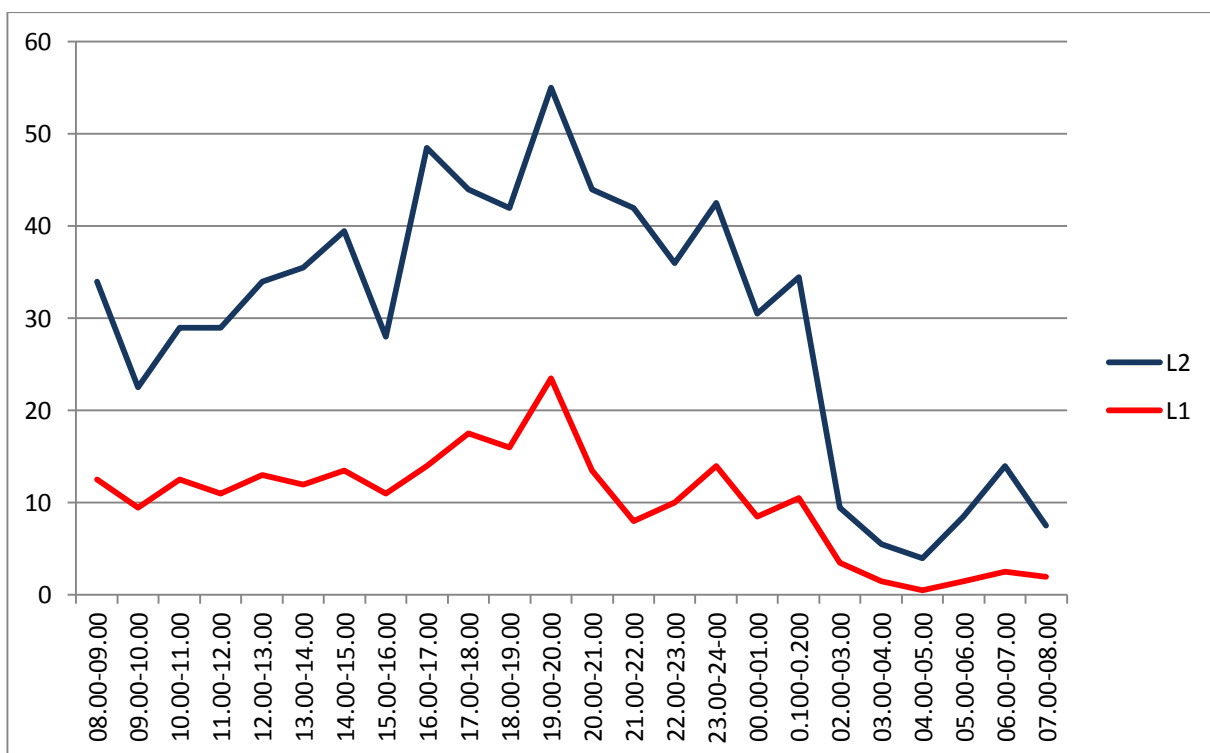
The following table shows the average traffic movements at both locations (where ZX indicates Zuunkharaa and UB indicates to/from the direction of the paved Ulaanbaatar road to the west of

Location 2). Most travel was during the day from the direction of Ulaanbaatar road towards Zuunkharaa, next most was the reverse direction and at night. A slightly lower number of vehicles travelled this route in reverse, at opposite times of day. What can reasonably be assumed is that commuters travelling the Zuunkharaa / UB paved road make up the bulk of traffic on this route.

**Table 6.28 Direction of travel by day and night**

	From ZX towards UB	From ZX towards Gatsuurt	From Gatsuurt to ZX	From Gatsuurt towards UB	From UB towards ZX	From UB towards Gatsuurt
<b>Day</b>	44	4	2	13	70	19
<b>Night</b>	24	2	2	6	55	5
<b>Average per 24hrs</b>	<b>34</b>	<b>3</b>	<b>2</b>	<b>9</b>	<b>63</b>	<b>12</b>

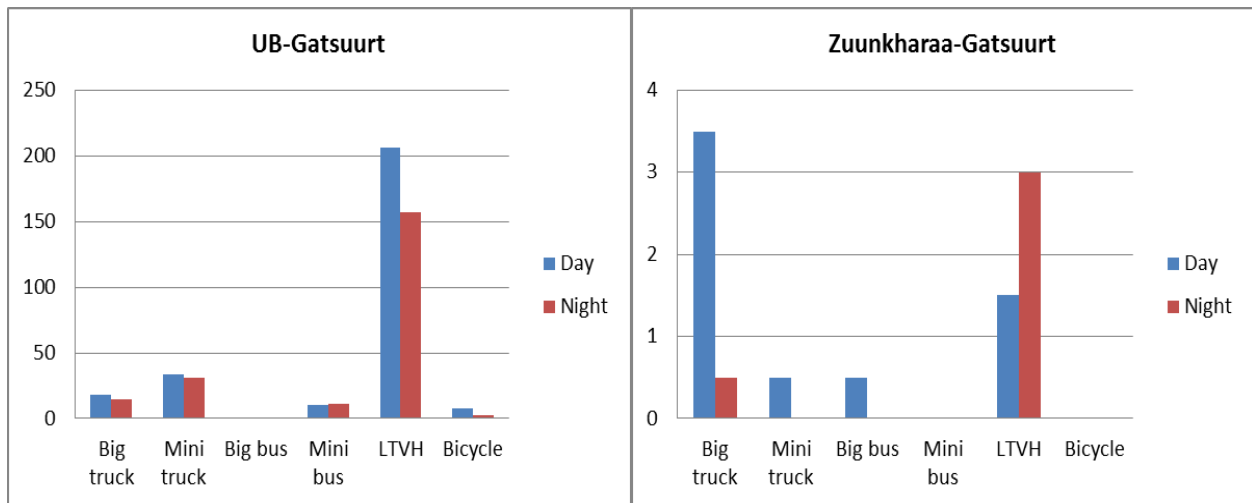
The following chart shows the time of day of travel, with Location 1 and Location 2 average vehicle count in both directions over both days surveyed. This chart shows that the peak travel times for all vehicle types on the public road is between 2pm and 11pm, with a peak at 7pm of 32 and 24 vehicles passing in both directions at locations 2 (the Zuunkharaa junction) and 1 (the Boroo junction) respectively.



**Figure 6.32 Average traffic count by time of travel, at each location**

Most travel is conducted during the day, tending to be busiest from 2pm to 11pm. Larger trucks and buses tend to travel from 9-10am. It is interesting to note that there are more night time light vehicles heading into Gatsuurt, although this is only a small percent of overall traffic. Furthermore, the Figure 6.33 shows that there are also a number of trucks travelling into the Gatsuurt mine site area at

night. This is particularly so, for big trucks from Zhuunkharaa, and mini trucks travelling from Ulaanbaatar. This may be due to workers travelling home after the day's work, or possibly people travelling into the area to the area for illicit forestry purposes or mining activity.



**Figure 6.33 Traffic heading into Gatsuurt mine site area**

#### **Gatsuurt Haul Road Ownership and Maintenance**

The Gatsuurt Haul Road is a public road, commissioned by agreement between Boroo Gold Company and Mandal *soum* and completed in 2010. The 55km road and 1 bridge were constructed by 5 different construction companies, financed by Boroo Gold Company. In accordance with the Law on Roads (Article 14.1), the owner of a local road (i.e. the Gatsuurt haul road) is the *aimag* Governor, which in this case is the Selenge *aimag* authority.

With respect to the maintenance and operation of the road, the responsibility for this lies with the owner of the road (Selenge *aimag* authority). Article 14.2.3 of the Law on Roads also stipulates that the road owner shall oversee the technical quality and provide financing for the construction, maintenance and operation of the road and furthermore, that the national inspection agency, *soum/aimag* governors are responsible for the enforcement of legislation regarding the construction, maintenance and use of the road.

In terms of road safety, Article 17 of the Law on Roads refers to a number of safety responsibilities for both the road users and road owners.

#### **6.5.8.3 Rail Transport**

Rail transport in Mongolia is an important means of travel in the landlocked nation with few paved roads. The railway (Trans-Siberian) that connects Mongolia's northern (Russian) and southern (People's Republic of China) neighbors is the key development axis, which also passes through Selenge *aimag* territory at distance for 345km (out of 1,810km). The railways are connected to Nayushki in Russia and Erlian city in China. The Ulaanbaatar Railway also known traditionally as Trans-Mongolian Railway passes through Tunkhel *bagh* of Mandal *soum* and connects to the main Selenge station. Sukhbaatar *soum* is a key railway hub in Mongolia. Selenge railway transportation is managed by the national operator of Ulaanbaatar Railway. Table 6.29 shows some of the key freight carried, turnover thereof, and passenger numbers carried in 2014.

**Table 6.29 Main indicators of railway transport, by *aimag*, 2014<sup>104</sup>**

	2014
<b>Carried freight (thousands, \$)</b>	
Sukhbaatar border point	83,267,300
Altanbulag border point	130,862,700
<b>Freight turnover (thousands, \$)</b>	
Sukhbaatar border point	832,67,300
Altanbulag border point	130,862,700
<b>Passenger carried</b>	
Domestic passengers	349,734
Foreign passengers	106,406

#### 6.5.8.4 Public Transport

Public transport services are divided into 3 categories for the purposes this Study:

- Inter-city transport;
- Inter-*soums*/*baghs* centre and population settlement area transport; and
- Intra-city transport.

Selenge *aimag* predominantly uses vehicle and railway for public transport, with rail transport the most popular form of transport. Railway transport provides passenger transport between Ulaanbaatar city and Selenge *aimag* by passing through the *soums* centers of Bayangol and Mandal as well as Tunkhel *bagh*. In addition, there is a train that leaves every day at 10.50am from Ulaanbaatar to Sukhbaatar *soum* (*aimag* center) of Selenge and back from Sukhbaatar *soum* of Selenge to Ulaanbaatar at 21.00. Other inter-city transports have different departure/arrival times.

**Table 6.30 Ticket price of passengers' railway, MNT**

Ticket price	Adult, person			Children, person		
	Public	Sleeping wagon	Sleeping compartments	Public	Sleeping wagon	Sleeping compartments
Train from Selenge <i>aimag</i> center to UB	7,000	13,000	38,500	2,000	7,200	18,100
Train from Zuunkharaa to UB	4,200	8,200	22,700	1,300	4,700	12,100
Train from Baruunkharaa to UB	4,700	9,700	28,500	1,400	6,200	15,400
Train from Tunkhel <i>bagh</i> to UB	3,200	6,900	20,300	900	4,600	10,800
Train from Baruunkharaa to Zuunkharaa	1,300	1,400	2,600	400	400	700

Road transport provides public transport services between nearby *aimag* and *soums* centers and the border point. Since November 2013, a large-scale bus service between Ulaanbaatar city and Selenge *aimag* center was added to the *aimag* public transport system based on local citizens' requests and

<sup>104</sup> Aimag statistic bulletin, 2014.



needs. Currently two buses serve this route every day.<sup>105</sup> Between Zuunkharaa (Mandal *soum*) and Ulaanbaatar, public transport service providers have encountered some difficulties due to train ticket prices and an increase in illegal transport (ticket theft, stowaways, smuggling)<sup>106</sup>.

There are also individuals who provide micro-bus and taxi services within Mandal and Bayangol *soums*, and to and from Ulaanbaatar. During the day, a taxi fare within Mandal and Bayangol is approximately 500-1000 MNT per journey and during the evening / night, the price rises to 1,000 MNT.

**Table 6.31 Fees for public transportation between *soums*, Selenge *aimag* centre, and Ulaanbaatar**

	Vehicle fee (MNT)
Ticket fee from/to Sukhbaatar <i>soum</i> ( <i>aimag</i> center) to Ulaanbaatar (Large bus)	12,000
Ticket fee from/to Sukhbaatar <i>soum</i> ( <i>aimag</i> center) to Ulaanbaatar (Micro bus)	7,000
Ticket fee from/to Kherkh <i>bagh</i> within Mandal <i>soum</i>	1,000
Ticket fee from/to Tunkhel <i>bagh</i> within Mandal <i>soum</i>	7,000
Ticket fee from/to UB to Zuunkharaa (taxi)	15,000
Ticket fee from/to UB – Bayangol <i>soum</i> (taxi)	10,000 – 15,000
Ticket fee from/to Tunkhel <i>bagh</i> (taxi)	No taxi, only train

### 6.5.9 Conclusion

Several key themes are noted in relation to social infrastructure in the Project area. Kindergarten facilities are stretched to capacity in both Mandal and Bayangol where the kindergarten attendance rate is around 87% of the population, with the remaining 13% of children being turned away due to the facilities being at capacity. In academic year 2014-2015, the transition rate from secondary school (grade 9) to high school (grade 10) declined. The female student transition rate is higher than the male rate. Transition rates are an influential indicator for gender disparity in further education acquisition and employment opportunities later on in life. As more females are enrolled in secondary education, they will be more likely to obtain further education (tertiary and vocational) in the future and may have better job prospects and earning potential. In relation to tertiary and vocational education, there are limited opportunities in the Project area and the facilities that do exist provide training for a predominantly male student population in traditionally male professions. At the *aimag* level, there is only one vocational training centre, which operates out of Mandal *soum*. This TVET has a particular focus on the construction sector, and these occupations tend to be male-dominated professions.

The main sources of drinking water in the Project area are wells, rivers and springs, and mobile distribution points. Bayangol sources more water from unprotected wells (at a higher risk of contamination than protected wells) than Mandal *soum*. The majority of households residing in *soum* centres consume energy from the central energy system, while 21.5% of surveyed households in Mandal *soum* and 39.9% of surveyed households in Bayangol *soum* use renewable energy. Solar systems are prevalent across all surveyed areas, in particular, for herders and those in Bayangol. Tunkhel was the exception at the *bagh* level with a greater reliance on the local diesel system compared to other *baghs*. 19.5% of surveyed households in Mandal *soum* also reported that their household energy resource is based on the local diesel system, which only works in the winter months between October and April. Heat supply is an essential basic service in Mongolia, but it is not accessible to

<sup>105</sup> Report of Auto road and transportation Department in Selenge *aimag*.

<sup>106</sup> Report of Auto road and transportation Department in Selenge *aimag*.



everyone, in particular, people in rural areas. The current heating system in *soums* mainly consists of (i) small stoves; and (ii) centralised and decentralised coal fired boilers. The majority of heating in households is independent of the centralised grid.

Households in the Project area primarily receive information, news, and entertainment from TVs rather than radios. This has implications for the most effective means of communication with communities in the Project area. Vehicles and the railway are the most common forms of public transport, with rail transport the most popular. Railway transport provides passenger transport between Ulaanbaatar city and Selenge *aimag* by passing through the *soums* centers of Bayangol and Mandal as well as Tunkhel *bagh*.

## 6.6 LAND USE AND NATURAL RESOURCES

### 6.6.1 Introduction

This Section presents discusses land use, land ownership and possession, and the use of natural resources in the Project area. The description is situated at the *aimag* level and homes in on the key issues experienced in Mandal and Bayangol *soums*, and Tunkhel *bagh* in particular.

### 6.6.2 Reference Data

The Section was developed based on analyses of available data at four levels (*aimag*, *soum*, *bagh* and household). Specifically the data was obtained from Selenge *aimag's* state and commercial organisations; Mandal and Bayangol *soums'* state organisations; Tunkhel and Kherkh *baghs'* state organisations; KII with different organisations' representatives; FGD with different group of community and Households' survey data.

The survey at *aimag* level was conducted based on analyses of the following documents:

- Mongolian national statistical data for 2014;
- Land Fund report for 2013;
- Selenge *aimag's* Yearbook for 2014 compilations.

Local (at *soum* and *bagh* levels) information was compiled mainly through reference to the Selenge *aimag* Yearbook and reports accessed from relevant state organisations.

KII and FGD notes of different agencies and groups' representative were used to identify issues related to Land use and Natural resources at *aimag*, *soum*, *bagh* levels.

Household survey data was processed using SPSS software for analysis, and subsequent information presentation.

### 6.6.3 Land Uses

#### 6.6.3.1 Land Use and Designation

Land in Mongolia has been used collectively by herders under both traditional and communist regimes and Mongolian culture is also heavily influenced by the "nomadic way of life". Land is therefore an important issue from both a socio-cultural and environmental perspective. Herding and Mongolians' use of land has undergone a number of key changes in recent history, summarised below.<sup>107</sup>

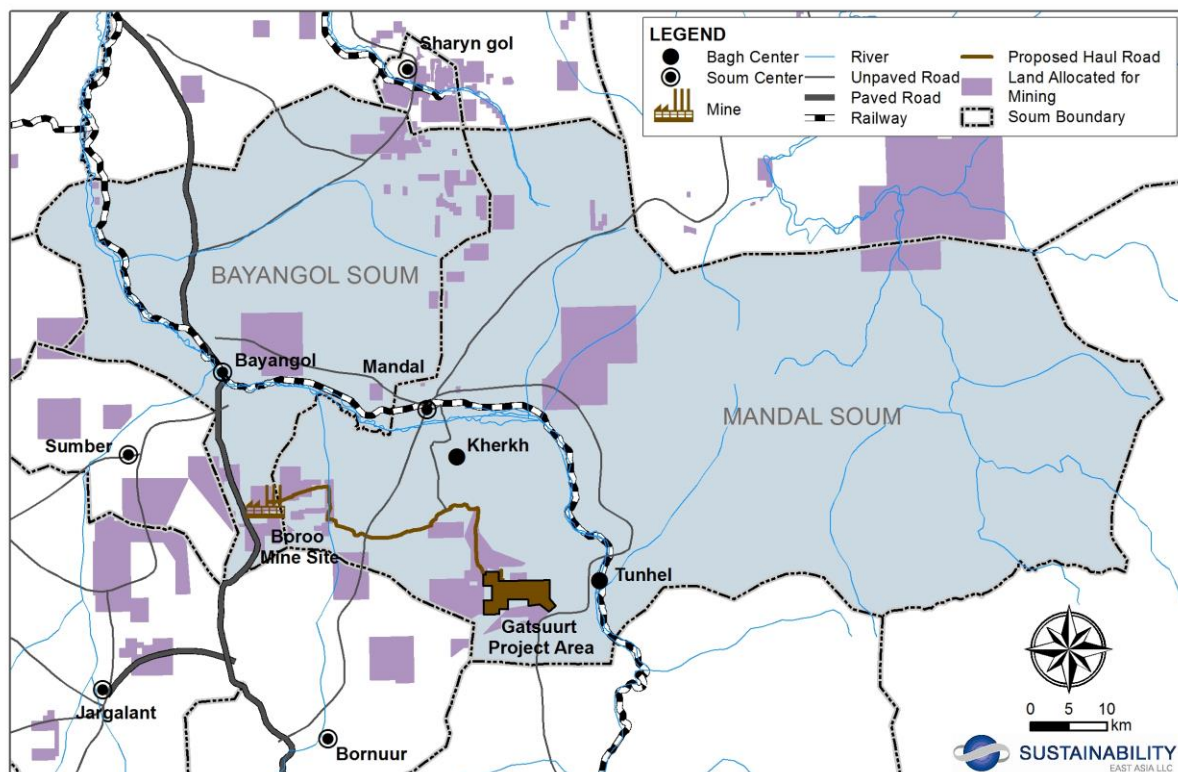
Mongolia is a country with a unique trajectory and scale of rural livelihood transformations over the last 80 years. Until the late 1950s and into the subsequent *negdel* era (era of collectivised agriculture), rural people relied primarily upon extensive herding for their livelihoods. The collectivisation movement, which achieved full dominance by the late 1950s to early 1960s, survived over 30 years with a full dismantling of *negdel* in the 1990s under a nationwide shift to market-driven economic relations. Under this transformation, the cooperative/collectivisation movement, or socialist command economy, gave up its existence to private ownership based, market-oriented economic development."

Key to the shift from a collective to a market-driven system was the implementation of laws that regulated tenure, allocation, expropriation and transactions associated with land and other immoveable assets. The main provisions on land ownership and use are housed in The Constitution (1992); The

<sup>107</sup> Upton, C., et al. 2013. Community, Place and Pastoralism: Nature and Society in Post-Soviet Central Asia. Mongolia Country Report. Leverhulme Trust Research Project Grant F/00 212/AI, 2010 – 2012.

Law on Land (2002); The Law on Allocation of Land to Mongolian Citizens for Ownership (2003); and The Civil Code (2002) and are discussed in Section 3 of this Report. The Mongolian Law on Land<sup>108</sup> classifies the following types of land use: agricultural land; land for urban settlements; land for roads and infrastructure; land with forest and water resources; and land for special needs.

Selenge *aimag's* total land size is over 4 million hectares, which is 2.6% of Mongolia's land. Mandal *soum* constitutes 12% (484,373ha) of Selenge *aimag's* total land, while Bayangol *soum* accounts for only 4.8% (197,628 ha). Selenge *aimag* is one of Mongolia's agriculture-focused *aimags*. Specifically, half of the *aimag's* land is agricultural land; a third is forest (37.3%); 10.2% is State land for special needs; while the remaining land is allocated for urban development, roads, energy and communications and other infrastructure, as well as water reservoirs. At the *soum* level the dominant land use category in Mandal is forest (approximately two thirds), compared to more than 80% in Bayangol for agriculture. Only 13% of Bayangol *soum's* total land area is covered by forest, which far less than Mandal *soum*. Figure 6.34 shows the land allocated for mining (mining/exploration licences) in the Gatsuurt Project area.



**Figure 6.34 Land Allocated for Mining in the Gatsuurt Project area**

#### 6.6.3.2 Protected Areas

The protected areas of Mongolia have been significantly expanded over the last 2 decades, totalling almost 18% of the country's surface. There are a number of protected area designations, including internationally sanctioned protected areas, State protected areas, local protected areas, important bird areas, and proposed protected areas. However, the increase in protected areas has not been matched by a growth in capacity and resources to manage conservation of species and habitats in these areas.

<sup>108</sup> <http://www.legalinfo.mn/law/details/216?lawid=216>.

With the passing in 2009 of the Law on the Prohibition of Minerals Exploration in Water Basins and Forested Areas (the “Long Named Law”), the Government of Mongolia cancelled over 200 mining and exploration licences that operate within 200m from water and forest resources. The current review of this law indicates that some protected areas may be declassified for the purposes of mining, which is what occurred when approval was granted for the Gatsuurt mine to continue development as a strategic deposit.

State special needs land is defined in the box below. This land type covers approximately 10% of the total land of Selenge *aimag*, within which there are a number of registered State protected sites and about 50 local special protected areas<sup>109</sup>.

- The State land for special needs was legalised by the Mongolian Law on Land (2002) and includes:
- Special protected areas;
  - Border areas;
  - Land allocated for national defence and security;
  - Land for foreign diplomatic missions and consulates, as well as the representative offices of international organisations; scientific and technological experiment, environmental and climatic observation areas;
  - Inter-class grazing pastures;
  - Pastureland reserved for emergency use (in case of natural disasters, e.g. *dzud*);
  - Land for oil exploration;
  - Free Zones; and
  - Land for construction of nuclear facilities.

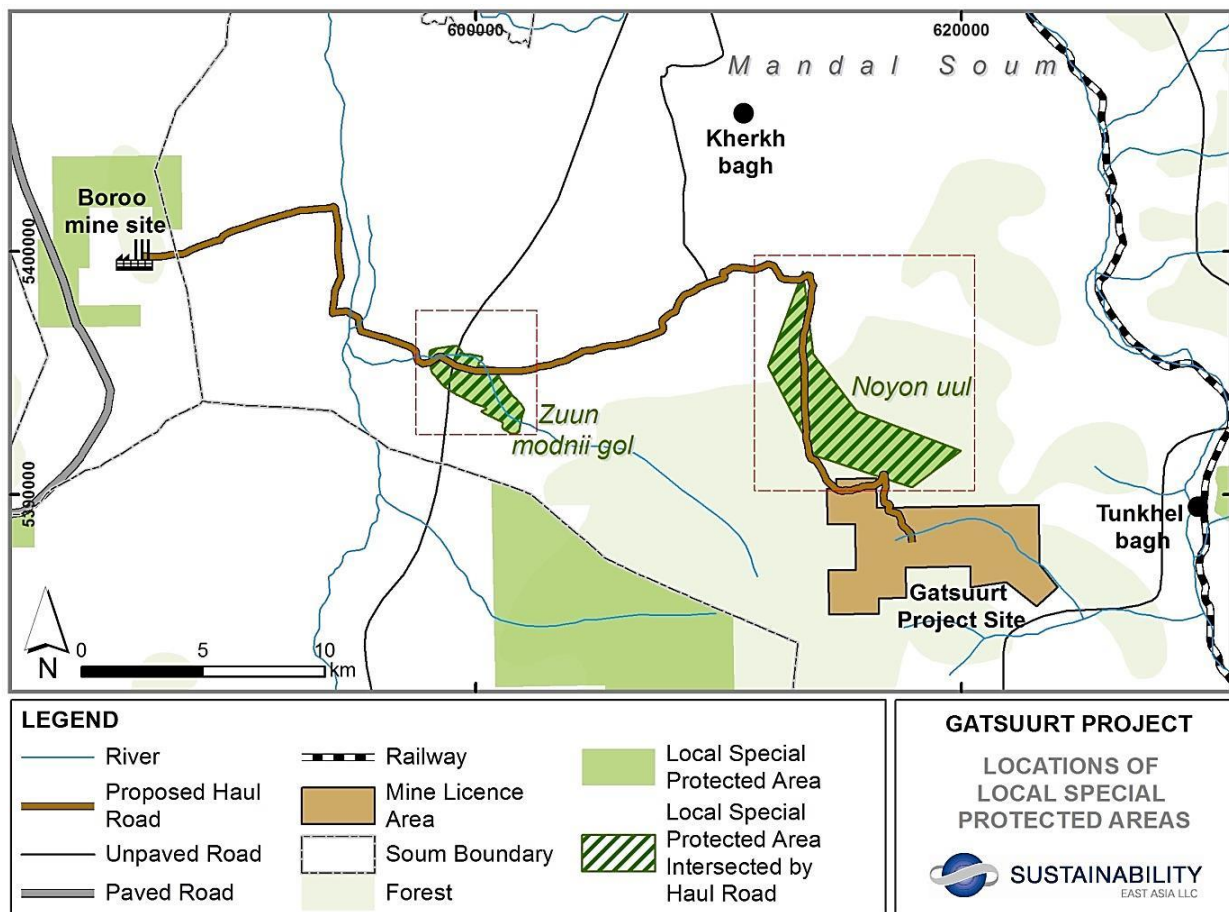
Two local protected areas are located in the Project area to the north and north-west of the licence area, in Mandal *soum*. Both of these areas intersect with the Gatsuurt Project’s haul road (see Table 6.32 and Figure 6.35). Both protected areas fall under the jurisdiction of the *aimag*, meaning that the *aimag* has the authority to designate responsibility to manage the areas.

**Table 6.32 Two Local protected areas, intersected with Gatsuurt project’s Haul road<sup>110</sup>**

Place name	<i>Soum</i>	Protection level	Protection justification	Area, ha
Zuun Modnii gol	Mandal	<i>aimag</i> level	Natural scenic area	647,700
Noyon Uul	Mandal	<i>aimag</i> level	Cultural heritage (graves), rare plants	2,052,400

<sup>109</sup> <http://www.legalinfo.mn/law/details/216>.

<sup>110</sup> List of Local special protected areas of Selenge *aimag*, 2007.



**Figure 6.35 Two Local protected areas in the Project Area**

### 6.6.3.3 Agriculture and Pastureland

The use of pastureland for the grazing of livestock varies across Mongolia from nomadic herding in the desert to transhumance<sup>111</sup> systems in the more fertile forest steppe. The Gatsuurt Project area can be characterised as forest steppe.<sup>112</sup> Under the Mongolian Constitution and Law on Land, pastureland is classified as common use land and cannot be privately owned.<sup>113</sup> However, the law provides for the protection of winter pastureland (and associated winter shelters) to ensure that it is not grazed out of season (thereby ensuring livestock survival during this difficult time of year). Summer and autumn pastures are not afforded the same protection and so are considered available for open access.

<sup>111</sup> Transhumance is the seasonal movement of people with their livestock between fixed summer and winter pastures.

<sup>112</sup> Jamsranjav, C. 2009. Sustainable Rangeland Management in Mongolia: The Role of Herder Community Institutions.

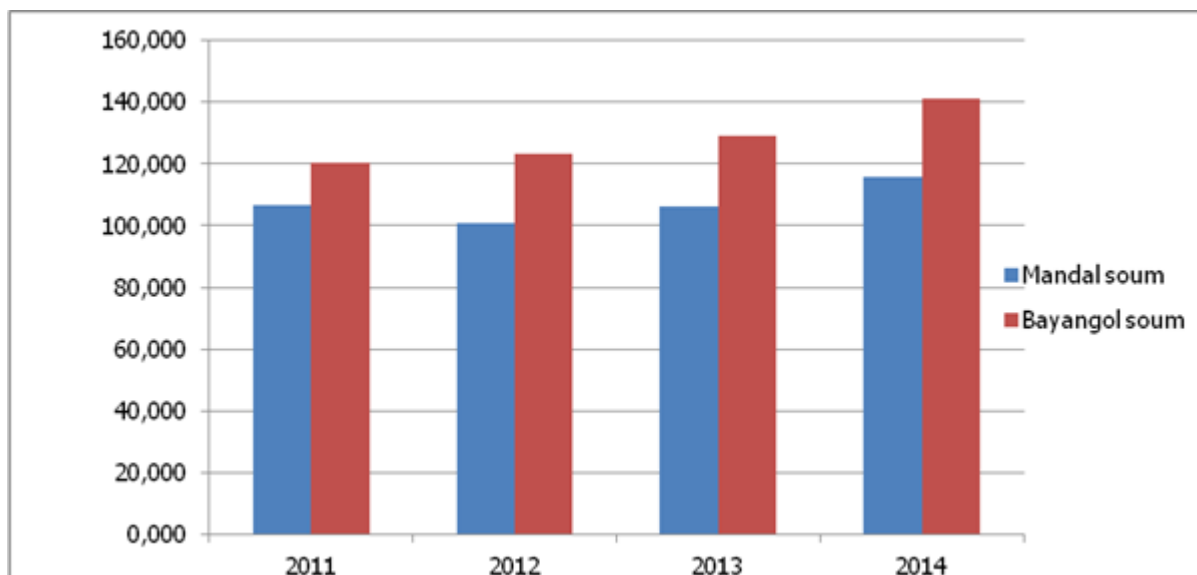
<sup>113</sup> <http://www.legalinfo.mn/law/details/216>.

According to the Mongolian Law on Land, common use land is defined as:

- Pastureland, with water resources;
- Urban areas;
- Land for roads, communications and other infrastructure;
- Forested areas; and
- Land for water reservoir.

The Mongolian legal system allows for various types of land rights depending on the purpose the land will be used for, i.e. herding, SME, crop farming, forestry, and ASM.<sup>114</sup> Herders can only use the pastureland, they cannot possess or own it (they can only own land for household production purposes). *Soum* Governors have the power to grant land use possession certificates to herders for winter shelters, not for the associated pasture areas. Agriculture and SME groups can own, use and possess land, provided that they pay the appropriate fees and taxes.

The biggest portion of Selenge *aimag* agricultural land is used for pastureland (79% of total agriculture land), for cropping (15% of total agriculture land) and for hay fields (6% of total agriculture land). One of key issues in Selenge *aimag* related to agriculture land use is overgrazing. There are a number of contributing factors to this issue. The primary reason is that existing herders and livestock owners have generally increased the number of animals they own (an approximate increase of 14 percent between 2011 and 2014 (see Figure 6.36 for Mandal and Bayangol *soum* livestock numbers). In 2013 in Mandal *soum* (2014 data not available, although anecdotal data gathered from the Boroo Gold Company Community Relations Officer in Mandal *soum* indicates that the number of livestock in Mandal *soum* increased by approximately 9% in 2014) the number of livestock increased by 5%. In 2014 the number of livestock in Bayangol *soum* increased by 9%. In addition, in the KII with the Selenge *aimag* CRK Advisor, he indicated that there has been a decrease in the area of land designated for herding due to the allocation of land for mining development (both for mining companies and ASMs) and for crop farming. This has decreased pasture availability for herders and so caused increased competition for available, suitable grazing lands.



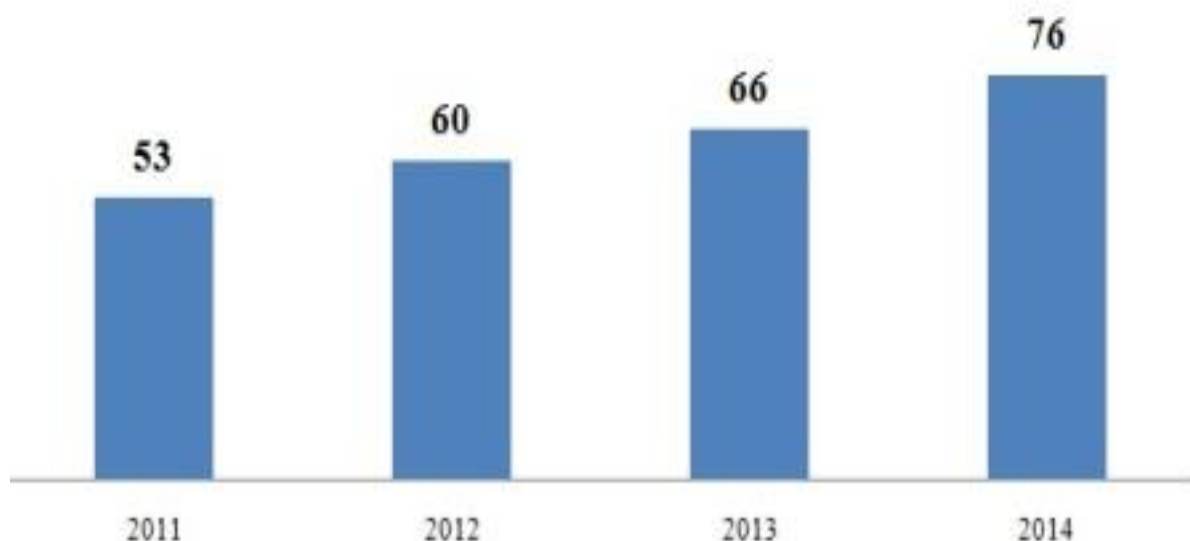
**Figure 6.36** Number of livestock, by *aimag* and *soums*, 2011 – 2014<sup>115</sup>

<sup>114</sup> <http://www.legalinfo.mn/law/details/216?lawid=216>.

<sup>115</sup> Selenge Yearbook, 2014, page 369; Socio – Economical Statistical data of Mandal *soum*, 2014, page 55, Table 28; Socio – Economical Key Parameters, 2014.



According to a study completed by the Ministry of Agriculture and Industry, the number of livestock expressed in heads of sheep<sup>116</sup> per 100ha of pastureland area was 146 sheep units in Selenge *aimag* in 2014.<sup>117</sup> This is double the national average (which is increasing steadily every year, see Figure 6.37), indicating high stocking rates, increased pressure on available pastureland and potential for localised competition for available natural resources.



**Figure 6.37 Sheep units per 100 ha of pastureland area, national average, 2014<sup>118</sup>**

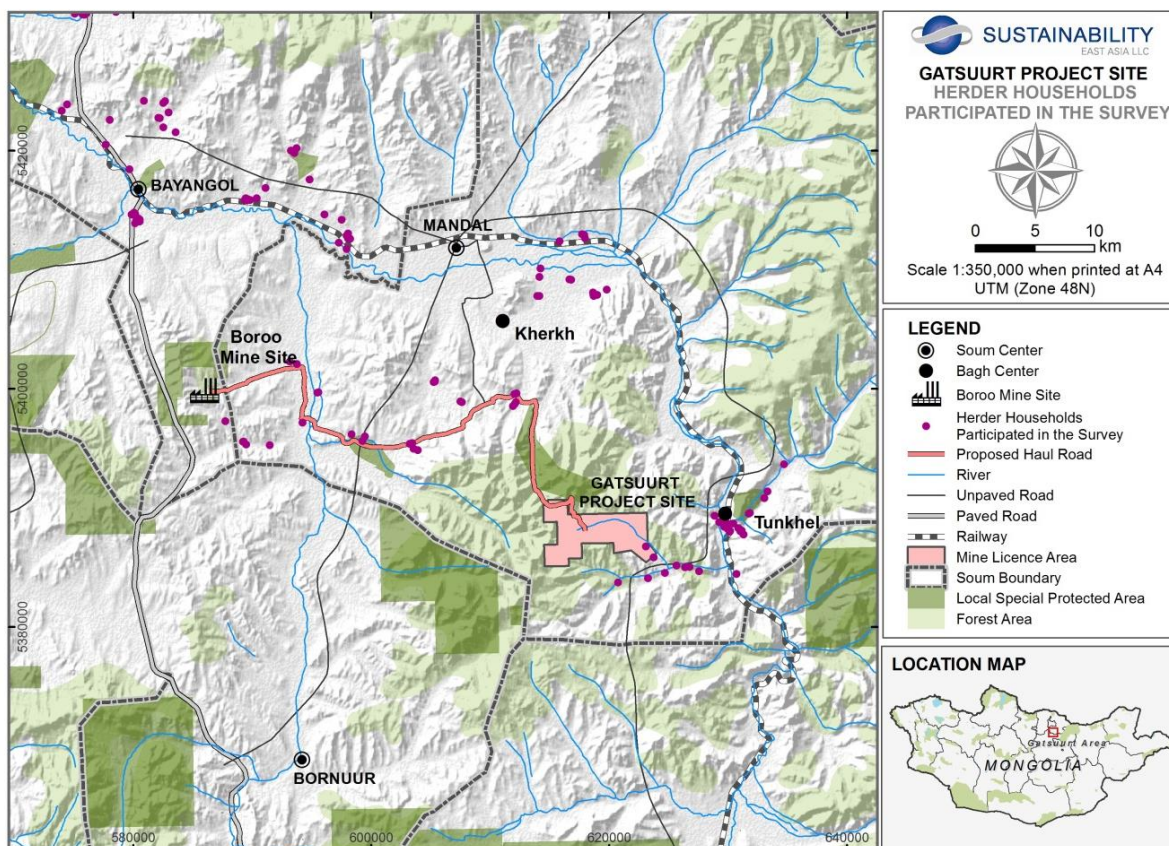
According to the Selenge Yearbook for 2014, despite an increasing trend in livestock numbers at both the national and *aimag* level, since 2011 in Selenge *aimag* the total number of herders (i.e. existing herder households and migrant herders) has in fact decreased (see Table 6.33). This is despite the perception among many herders, voiced in FGDs, that migrant herders are increasing and that they are to blame for degraded and overgrazed pastureland (mentioned in Section 4.1 Demography).

Figure 6.38 illustrates the location of herder households in the Project area that participated in the household survey, showing the mixture of proximity to infrastructure, population centres and more remote locations.

<sup>116</sup> Heads of sheep equivalent factors, or sheep units, are used to indicate grazing land livestock carrying capacity. Heads of sheep conversion factors are: 1 camel to 5 sheep units; 1 horse to 7 sheep units; 1 cow to 6 sheep units; 1 sheep to 1 sheep unit; and 1 goat to 0.9 sheep units (e.g. 1 camel + 10 goats + 1 cow = 5 + 9 + 6 = 20 sheep units).

<sup>117</sup> Household census for 2009, page 1.

<sup>118</sup> [http://www.mofa.gov.mn/new/index.php?option=com\\_content&view=article&id=114&Itemid=207](http://www.mofa.gov.mn/new/index.php?option=com_content&view=article&id=114&Itemid=207).



**Figure 6.38 Herder households in the Project area that participated in the household survey**

The reduction in herder numbers may be due to local Government efforts to reduce in-migration of herders and thus the impacts of overgrazing in Mandal and Bayangol *soums*. The key Government strategy to achieve this has been the imposition of fees for livestock. Specifically, on 15 December 2014 the Mandal *soum* CRK developed and approved the Procedure on Pastureland Usage Fees for In-migrant Herders<sup>119</sup>.

**Table 6.33 Number of herder households, by *aimag* and *soum*, 2010 – 2013<sup>120</sup>**

	2010	2012	2013
Selenge <i>aimag</i>	4,187	4,056	4,047
Mandal <i>soum</i>	493	489	485
Bayangol <i>soum</i>	454	403	387

The following fees were imposed by the *soum* Governor's Office on in-migrant herders:

- Unauthorised migration and encampment: 250 MNT per sheep per day; and
- Formal migration: 4,000 MNT per sheep per year.

In FGDs with herders it was revealed that in-migrants are subverting this policy by migrating from the other *aimags* and settling temporarily in *soum* centres, prior to bringing in their animals (thereby adding

<sup>119</sup> Mandal *soum*'s CRK Presidium Resolution #256.

<sup>120</sup> Statistical Yearbook of Mongolia, 2014, page 376; Socio – Economical Statistical data of Mandal *soum*, 2014, page 62; Socio – Economical Key Parameters, 2014.

to the livestock numbers in the *soum*). So while this policy may be reducing informal and/or unauthorised encampment, it is too early to tell if it is reducing the overall pressure on pasture areas. As indicated above, pasture degradation and overgrazing, is less likely occurring due to in-migration, than existing herders increasing their livestock numbers, with migrant.

*"Most in-migrant herder households move here from Western aimags without any official registration (not paying any taxes). Pastureland is overused because pastureland management is weak at soum level and no pastureland coordination work has been conducted by the soum Government Office so far. But since 15<sup>th</sup> July soum government will coordinate the land allocation based on heads of sheep."*

Reported by participants of FGD with Herder group of Mandal

*soum.*

As mentioned above, Mandal *soum* has a high percentage of forest land and less land available for agriculture than Bayangol *soum*. Bayangol *soum* therefore has more livestock due to its bigger pasture area. Accordingly, it was reported that it is very difficult for in-migrant herders to find available pasture land in the Mandal *soum*, increasing the potential for land use disputes.<sup>121</sup> Moreover, the overgrazing problems in both Mandal and Bayangol *soums* has led in some areas to land use disputes between herders; between herders and crop farmers (see box below for a description of a typical land use dispute in Mandal *soum*).

*"In autumn, during the hay harvest period, disputes over pasture use are common between hay makers and herders. When herders move from the summer camp to autumn place, their livestock eats the farmers hay before harvesting."*

Reported by participants of FGD with Herder group of Mandal

*soum*

*"Herders don't own their pastureland and this results in conflict (during harvest time) with crop farmers. For example, haymakers and agriculturalists are starting to fence off their land, thereby protecting their crops from herders' livestock and effectively excluding animals year-round from the land. This places greater pressure on remaining pastureland."*

FGD with herder living along the Gatsuert Project haul

road

The household survey showed that most (just over 60%) of the pasture use disputes at the *soum*, *bagh* and household levels occurred between neighbouring herder households in an area. Land use disputes between local and in-migrant herders mainly occurred in Mandal *soum* (38%), compared to Bayangol *soum* (16%). This is likely due to the fact that there is relatively less pasture land in Mandal. The more common disputes in Bayangol were between herders and crop farmers in Bayangol *soum* (about 30%).

<sup>121</sup> KII with the Mandal *soum* Social Worker.

**Table 6.34 Parties involved in land use disputes, % of household survey respondents<sup>122</sup>**

	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
Between herders camping nearby	67.9	58.1	62.5	55.2	66.7	59.0	62.7
Local herders and in-migrant herders	16.1	37.9	41.1	34.3	17.5	29.5	32.2
Herders and mining companies	5.4	9.7	8.9	10.4	5.3	1.6	8.5
Herders and farmers	30.4	12.1	7.1	16.4	29.8	0.0	19.5
Other	1.8	2.4	1.8	3.0	1.8	1.6	3.4

*Note: More than one response could be given so the responses may not add up to 100%*

The frequency of pasture disputes varies. A third (33.4%) of respondents indicated monthly disputes. The high frequency of pasture use disputes in Mandal *soum* can be explained by the low pasture availability and capacity to support additional livestock grazing. Just over 30% of herder households report that they have seasonal land use conflict, usually with hay makers and crop farmers due to the seasonal nature of cropping and hay making (see Table 6.35). According to the Mongolian Law on Land the local Government is responsible for the regulation of land use disputes. In June 2013 Selenge *aimag's* CRK approved the "Procedure on ensuring operational consistency of herders and crop farmers" to regulate land use dispute between herders and crop farmers. In September 2014, during the monitoring of the implementation of this procedure, which was conducted in Khushaat, Orkhon and Baruunburen *soums*, local government organised *bagh* meetings and established a tripartite agreement between *bagh* governors, herders and crop farmers. As a result, disputes between herders and farmers are reported to have decreased by 30-50%, thereby providing an early indication that this procedure is proving effective in managing pastureland disputes.<sup>123</sup>

**Table 6.35 Frequency of pasture disputes**

	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
Regularly (monthly)	19.2	33.4	28.1	28.8	38.5	28.0	28.1
Occasionally (seasonal)	26.4	25.8	26.0	22.2	31.7	30.8	23.8
Rarely/ None (annually)	54.4	40.8	45.9	49.0	29.8	41.2	48.1

Solutions to disputes have been applied: Mandal *soum* has imposed land use fees for in-migrant herders and all *soums* in Selenge *aimag* have implemented the procedure to regulate disputes between herders and crop farmers. Although local Governments try to resolve all disputes, local communities prefer to solve these disputes by themselves than resort to formal means. The most common dispute resolution strategy is through mediation by the *bagh* Governor, the lowest level of Government. Bayangol residents indicated that they prefer to resolve disputes directly between parties (60% compared to 40% in Mandal). The higher number of disputes solved through mediation in Mandal compared to

<sup>122</sup>Sustainability East Asia. 2015. Household Survey for the Gatsuur Project Social Baseline Study.

<sup>123</sup> <http://mofa.gov.mn/selenge/images/tailanguud/11-%20%20.pdf>.

Bayangol may reflect that disputes are more common in Mandal *soum* due to the higher competition for pasture in Mandal.

**Table 6.36 Common way to solve the pastureland use disputes<sup>124</sup>**

	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
No actions and measures are taken	11.7	11.1	9.8	12.2	11.7	6.0	14.1
Agree on acceptable options	60.0	40.0	32.8	47.3	58.3	50.7	43.8
Regulated/settled by <i>bagh</i> governor	16.7	21.5	23.0	20.3	16.7	19.4	20.3
Regulated/settled by <i>soum</i> governor	8.3	12.6	16.4	9.5	8.3	11.9	10.9
Other	0.0	2.2	0.0	2.7	1.7	1.5	1.6
Uncertain	3.3	12.6	18.0	8.1	3.3	10.4	9.4

At the *soum* level the perceptions on pasture management in the case of herder in-migration varies. As mentioned above, local officials and herder household apply different procedures and tactics to regulate land use disputes and limit in-migration of herder families. Most respondents in the household survey think that no need special actions toward in-migrant herder households are required, with responses indicating: at *soum* level: 40 – 55%; at *bagh* level: 30 – 56% and household level: 45 – 47%. Consistent with the above analysis of herder disputes, the highest proportions of households that believe special permissions are required are in Mandal *soum* (21% in Mandal compared to 9% in Bayangol).

**Table 6.37 Pastureland management upon the arrival of in-migrant households<sup>125</sup>**

	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
No special actions needed	55.4	39.9	29.6	46.4	55.8	47.3	44.8
Consults with neighboring herders	24.1	22.0	22.2	22.6	23.3	24.7	21.9
Report to <i>bagh</i> and <i>soum</i> administration to get permission	8.9	21.4	18.5	23.8	10.0	18.3	15.6

*Note: More than one response could be given so the responses may not add up to 100%.*

The Law on Land provides for common use areas including pastureland. While this supports the Mongolian Constitutional right to land, common use creates challenges in decision-making processes. This is especially the case where herder families migrate within the same *soum*. The family's registration remains in the same administrative area, however the challenge arises where land possession/ownership certificates have not been obtained and/or updated. There is currently no formal process in place to reassign a household to graze in a new area. Household survey data shows that reallocation of land use rights is conducted at the *soum* level, the *bagh* level, and between herder households themselves. In over half of all these cases, no decision is made at all and the problem is not solved. The household survey indicated that *bagh* administration has a greater role in such decisions for herder households, compared to the *soum* administration for settled households.

<sup>124</sup>Sustainability East Asia. 2015. Household Survey for the Gatsuert Project Social Baseline Study.

<sup>125</sup>Sustainability East Asia. 2015. Household Survey for the Gatsuert Project Social Baseline Study.



#### 6.6.3.4 Artisanal Mining

Most of the mining exploration and extraction licences in Selenge *aimag* are issued for gold (about 78%).<sup>126</sup> This in turn has attracted ASMs from different part of Mongolia. ASM emerged in Mongolia over a decade ago in response to economic transition and climatic disasters that caused widespread poverty and unemployment.<sup>127</sup> ASM workers are often under-employed rural people, low-paid civil servants or herders who have lost livestock during the *dzuds*, and in many cases, people without formal incomes (further discussion on ASM is also included in Section 6.4.4 Employment).<sup>128</sup> ASMs often prefer to exploit those areas where formal mining activity has, or is occurring, which tends to be located in mining companies' exploration or mining licence, or former licence areas. With respect to gold mining (most common form of ASM in the Project area), the land types where ASMs operate depend on the type of gold occurrence: placer gold mine (land near waterways) or hard rock gold mine types (more common in forested areas). ASM is the single biggest reason for land use disputes between these local Government, mining companies and ASM workers in the Project area.

##### ***Land Use Disputes Between ASM Workers, Government, and Mining Companies***

*"ASM workers always want to exploit the land associated with mining company's licenced areas. ASM workers have already started to exploit the Noyon mountain area, therefore land was disturbed due to the mining activities of ASM. State organisations should improve the monitoring of ASM's activity, should change the attitudes of ASMs, deliver training and increase accountability, and clarify the provisions of related to ASM law and regulations."*

KII with Head of Governor's Office, Selenge

*aimag*

*"We (the ASM cooperative) are working on an area that was previously part of the Boroo Gold Company's exploration licence area. We had verbal consent from local government and Boroo Gold to do this, when it was still part of BGC's responsibility. But now this licence area is the responsibility of "Selenge Mineral Exploration Company". We are in dispute with this new company due to absence of a formal agreement with the local government to exploit this land."*

FGD with Bayangol *soum* ASM group

In 2005, the Swiss Agency for Development and Cooperation (SDC) commenced implementation of the Sustainable Artisanal Mining (SAM) project to support and increase the capacity of ASM workers.<sup>129</sup> In December 2010 the Prime Minister of Mongolia approved the "Procedure for the regulation ASM activities".<sup>130</sup> This procedure includes that full authority for regulation of any land use disputes related to ASM activity is given to the local Government body through establishment of agreements with relevant stakeholders. Tripartite agreements can be made with the commercial mining licence holder and relevant ASM cooperative group(s), or dual agreements can be made directly between the *soum* Government with the ASM cooperative(s). Through the support of the SAM project and introduction of the above-mentioned procedure, Selenge *aimag's* local Governments have started to regulate the ASMs. This has resulted in the establishment of ASM cooperatives in the mining focused *soums*.

<sup>126</sup> Compilation of Research on Development of the Integrated Water Resource Management Plan, 2012, page 210.

<sup>127</sup> [http://sam.mn/info\\_en.php?url=intro](http://sam.mn/info_en.php?url=intro).

<sup>128</sup> Cane, I. Schleger, A. Ali, S. Kemp, D. McIntyre, N. McKenna, P. Lechner, A. Dalaibuyan, B. Lahiri-Dutt, K. and Bulovic, N. (2015). Responsible Mining in Mongolia: Enhancing Positive Engagement. Sustainable Minerals Institute: Brisbane. pp 68.

<sup>129</sup> [http://sam.mn/info\\_en.php?url=intro](http://sam.mn/info_en.php?url=intro).

<sup>130</sup> <http://mram.gov.mn/images/stories/mram/UUSH/BichilUurhai/regulation.pdf>.



60% of Mandal *soum* households or 4,228 family members are involved in ASM, and around 228 *soum* residents are members of the 30 officially registered ASM cooperatives (3 big NGOs, with around 30 to 100 members and 27 small cooperatives with 3 - 10 members).<sup>131</sup> The number of ASMs in Mandal *soum* is significant, however, establishment of tripartite agreements between commercial miners, *soum* governments and ASM cooperatives are not always reached. The dispute between ASMs, Selenge Mineral Exploration Company, and local Government mentioned in the above box is a good example of the difficulties experienced in forging these types of agreements). Further, the *soum*, the ASMs and BGC experienced lengthy discussion since the commencement of the Boroo Gold Project on whether to establish an agreement, with a decision by BGC to abstain from formalising any arrangement.<sup>132</sup>

Refer to Appendix B for additional context and analysis on ASM in relation to the Gatsuurt Project. The ASM context changed from when the social baseline study for the Gatsuurt Project was conducted in April–May 2015 compared to September 2015 when ASM manifested in a different form. Therefore, the decision was made to substantively address the emergent ASM issue separately (in Appendix B) by further analysing the context / baseline and the impacts thereof, and providing management measures and company commitments to effectively address the issue. Management measures are also captured in the Social Management Plan for the Gatsuurt Project.

#### 6.6.4 Land Ownership and Possession

As mentioned in the above section, around half of Selenge *aimag's* land is used for agriculture, by herders, crop farmers and in some parts, by ASMs. A third of the *aimag's* land is covered by forest, and used formally by forestry cooperatives and informally by other forest users. Mandal *soum's* forest area is used mostly used by forestry groups (64%), while more than 80% of Bayangol *soum's* agricultural land is used by herders, agriculturists and ASM groups.<sup>133</sup>

The Law on Land Ownership for Mongolian citizens allows land ownership for the following purposes (see Section 6.6.3.3 Agriculture and Pastureland): household production or enterprise production purposes.<sup>134</sup> As of May 2015, 194 citizens of Mandal *soum* each owned about 36ha of land; and in Bayangol *soum* 478 citizens owned just over 33ha of land each. The higher number of people issued with land in Bayangol *soum* can be explained due to greater availability of land in Bayangol *soum* compared to Mandal *soum*.

**Table 6.38 Land ownership status in Selenge *aimag*, May 2015<sup>135</sup>**

	Ownership	
	Number of citizens	Area of owned land, ha
Selenge <i>aimag</i>	2,845	405.83
Mandal <i>soum</i>	194	36.03
Bayangol <i>soum</i>	478	33.46

<sup>131</sup> SAM Project. 2011. Baseline study of ASMs' Livelihood Level. page 186.

<sup>132</sup> The Selenge *aimag* mining policy includes the following provisions on ASM in the *aimag*: "Clause 3.1.3. Will ensure that ASMs operate in accordance the laws and regulations, within cooperative's framework.

Source: [http://www.selenge.gov.mn/index.php?option=com\\_content&view=category&layout=blog&id=46&Itemid=111](http://www.selenge.gov.mn/index.php?option=com_content&view=category&layout=blog&id=46&Itemid=111)

<sup>133</sup> <http://land.eic.mn/TaLandInventory>; <http://baruunkharaa.gov.mn>; Socio – Economical statistical data of Mandal *soum*, 2014.

<sup>134</sup> Land Ownership of Mongolian citizen: Article 4.1.

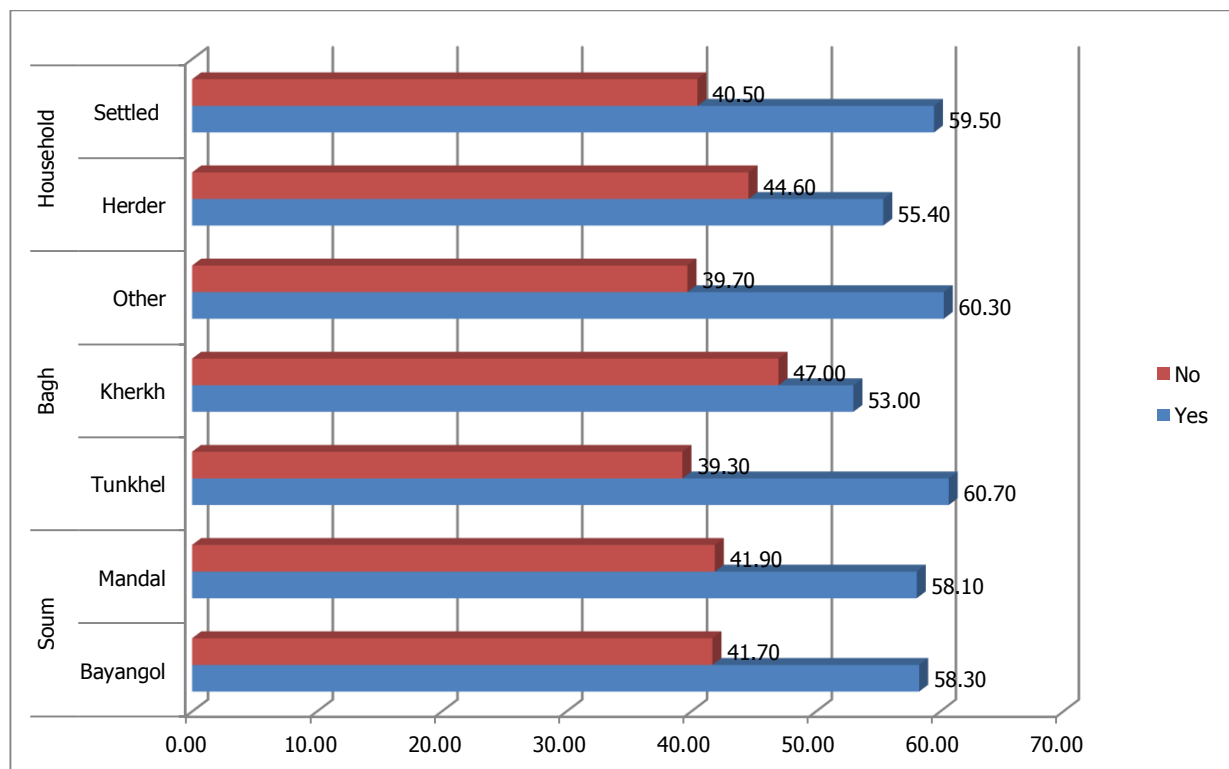
<sup>135</sup> Selenge bulletin, May 2015, page 46.

The household survey revealed that households in *soum* and *bagh* centres used land for household production slightly more than rural / herder households, and that most of this production (75-99%) is carried out on land located in the *soum* centres (see Table 6.39 and Figure 6.39).<sup>136</sup> Herders are more focused on livestock rearing and consumption thereof, while urban households are easily able to produce vegetables for household production and sale, being closer to markets and infrastructure than herders. Kherkh has a higher number of residents who use land in other *soums*/*aimags* for household production (22%). This could be due to greater accessibility to other *soums* / *aimags* by Kherkh *bagh* residents, whereas Tunkhel is more remote and access to neighbouring *baghs* and *soums* is more challenging.

**Table 6.39 Location of land used by citizens for household production**

	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
<i>Soum</i> center	98.6	85.5	92.8	76.3	97.6	86.2	91.8
<i>Aimag</i> center	1.4	2.2	1.4	1.7	2.4	3.1	1.4
Other <i>soum</i> , <i>aimag</i>	2.7	10.9	2.9	22.0	2.4	9.2	7.5

Note: More than one response could be given so the responses may not add up to 100%.



**Figure 6.39 Percentage of respondents who use land for household production (%)**

In Mandal *soum*, about 72% of survey respondents do not have a land possession certificate for pastureland, compared to 47% in Bayangol *soum*. This may be due to higher land availability in Bayangol than in Mandal, and the Government's decision to manage land shortage pressures through allocation or non-allocation of permission certificates (see Table 6.40). More than half of all surveyed

<sup>136</sup>Sustainability East Asia. 2015. Household Survey for the Gatsuert Project Social Baseline Study.

households do not hold possession certificates for use of pastureland. Specifically, approximately 69% of respondents from Tunkhel *bagh*, 71% of Kherkh *bagh* respondents, over 70% in Mandal *soum*, and nearly 50% in Bayangol *soum* do not have possession certificates.

Seeking land possession and ownership certificates is becoming increasingly common, and increasingly necessary, in Mongolia. Traditionally, formal use rights have not always been sought, particularly by herding households. Most respondents cited that at *soum* and *bagh* level the lack of coordination from local government on land ownership and possession certification processes discourages application. However, the *soum* Land Department reported that limited land availability at the *soum* level make land use management and decision-making difficult (see quote below).

*"For this time, the Land Department is working to resolve land ownership certificate applications from 5,700 citizens (between years of 2003-2012). In 2013, the Land Department received applications from 3,000 people (especially at the "open door" event). Soum land resources are becoming limited, therefore since 2014, the Land Department hasn't accepted any applications for land ownership. In parallel, the department received and resolved the outstanding applications regarding other land relations. In 2014, the Land Department received around 200 land possession applications (an increase of 15-20% compared with previous years), and we believe will continue increasing in the coming years."*

KII with Land Officer, Mandal *soum*

**Table 6.40 Local community land possession and usage rights<sup>137</sup>**

	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
Hold official contract with <i>soum</i> authorities	22.7	11.7	12.5	13.3	19.9	17.4	15.0
Settled over generation	21.1	11.2	13.5	9.5	19.9	20.2	12.4
Settled since Negdel <sup>138</sup> (timeline)	1.6	0.5	1.0	1.0	0.7	0.9	0.9
Privatised existing animal shelters and enclosures	7.0	2.3	2.1	2.9	6.4	4.6	3.9
Possession of well	3.1	0.9	1.0	1.0	2.8	3.7	0.9
Crop field/area near by	1.6	3.7	5.2	2.9	2.1	2.8	2.6
Does not have permission	46.9	71.5	68.8	70.5	51.8	55.0	65.7

*Note: More than one response could be given so the responses may not add up to 100%.*

### 6.6.5 Use of Natural Resources

Selenge *aimag* has some of the richest natural resources in Mongolia, with water, minerals, pastureland and forestry resources. Users of natural resources are required by law to pay a natural resource usage fee.<sup>139</sup> Users obliged to pay fees for use include *aimag* citizens, cooperatives and companies. Every month *soum* Governments collect natural resource royalty revenues as part of the local development budget, which is required by law to be spent on environmental protection and natural resource restoration measures (see Table 6.41).

<sup>137</sup> Sustainability East Asia. 2015. Household Survey for the Gatsuert Project Social Baseline Study.

<sup>138</sup> The common term for the agricultural cooperatives in Mongolia during the socialist era

<sup>139</sup> Law on Natural Resource Usage Fee (2012).

**Table 6.41 Investment of natural resource royalties by *soum* governments (all *soums* in Mongolia)<sup>140</sup>**

Natural resource royalty revenue type	Percentage of royalty revenues required to be spent on environmental protection & natural resource restoration measures
Timber, firewood royalty income	85%
Hunting royalty income	50%
Water use fees	35%
Income from the use of natural herbs	15%
Income from land use	15%

It should be noted that the income from land use includes funds obtained from herders for pastureland use, as well as agriculturalists for cropping and hay making. These funds are calculated on the following basis<sup>141</sup>:

- Fee of pastureland use, calculated based on heads of sheep is 0.01-0.03%;
- Fee based on one hectare of possessed, used cropping and hay fields is 0.01-0.03%, and
- Fee for other land type use (details not stipulated).

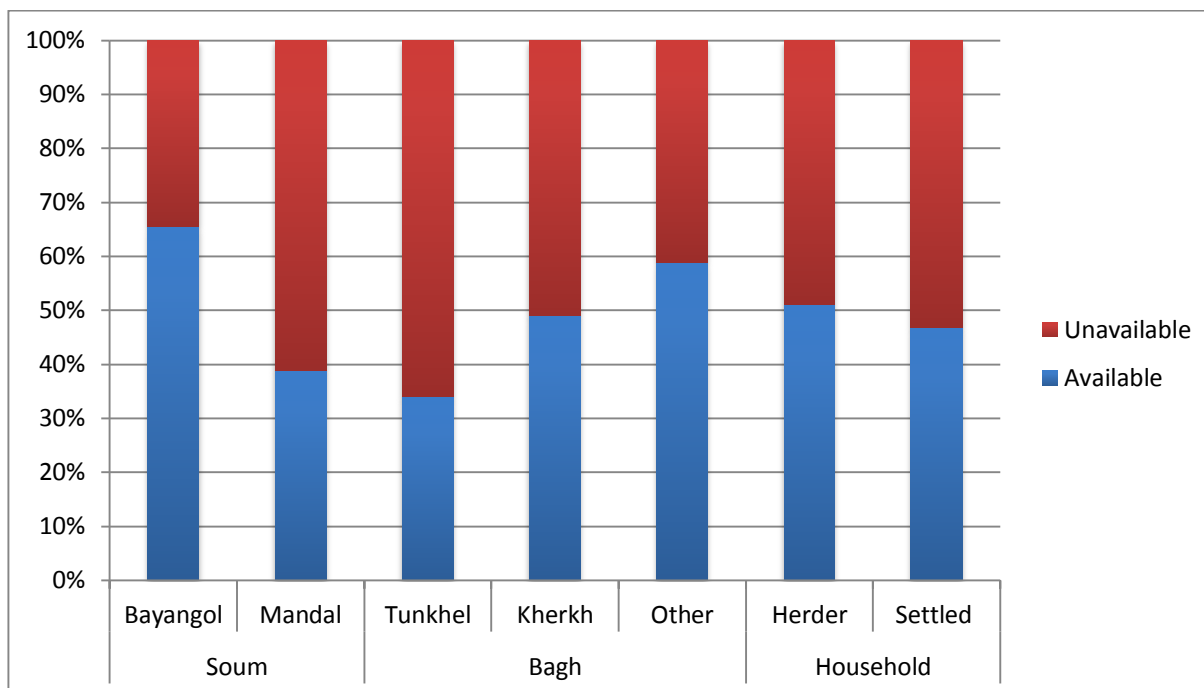
As per the above table, only 15% of fees from this source are reinvested into environmental improvements.

#### 6.6.5.1 [Pastureland](#)

As discussed in this Section, Selenge *aimag* land is predominantly pastureland, comprising 79% of the *aimag* land area and used predominantly by herders, crop farmers and hay makers. Household survey participants were asked about their views on winter shelter/spring grazing and pastureland availability. Only a third of Mandal *soum* respondents reported that pasture is generally available (39% of the respondents), compared to two thirds of respondents in Bayangol *soum* (66% of respondents). As mentioned above, this is because Mandal *soum* has a greater area of forest, which precludes grazing (such as in Tunkhel *bagh* where two thirds of respondents cite no grazing land availability), and a higher competition for available land through increasing livestock numbers. See Figure 6.40 below.

<sup>140</sup> Law on Natural Resource Usage Fee (2012).

<sup>141</sup> Law on Land Usage Fee (1997).



**Figure 6.40 Winter shelter / spring grazing area availability<sup>142</sup>**

Most herders have their own winter shelter and spring grazing area, even if, as mentioned above, these are not always formally registered, and so, are not always paying land use fees. Further, those herder households without winter shelters or spring grazing areas are able to use common use land free of charge according to the customary land use rights.<sup>143</sup> This has implications for those who do, and the resultant available funding that can be reinvested into environmental improvements (See Case Study below). As reported above, only 15% of land use fees are spent on environmental improvement, so the lack of registration has negative implications for the possibility of land improvements.

#### 6.6.5.2 [Forestry Resources](#)

Selenge *aimag's* forestry area in 2014 was 1.5 million hectares or 10.7% of the total Mongolian forested area. Forestry area comprises 37.3% of the total land in the *aimag*. Mandal *soum* is more forestry focused (64% of total land of *soum*), especially Tunkhel *bagh*, compared to Bayangol (13%). Local community members who use these forestry resources include herders, settled area citizens (including SMEs established as businesses to sell forestry / timber products), ASMs and forestry cooperative groups. All groups use the following forestry resources: fire wood, nuts, herbs and berries. Permission for use however depends on which agency has responsibility for that part of the forest. In areas where a forestry cooperative has responsibility (as defined through a land use possession certificate), other users need to seek their permission to collect forest resources and pay an appropriate fee, or, other users can buy those products directly from the forestry cooperative group. If this area of forest is under *soum* Government responsibility, fees for collection of forest products are to be paid to the *soum*.

As primary users of forest areas, forestry companies and cooperatives have the additional right to use the forest's timber for logging, as well as use of other natural resources (nuts, berries, herbs) in those

<sup>142</sup> Sustainability East Asia. 2015. Household Survey for the Gatsuur Project Social Baseline Study.

<sup>143</sup> Mongolians' Pastureland Use and its Historical and Legal Regulation.

areas of land where they have possession. Additionally in that area, they are responsible for the protection, cleaning and preservation of the forest. This means that they are required to:

- Protect: prevent unauthorised logging and forest fires;
- Clean: clean the forest floor of naturally fallen timber, for sale or use; and
- Preserve: replant forest areas.

*"One of key requirement of Law on Forestry is a requirement of logging companies to replant. For each 100 cubic meter area of forest that is logged, forest re-planting is required of 3 hectares of land. This undertaking requires that the Forestry Company should develop an Environmental protection and rehabilitation plan. The aimag CRK is required to approve the Plan activities and expenses."*

KII with Head of Selenge aimag's Environmental

Department

#### 6.6.5.3 Mineral Resources

Selenge aimag has significant mineral resources, making it a strategically important area for the Mongolian economy. Resources include around 450 million tonnes of iron ore, 107 million tonnes of coal; 10 tonnes of placer gold ore; 56 tonnes of metal gold ore; as well as rich limestone deposits.<sup>144</sup> Key users of these mineral resources are mining companies and the ASM sector. In 2011 there were 197 companies active in Selenge aimag.<sup>145</sup> Most exploration and mining companies that operate in Selenge aimag hold licences for gold mining exploration or extraction (78.6% of all companies). The next most prevalent are licences for building materials extraction (15.2%), coal (2.4%) and iron ore (3.8%).

According to the Procedure for the regulation of ASM activities (discussed in above Section 4.6.3 Land Uses), a number of ASM cooperatives have been established, and undertake activities in accordance with the requirements stipulated by the Procedure. In total, Selenge aimag has 1,300 ASM workers and 32 ASM cooperatives with approximately 500 members. Some of these groups target land within mining company licence areas. As mentioned above, this procedure also regulates the use by ASMs of concentration plants, which have been put in place to minimise the impact of dangerous chemical use on the ASM workers and the local community.

*"There are two small-scale gold concentration plants: one is a private plant, owned by "Surleg Mandal" cooperative. The other is not currently operating (due to the absence of a Detailed Environmental Impact Assessment) and it was constructed with Czech government and SDC financing. These plants are used to mill and concentrate the local ASMs' extracted gold ore by gravitation method of concentration of gold, without using the dangerous chemicals like mercury and cyanide. Most ASM cooperatives have no exploration and mining licences due to absence [until recently] of legal regulation in Mongolia."*

KII with the Mandal soum Environmental

officer

#### 6.6.5.4 Water Resources

In 2011 Selenge aimag's Environmental Department completed the register of all water resources in the Selenge aimag.<sup>146</sup> Rivers make up just over two thirds of all of the aimag's water resources (68.6%). The biggest rivers in the aimag are of national importance in Mongolia: the Selenge, Orkhon, Kharaa,

<sup>144</sup> [http://selenge.gov.mn/index.php?option=com\\_content&view=article&id=949:2014-02-17-04-47-13&catid=46:uu&Itemid=111](http://selenge.gov.mn/index.php?option=com_content&view=article&id=949:2014-02-17-04-47-13&catid=46:uu&Itemid=111).

<sup>145</sup> Compilation of research on development of the integrated water resource management plan, 2012, page 210.

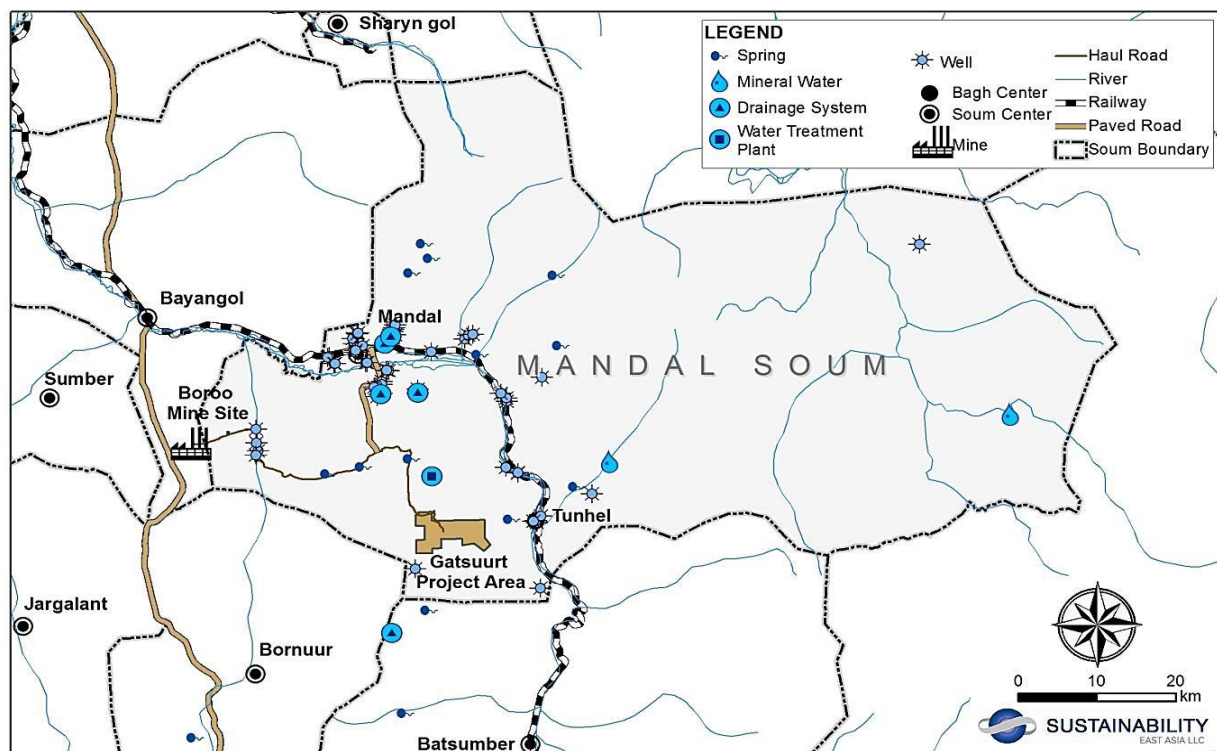
<sup>146</sup> Environment Department of Selenge aimag. 2015. List of Water Resources in Selenge aimag.



and Eruu rivers. The next most prevalent water resources are springs (25.1% of all registered water resources); lakes comprise 3.2%, and spas 3.1%.

The Gatsuurt Project is situated in Bayangol and Mandal *soums* which are located within the Karaa and Eruu river basins. The Kharaa-Eruu river basin falls under the jurisdiction of the Kharaa-Eruu River Basin Agency (RBA). These RBAs are relatively new in Mongolia, following their establishment in 2012 through the Mongolian Law on Water. The role of this regulation agency is protection of the river basin area; water pollution monitoring; and water consumption monitoring of water sources including hand/underground wells within the Khara – Eruu river basin area. The RBA has installed water meters at boreholes within the Gatsuurt Project area (at the head water of the Kharaa River).<sup>147</sup>

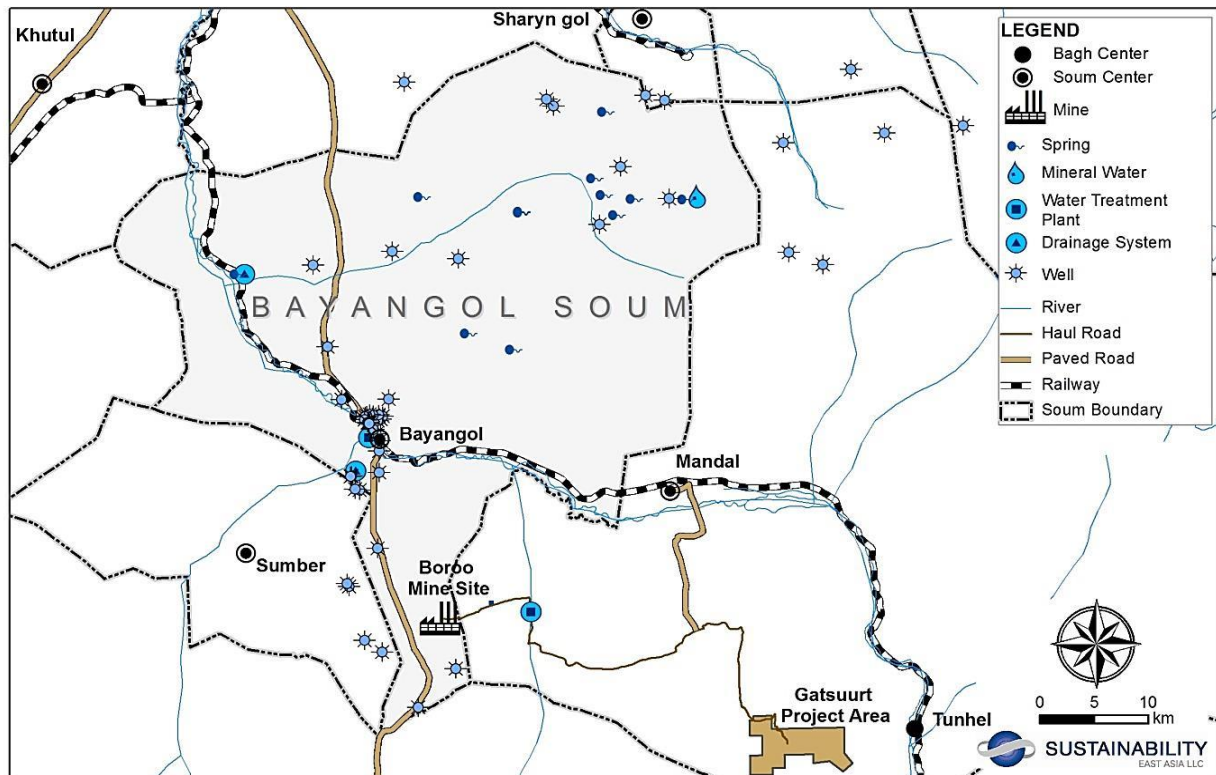
At the *soum* level, 88% of Mandal *soum's* total water is held in rivers, with the remainder in springs and spas. In 2011 (most recent information available), about 145 water sources were registered within Mandal *soum*, comprising 127 rivers, 15 springs and 3 spas (see Figure 6.41).



**Figure 6.41 Water resources in Mandal *soum***

In Bayangol *soum*, the registration information from 2011 cites 10 rivers, 12 springs and one spa (see Figure 6.42).

<sup>147</sup> Reported by in KII with the Head of Kharaa - Eruu River Basin Agency.



**Figure 6.42 Water resources in Bayangol soum**

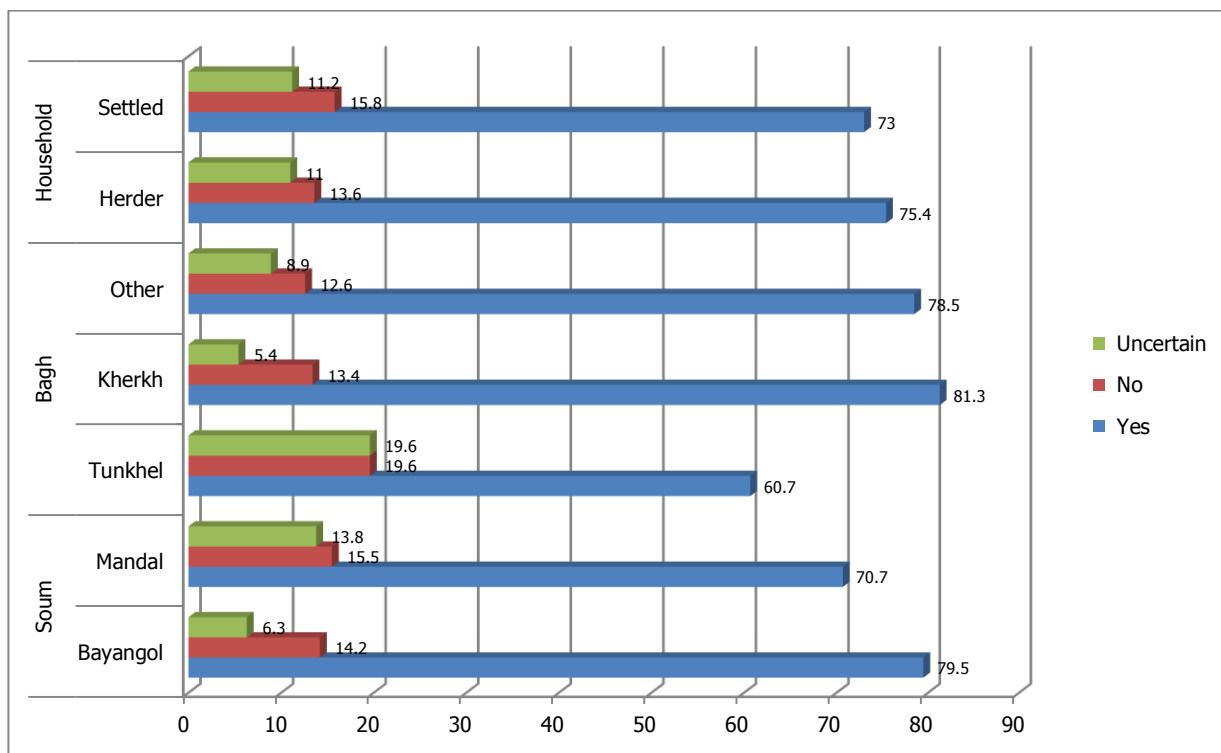
In both *soums* and *baghs* in the Project area, household survey respondents indicated that most users have equal access to water resources (around 65% of respondents report equal access).

*"For livestock watering and drinking water purpose we use a spring. Drinking water is extracted from the spring before water livestock watering."*

FGD with herder group living along the Gatsuurt Project haul road

*"ASMs use herder's hand wells for drinking water purpose. There are two private plants in the gold ore milling area; the water used for processing is from the river. A water meter has been installed to monitor the water use, but not water quality."*

Reported by FGD participants of Bayangol *soum* ASM group



**Figure 6.43 Households reporting equal access to water resources for all users (%)<sup>148</sup>**

The majority of survey respondents stated that there are no disputes between local communities on water use (90-95% of respondents across all categories). More water disputes are cited in settled households than herder / rural households (see Figure 6.43 and Table 6.42). The infrequency of disputes and general equality of access to water resources in the Project area illustrates that water scarcity is not a key issue in the Project area, unlike in many other water scarce areas of Mongolia.

However, as highlighted in Section 6.3 Economy, while household water access is not a key issue at present, the potential impact of mining on water resources and quality is a key issue and was among the major concerns of households when asked about their perceptions of the negative impacts of mining. Indeed, most household survey respondents cited that their drinking water quality is currently adequate (59 – 74%), while the remainder of respondents cited insufficient water quality due to water hardness (in Bayangol *soum* and its *baghs*), and due to mining activities (in Mandal *soum* and Tunkhel *bagh*). This is an indication that water pollution is increasingly likely to become a key community concern particularly in Tunkhel *bagh*. Moreover the growing importance of water quality issues was highlighted by the KII conducted with the Head of the Kharaa-Eruu RBA, where he stated that “small rivers and springs are heavily polluted by livestock and as a result, the Kharaa-Eruu RBA has started to conduct the Darkhan Uul *aimag* water pollutants inventory. This involves identification of the potential river water polluting companies along the Kharaa-Eruu river basin area; there an estimated 900 companies”.

*“Water quality is not good due to soil pollution.”Usnii barilga LLC” did monitoring on the water quality. The result of the monitoring identified causes and impacts of pollution. Firstly, a) The soum hasn’t taken any actions to protect water resource, and b) Ger district households use hand dug wells which are impacted by soil pollution.”*

<sup>148</sup> Sustainability East Asia. 2015. Household Survey for the Gatsuur Project Social Baseline Study.

Governor	KII with Mandal <i>soum</i> Deputy
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**Table 6.42 Frequency of households reporting disputes about water usage (%)<sup>149</sup>**

	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
Always	2.3	3.7	5.1	3.5	1.4	2.5	3.5
Occasionally	3.0	5.4	2.6	7.1	4.1	2.5	5.5
None	94.7	90.9	92.3	89.4	94.5	95.0	90.9

Water quality monitoring is not common, even though all licenced companies are required to undertake water testing at least twice a year, and the *soum's* environmental department is required to monitor water pollution. ASMs (Eruu, Khuder, Bugant *soums*) tend to use water with no pollution controls in place, thereby polluting rivers with chemicals used for processing. Only 6-14% of household indicated that they monitor the water quality of drinking water. Monitoring by households consists primarily of visual monitoring of wells, and a number of households also indicated that they use the Railway Agency's groundwater well and believe that Railway Authority takes water samples for analysis to check the water quality. Thus, the monitoring conducted by households can be considered as informal monitoring.

**Table 6.43 Percentage of respondent who monitor their drinking water quality**

	<i>Soum</i>		<i>Bagh</i>			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
Yes	6.3	11.3	9.7	13.9	5.9	11.1	8.8
No	93.7	88.7	90.3	86.1	94.1	88.9	91.3

Consistent with practices nationally, half of the respondents in the household survey respond that they use one water source for livestock watering and another for drinking water purposes. During the household survey most respondents (89% – 96%) highlighted that for livestock watering they use water from rivers and springs in summer, autumn, and spring, and water from hand wells in winter time. This response is further evidence of the good availability of water for livestock and human consumption purposes across all seasons. Industrial water user requirements vary. Companies using less than 50m<sup>3</sup> water per day require a water usage agreement with the *aimag* Water Agency. Where greater volumes are required, the company should obtain a water usage permit from relevant authorities like River Basin Authority (>50m<sup>3</sup>/day) or MEGDT (>100m<sup>3</sup>). Crop farmers' requirements differ again. Most crop farmers are able to extract water from the river without any controls on consumption volumes (due to inability to track water extraction from rivers), hence these users tend to settle near rivers. Different permitting requirements of users poses issues with respect to payment for water usage as well as making it difficult to track polluters and hold them responsible. The development of RBAs is one way in which these issues are being addressed, albeit progress on controls and monitoring is occurring slowly as the RBAs develop capacity.

<sup>149</sup> Sustainability East Asia. 2015. Household Survey for the Gatsuert Project Social Baseline Study.

### 6.6.6 Conclusion

A number of key issues and themes associated with land use and natural resources can be highlighted in summary. First, overgrazing and the accompanying pastureland degradation is a central issue in the study area. The primary reason for this is that existing herders and livestock owners have generally increased the number of animals they own (an approximate increase of 14% between 2011 and 2014). Contrary to the common perception expressed in FGDs, pasture degradation and overgrazing is less likely occurring due to in-migration, than existing herders increasing their livestock numbers, with migrant herders providing a perceived justification for the problem, as formal in-migrant numbers are not significant. Overgrazing problems in both Mandal and Bayangol *soums* has led in some areas to land use disputes among herders, and between herders and crop farmers. The frequency of pasture disputes varies. A third of respondents indicated monthly disputes. Mandal *soum* has the highest frequency of pasture use disputes, which can be explained by the smaller available pasture area in the *soum* (compared to Bayangol) and existing pasture degradation which has decreased the livestock carrying capacity.

Most herders have their own winter shelter and spring grazing area, even if these are not always formally registered, and so, many do not pay land use fees. This has implications for the resultant available funding that can be reinvested into environmental improvements. Regulation requires 15% of land use fees are spent on environmental improvement, so the lack of registration means there is less funding available for land improvements. A related theme is that more than half of all surveyed households do not hold possession certificates for use of pastureland. Specifically, approximately 69% of respondents from Tunkhel *bagh*, 71% of Kherkh *bagh* respondents, over 70% in Mandal *soum*, and nearly 50% in Bayangol *soum* do not have possession certificates.

The majority of survey respondents stated that there are no disputes between local communities on water use. The infrequency of disputes and general perception of equality of access to water resources in the Project area illustrates that water scarcity is not a key issue in the Project area. However, while household water availability is not a key issue at present, the potential impact of mining on water resource availability and significantly, quality is a key issue. This was among the major concerns of households when asked about their perceptions of the negative impacts of mining. This is an indication that water pollution is increasingly likely to become a key community concern particularly in Tunkhel *bagh*, regardless of any actual impacts.

## **6.7 COMMUNITY HEALTH, SAFETY AND SECURITY**

### **6.7.1 Introduction**

This Section presents the baseline context related to community health, safety and security in the Project area. The topics covered in this section include health care services and standards, the public health profile, and crime and social order (including human rights).

### **6.7.2 Reference Data**

The community health, safety and security section was developed based on analyses of available data at four levels (*aimag, soum, bagh and household*) including: primary and secondary data obtained from Selenge *aimag's* state and commercial organisations; from national statistical data websites; Mandal and Bayangol *soums'* state organisations; Tunkhel and Kherkh *baghs'* state organisations; KIIs with subject matter experts and key community representatives; FGDs with various groups within the community, and data gathered from the households survey conducted.

### **6.7.3 Health Care Services and Standard**

#### **6.7.3.1 [Overview of Mongolia's Health Care System and Standards](#)**

Mongolia's healthcare system has undergone major reforms since the socialist period. The strengths of the Mongolian health care services include well-trained and retained staff, understanding of the service needs and local condition, strategic plans, availability of data on health utilisation, decentralised management, and the involvement of clinicians in health service management. Some of the key challenges and gaps include the lack of modern diagnostic equipment and technology, inaccurate diagnoses, bureaucracy in the health care system, poor distribution of healthcare roles and specialties, inefficiency in allocation of financial resources between curative and preventive services, and major income-related and geographic barriers to access.<sup>150</sup>

Health service delivery in Mongolia is organised by administrative divisions and Mongolian citizens are required by law to register and have annual check-ups. Health services are provided both publicly and privately through a three-level service delivery structure – primary, secondary, and tertiary.<sup>151</sup> The majority of health services are delivered by the public sector.<sup>152</sup>

The health system is decentralised to the level of the *aimag*, where public services are designed to address four priority health issues: maternal health, child health, communicable diseases, and non-communicable diseases. The essential package includes health promotion, disease prevention and curative care, and is delivered for free through primary level services. The complementary package includes inpatient and outpatient services at secondary and tertiary levels, including emergency services and long-term care. Secondary and tertiary services are subsidised by the national Health Insurance Fund, and co-payments of 10-15% by patients are required. Population-based services are also delivered by primary and secondary level providers, including communicable disease monitoring, safe water supply and sanitation, health promotion and education, disease prevention, and environmental health. Management for long-term conditions including and HIV/AIDS is also covered. (see Table 6.44).

<sup>150</sup> World Health Organisation and the Ministry of Health, Mongolia. 2012. Health Service Delivery Profile, Mongolia.

<sup>151</sup> Health Sector Strategic Master Plan for 2006 – 2015.

<sup>152</sup> World Health Organisation and the Ministry of Health, Mongolia. 2012. Health Service Delivery Profile, Mongolia.



*Bagh* auxiliary health workers, or feldshers, are trained mid-level health personnel that work and live in their own *ger* to provide care to nomadic herdsman families and communities. *Bagh* feldshers work for and are paid by the *soum* health centres. In 2011, 1,058 *bagh* feldshers were working at *soum* health centres and *soum* hospitals, and there were 3.4 primary health care doctors per 10 000 population working in *soum* and family health centres. In 2011, 1,677 doctors were working in 1,184 private health facilities with 3,069 hospital beds. In general, Mongolia has a large number of health workers, but there is a shortage of nurses with a high doctor to nurse ratio. Medical schools depend on revenues from tuition fees, so they routinely enrol as many higher fee paying students as possible and consequently there are a disproportionately large number of doctors compared to nurses in the country. In addition, doctors are concentrated in urban areas, with rural postings being less attractive. Available data shows that the ratio of doctors per 10,000 people in Ulaanbaatar city is 1.5 times more than that in rural areas.<sup>153</sup>

Mongolia has more than twice the average number of hospitals than that of the EU and other transition countries, although numbers have been declining since 1998. There has also been a decline in the number of in-patient beds, though Mongolia still has a relatively high number of beds at 68.1 per 10,000 population (based on the most recent statistics from 2011).<sup>154</sup> The average length of stay in hospitals has decreased, from 12.3 days in 1990 to 8.1 days in 2011. In 2011, inpatient and outpatient visits were 2,491.6 and 6,187.2 per 10,000 populations respectively. The number of outpatient and inpatient visits is higher in Ulaanbaatar city than in *aimags*, which is consistent with the concentration and accessibility of health services in the capital city.

The number of private health care providers across Mongolia has increased in recent years from 683 private hospitals and clinics in 2005 to 1,184 in 2011. Most are small hospitals with 10-20 beds and/or outpatient clinics. There are also an increasing numbers of NGOs active in health promotion and awareness in HIV/AIDS, domestic violence, and drug and alcohol issues, among others.

**Table 6.44 Summary of service packages at each level of health care in Mongolia, 2012<sup>155</sup>**

Provider	Service delivered
<b>Primary Level – government funded</b>	
<i>Bagh</i> feldsher (rural)	Trained mid-level health personnel that work and live in their own <i>ger</i> and provide the following services: home visits; antenatal and postnatal care; health promotion and education; early detection; disease surveillance and epidemiological monitoring; referral of cases to <i>soum</i> hospitals; prescribe essential drugs; public health services
<i>Soum</i> health centres and inter- <i>soum</i> hospitals (rural)	Average 15-30 beds; provide 24 hour services with doctors (primary care, family medicine specialists or generalists), nurses, midwives, and support staff; health promotion and education; preventive care (e.g. immunizations and screening); disease surveillance and epidemiological monitoring; outpatient services including prescriptions; inpatient services including normal delivery of babies; minor surgery; diagnostic tests, home visits; emergency care; public health services; palliative care; rehabilitative care
Family health centres (urban, and private practices)	Staffed by family physicians and nurses during working hours. Outpatient services including prescriptions, preventive care (e.g. immunisations and cancer screening), disease surveillance and epidemiological monitoring, diagnostic tests, home visits, emergency care (limited), public health services, palliative care; rehabilitative care

<sup>153</sup> Health Service delivery profile, Mongolia, 2012

<sup>154</sup> World Health Organisation and the Ministry of Health, Mongolia. 2012. Health Service Delivery Profile, Mongolia.

<sup>155</sup> MOH, 2005.

<b>Secondary Level (10% co – payment required)</b>	
District hospitals	200-300 beds with doctors nurses, midwives and support staff 24 hours a day Services include: internal medicine, surgery, obstetrics, gynaecology, psychiatry, dermatology, and neurology; outpatient services including prescriptions; diagnostic tests (including X-ray and ultrasound); emergency care, public health services
17 <i>aimag</i> hospitals	105-500 beds with doctors (specialists and generalists), nurses, midwives and support staff 24 hours a day for 50,000 to 100,000 people. Specialized care: internal medicine, surgery, obstetrics, gynaecology, psychiatry, dermatology, and neurology; outpatient services including prescriptions; diagnostic tests (including X-ray and ultrasound); emergency care, public health services
<b>Tertiary Level (15% co – payment)</b>	
Regional diagnostic and treatment centres (4 in total)	Specialised care: internal medicine, surgery, obstetrics, gynaecology, psychiatry, dermatology, orthopaedics, neurology and outpatient services including prescriptions; diagnostic tests; and emergency care
Central Hospitals (3 in total)	Services vary depending on specialisation, e.g. cardiovascular surgery, neurosurgery, colorectal surgery, haematology, communicable diseases, mental health and narcology, traditional medicine and maternal and child health; other specialised care not found at the secondary level; inpatient and outpatient services and diagnostic tests, and emergency care
<b>Private Sector (fee-for-service)</b>	
Clinics	Specialised outpatient clinics including dental and traditional medicine
Private hospitals	Specialised hospitals providing internal medicine, obstetrics, gynaecology, and neurology
Sanatoriums	Rehabilitation and traditional medicine services

#### 6.7.3.2 [Health Care Services and Standards in the Project Area](#)

Selenge *aimag* has 98 different health institutions, employing approximately 1,113 medical specialists. Most health institutions are concentrated in the *aimag* centre (Sukhbaatar), and Mandal *soum*. These include:

- *Aimag* central hospital located in Sukhbaatar, which provides secondary level health care services (internal medicine; surgery; obstetrics; gynaecology; psychiatry; dental; dermatology; and neurology; outpatient services including prescriptions; diagnostic tests [including X-ray and ultrasound]; emergency care; and public health services).
- 7 family health centres, providing specialised health care at the secondary level, are located in Sukhbaatar (4) and Mandal (3) *soums*.
- 20 *soum* health centres and one inter-*soum* hospital for Saikhan, Mandal, Khutul *soum* citizens, providing primary level health care services are located in 14 *soums* and 6 *bagh* and Selenge *aimag*.
- Private sanatoriums, which provide mostly rehabilitation and traditional medicine services to rural and elderly population for a fee (elderly are considered to be people over 55 years old – for women and 60 years old for men. There is a private sanatorium in Mandal (Tunkhel *bagh*) and a public sanatorium in Bayangol *soum*.
- Pre- and post-natal care services are provided to women at maternity facilities located in Selenge *aimag* centre and at the Mandal *soum* hospital;
- There are 11 private hospitals specialising in dentistry, integrated traditional medicine, and modern medicine, most of which are located Selenge *aimag* centre and Mandal *soum*.

At the *aimag* and *soum* level, health service provision is based on the population size, and typically includes at minimum, secondary level health care services. Out of the total number of health institutions in Mongolia, 4% are located in Selenge *aimag*. Mandal *soum*, with its population of some 25,693 people, has 9 health institutions, including 1 clinics, 3 family health centres, 1 *soum* health centre, 1 sanatorium and 2 private hospitals. Bayangol *soum* has 1 *soum* health center, with a laboratory and 2 ambulances, 1 sanatorium for the elderly (total 19 medical staff). Tunkhel *bagh* has 1 health centre, which is categorised as a primary level health institution. There is also a private sanatorium for the elderly in Tunkhel *bagh* which was constructed with Austrian Government funding. This sanatorium also provides additional integrated services (i.e. not only to the elderly) including traditional medicine and modern medicine. Due to the absence of a maternity ward at the health centre in Bayangol *soum* and Tunkhel *bagh*, local women go to the Mandal *soum* hospital for pre- and post-natal care and to give birth.

**Table 6.45 Number of health facilities, hospital beds and physicians at *aimag* and *soum* level, 2014<sup>156</sup>**

	National average	Selenge <i>aimag</i>	Mandal <i>soum</i>	Bayangol <i>soum</i>
Number of health institutions	2,706	98	9	3
Doctors	9,300	189	36	3
Pharmacists	1,611	15	3	No data
Medical specialists (nurses, obstetricians, <i>bagh</i> doctor's assistant and other assistants)	18,317	545	114	11
Other medical workers	-	370	84	5
The number of hospital beds	20,576	624	115	12
Number of people per doctor	310	547	490	No data
Number of people per nurse	263	366	195	No data

The number of doctors in Selenge *aimag* has steadily increased in recent years to accommodate an increasing population. In 2014 compared to 2013 this number increased by 7 (3.7%), although the increase in doctor numbers was not accompanied by an increase in available hospital beds. Beds decreased by 3 in the same period. The increase in doctor numbers was further neutralised by an increase in patients by over 10%. So, despite the small increase in doctors in Selenge *aimag*, numbers are still inadequate to meet requirements and demand.

The national average of doctors and nurses per 10,000 population is 32.3 doctors and 38.1 nurses. This is higher than the minimum threshold of 23 doctors, nurses and midwives per 10,000 population established by the World Health Organisation [WHO].<sup>157</sup> There are 20.4 doctors and 51.4 nurses per 10,000 population in Mandal *soum* compared to 18.3 doctors and 27.3 nurses in Selenge *aimag*. These figures indicate that Mandal *soum* has a significant shortage of doctors, but a relatively better supply of nurses, while Bayangol *soum* lags behind both WHO indicators for doctors and the national average for nurses. Poor availability of health care personnel is, as evidenced by these numbers, clearly a key

<sup>156</sup> Yearbook of Selenge aimag, 2014; Mongolian Statistical Yearbook, 2014.

<sup>157</sup> World Health Organisation. 2015. Achieving the Health-Related MDGs – It Takes a Workforce. [www.who.int](http://www.who.int).

issue in the Project area. Corroborating this, poor availability of and access to health care practitioners and services were also highlighted in KIIs and FGDs (as below).

*"Bayangol soum medical personnel serve approximately 1,570 people, including Bayangol residents and travellers. Due to Bayangol's location close to the road leading to the Russian border, the soum receives many patients (travellers, road accidents, etc.). There is a lack of professional capacity in Bayangol to meet the demand for services. It is recognised that in rural areas and soum centres, the soum hospitals, including inter-soum hospitals, are experiencing a shortage of doctors."*

*KII with Head of Bayangol soum Health Centre*

*"Selenge aimag soums' health centres have a shortage of medical specialists, who note that 9 additional doctors are needed to service total aimag population."*

*Reported by the Selenge aimag Social Welfare Department*

Even though the number of doctors has increased in recent years, rural hospitals still lack professional staff. As reported by the Head of the Bayangol *soum* health centre, the lack of professional staff means that staff need to diversify their skills so as to service as many areas as possible. For example one doctor had training on emergency medicine (by State funding) and 2 nurses and one doctor have a medical degrees (by their own funding). Due to an absence of their own gynaecological professionals and a high demand for these services, the *soum* currently has plans to train one doctor in gynaecology.

Mongolian traditional medicine, which is based on medical theories, techniques and medications from Tibetan traditional medicine, was repressed during the mid - 20<sup>th</sup> century but is now officially recognised (see Table 6.46). Traditional medicine in Mongolia is an area of cultural practice that is often passed on from generation to generation, and within families. Bayangol *soum* health centre has a traditional medicine cabinet, which provides traditional treatments common among Mongolians. According to a Bayangol KII, this service is very popular with citizens.<sup>158</sup> As indicated in Table 6.46, many public and private hospitals in Mongolia offer traditional medicine treatments, and these treatments are particularly popular in the remote areas where there is often low access to modern healthcare.

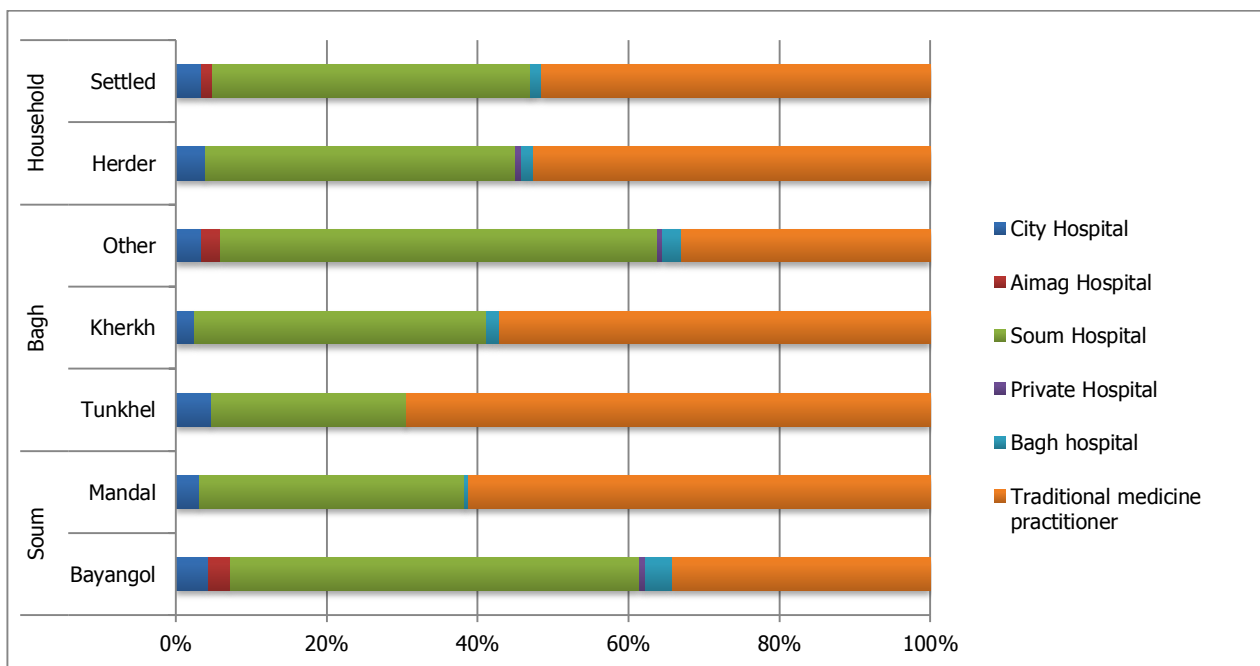
**Table 6.46 Traditional Health Services in Mongolia**

Traditional Medicine Provider	Services provided
<i>Aimag</i> , district general hospitals, health centres and polyclinics	Most district hospitals have traditional medicine departments, and most <i>aimags</i> have inpatient beds reserved for traditional medicine patients
Regional Diagnostic and Treatment Centres ( <i>aimags</i> )	Most national-level hospitals in Ulaanbaatar provide outpatient traditional medicine services
Traditional medicine inpatients and outpatients	10 smaller traditional medicine hospitals with 10 - 20 beds. There are 35 outpatient traditional medicine clinics close to or attached to government health centres in Mongolia
National Specialised Hospitals	The national specialised traditional medicine hospital has 100 inpatient beds that also receives 40-50 outpatients daily
Traditional medicine clinics and sanatoriums	There are 82 private traditional medicine clinics, 63 of these are in Ulaanbaatar. There are an unknown number of sanatoriums and spas. Massage, various types of physiotherapy, vacuum cupping, use of UV and ultrasonic waves, electromagnetic modalities, focal heat from light source, iontophoresis, acupuncture, sauna, inhalations, walking on crystals, treatment with herbs and medicinal plants, moxibustion, and diet related therapies are practiced, among others

<sup>158</sup> KII with Head of Bayangol soum Health Centre. The Baseline Study team was unfortunately not able to interview the doctor who administers these treatments during the data gathering period.

Every year Selenge *aimag* Health Agency organises free of charge health services during the “Open House Day” events, organised by the *aimag* Governors administration office. Specialised doctors that are not available in *soums* attend from *aimag* clinics to provide health inspections for local *soum* community members. These are generally well attended, suggesting a high demand for specialised services in the *aimag*, and also indicating the high demand for free public health services.

With respect to health service preferences at the *soum*, *bagh* and household levels (see Figure 6.44), the majority of all household survey respondents use either a *soum* medical centre or a traditional medicine practitioner. There were no significant differences between herder or settled households. The majority of respondents from Bayangol *soum* (54%) access medical services at the *soum* health center. 84% of respondents in Bayangol *soum* feel health services are accessible to them (i.e. that services are available when required). Respondents from Mandal *soum*, including Kherkh and Tunkhel *baghs*, prefer to seek traditional medical treatments. This may be due to personal preferences and the easy access to traditional medical practitioners in these areas. Over 80% of respondents from Mandal *soum* also report that health services are accessible to them.



**Figure 6.44 Health service preferences at *soum*, *bagh* and household levels<sup>159</sup>**

**Table 6.47 Health service accessibility (%)**

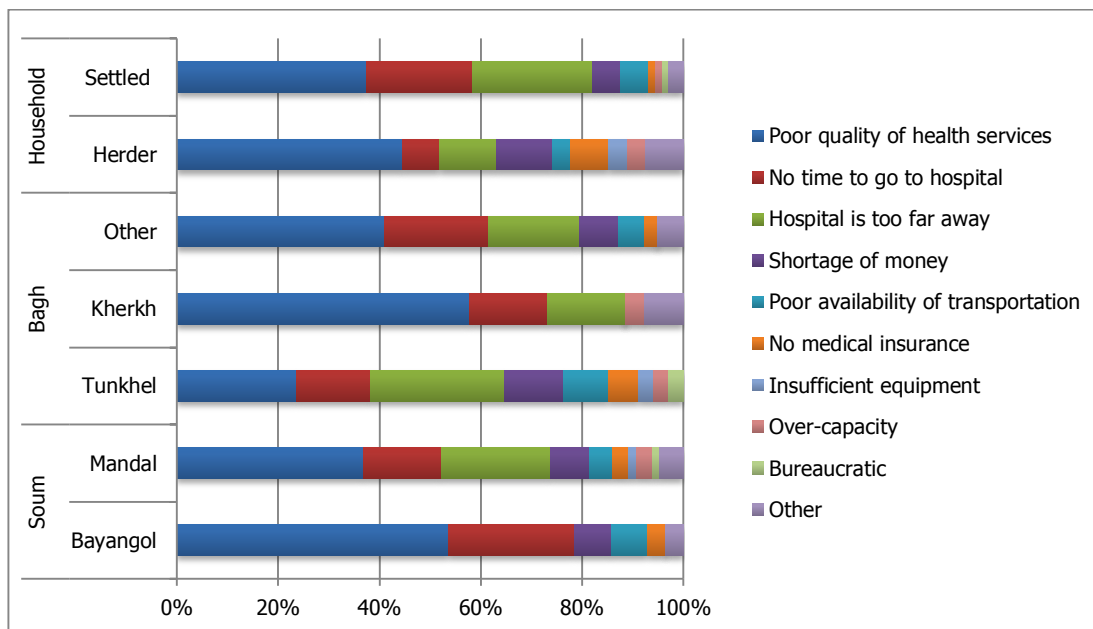
	Soum		Bagh			Household	
	Bayangol	Mandal	Tunkhel	Kherkh	Other	Herder	Settled
Accessible	84.1	80.9	79.1	82.4	84.2	84.5	80.8
Not accessible	15.9	19.1	20.9	17.6	15.8	15.5	19.2

<sup>159</sup> Sustainability East Asia Household's Survey data, 2015.

Providing further confirmation of the key challenges confronting Mongolia's health services mentioned earlier in this Section, the household survey respondents highlighted that the key reasons for the unavailability of health services was (see Figure 6.45):

1. The poor quality of health care that they receive;
2. No time to go to the hospital; and
3. Hospital is too far away.

Correlating these responses to earlier commentary around the type of facilities used by communities, it can be suggested that those in Tunkhel *bagh* consider the distance, cost and availability of transport a key factor for the use of traditional medical practitioners over modern facilities compared to those in other areas. Further, herder households report a greater concern with cost and a lack of medical insurance compared to settled households, who cite a lack of time and the distance as a key concern.



**Figure 6.45 Reasons citizens are not accessing health services<sup>160</sup>**

The response listed in Figure 6.45 were further explored in FGDs and KIIs, where participants at the *soum* and *bagh* level, where the critical issues associated with health services were listed as:

- Poor quality of health services;
- Lack of specialist doctors, such as: opticians, audiologists and dentists;
- Poor skills of *soum*/family clinic doctors;
- Lack of medicines; and
- Bureaucracy of the services.

<sup>160</sup> Sustainability East Asia Household's survey data, 2015.



*"The quality of health service is not good in the soum. This is because the number of hospital beds is insufficient, and medicines need to be supplied by patients themselves. The skills of soum and family clinic doctors are not good. For example many people pass away due to improper diagnosis of disease. The soum hospital has no optician, audiologist or dentist."*

Soum center citizens group FGD, Mandal soum

*"The Soum hospital is bureaucratic. There is a sufficient number of hospital beds but it is difficult for citizens to stay in a hospital and have treatment. Patients are asked to bring their own medicines and injections."*

Herder's FGD, Mandal soum

*"The health service is not accessible for everyone. There are not enough soum hospital beds and the hospital lacks specialised doctors. There is not enough medical equipment for diagnosis and treatment."*

SME FGD, Mandal soum

A common service provided by the public hospital and health centres in Mongolia is to offer the local community discounted drug prescriptions. According to the procedure titled "Providing price discounts for essential drugs, recognized by Health Insurance Funds," Mongolian people subscribed to health insurance (both compulsory and voluntary) can buy 132 different types of drugs in public and private pharmacies at rates discounted by up to 93%<sup>161</sup>. However, in practice the listed drugs or medicines have low accessibility for local communities due to the limited health insurance budget at *soum* and *bagh* levels. This very often results in disputes between local community members and health providers as individuals are unable to access the drugs they have been prescribed at the discounted price. Those who pay for health insurance are also unhappy with this situation, as they are not receiving the benefits that they pay for. Herders specifically reported this as an issue, and it is interesting to note that they are also the group that cited a lack of health insurance as a major health service concern. The low accessibility of these discounted drug prescriptions is not only an issue at the *soum* and *bagh* level, it is a nation-wide issue.

*"The soum's health centre has a limited budget for issuing these prescriptions: 420,000 MNT per month, which health centres try to prioritise for patients with serious health problems."*

Head of the Bayangol soum health

centre

*"Herders have no access to discounted drug prescriptions."*

FGD participants of Bayangol soum Herder

group

#### 6.7.4 Public Health Profile

During the socialist period health services were publicly funded. But despite achievements in workforce training, a network of facilities and improved health status of the population, the system is experiencing many challenges, as described above. In the mid-1990s, health sector reform focused on improving primary health care and disease prevention, and this, along with economic development, contributed to improvements in health status and epidemiologic transition over the last 15 years. The leading causes of mortality are non-communicable diseases and external causes. Respiratory and digestive system

<sup>161</sup> Resolution #02 of the Health Insurance Council, 2012.

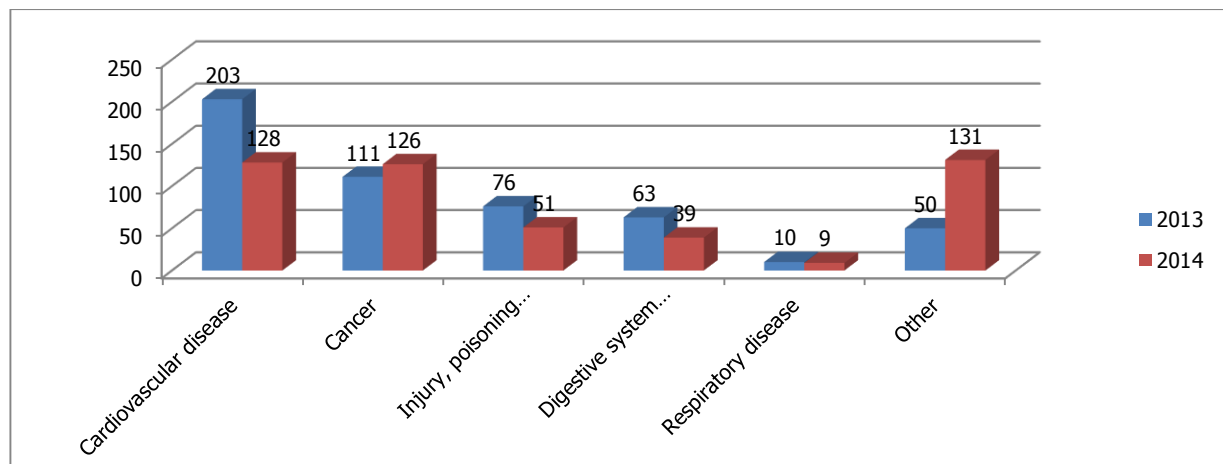
diseases are the main causes of morbidity in Mongolia, along with external causes (injuries) in urban areas, and urinary tract diseases in rural settings.

The average life expectancy of Selenge *aimag's* population in 2014 increased by approximately 1 year compared to 2012, and is higher than the national average, which was 69.6 years in 2014. In the first 5 months of 2015, a total of 631 children were born in Selenge *aimag*, which is 10% less than the the same period in 2014. The Bayangol *soum's* health center has no maternity care service, which explains the absence of babies born in that *soum*, with the exception of one child in 2014 born at home.

**Table 6.48 Births and deaths at *aimag* and *soum* level<sup>162</sup>**

<i>Aimag, soum</i>	2012	2013	2014	2015
<b>Births</b>				
Selenge	774	772	874	787
Mandal	231	249	338	288
Bayangol	0	0	0	0
<b>Deaths</b>				
Selenge	238	204	218	195
Mandal	63	49	61	59
Bayangol	9	5	9	5

The number of deaths at the *aimag* level decreased by 23 compared to 2014. A similar decrease is observed at the *soum* level: Mandal – by 23 people, and Bayangol *soum* – by 4 people. According to *aimag* statistical data the main causes of mortality are cardiovascular disease (40%) and cancer (22%). As shown in Figure 6.46, this is a very common tendency throughout Mongolia with the leading causes of death in 2014 at a country-level listed as cardiovascular disease (34.4%) and cancer (24.3%).<sup>163</sup>



**Figure 6.46 Main causes of death in Selenge *aimag*<sup>164</sup>**

Selenge *aimag's* Sukhbaatar *soum* is at the border crossing point with Russia, and Bayangol and Mandal *soums* are located along the international road between Ulaanbaatar – Sukhbaatar – Naushki (Russian border crossing point). This position attracts many local and international traders and travellers, who cross the border for tourism and trade purposes. In parallel Selenge *aimag* has a very attractive land

<sup>162</sup> Bulletin Selenge for May 2015, page 33 – 35.

<sup>163</sup> Mongolian Statistical Yearbook, 2014, page 114.

<sup>164</sup> Brief Introduction of Selenge aimag Health Sector's Statistics, 2014.

use composition (50% of agricultural land attracts herders and 37% of forestry attracts people who want to use the fruits, nuts, timber) and the *aimag* is rich with different types of mineral resources, which attract ASMs. All of these people can be the cause of transmission of different type of infectious diseases. People registered with an infectious disease at the *aimag* level have increased by 6.8% from 2014 and the infectious disease profile is now: 60% sexually transmitted infections (STIs); 25% is tuberculosis (TB); and 2% is Hepatitis C. The remaining 13.5% of infectious disease occurrence is related to other common type of transmissible infections.

**Table 6.49 Infectious diseases profile at *aimag* and *soum* levels, number of individuals**

	2012	2013	2014	2015
<b>All infectious diseases</b>				
Selenge	395	411	345	370
Mandal	75	76	67	61
Bayangol	12	17	10	4
<b>Sexually transmitted diseases</b>				
Selenge	122	180	203	219
Mandal	20	20	38	40
Bayangol			1	
<b>Hepatitis</b>				
Selenge	140	99	16	8
Mandal	36	20	1	
Bayangol	2	8	-	-
<b>Tuberculosis</b>				
Selenge	110	105	103	93
Mandal	17	21	24	17
Bayangol	10	8	9	4

At the *aimag* and *soum* levels the most common infectious disease are sexual transmitted diseases, with 59% at *aimag* level and 66% at *soum* level. Two thirds of all infectious diseases in Mandal *soum* are STIs, which could potentially be due to its greater urbanised population and incomers such as ASMs and other economic profit seekers engaging in unprotected sex. TB occurrence as of May 2015 had declined at the *aimag* level (25%) and in Mandal (28%) and Bayangol *soums*. All 4 cases of infectious disease recorded in Bayangol *soum* were TB. Selenge *aimag* has highest rate of TB per 10,000 population in Mongolia.<sup>165</sup> This can be explained by fact that Selenge *aimag* has a significant number of ASMs, who work underground in confined spaces to recover mineral resources. Working in close confines untreated could facilitate disease transmission. This group could potentially be at risk of being untreated for TB with low or no health insurance coverage and so low or non-attendance and treatment at health facilities.

<sup>165</sup> National Health statistical data, 2014.

#### ASM and Tuberculosis

*"Tuberculosis prevalence is very high at aimag and soum level, especially in Bayangol soum. The reason of this should be ASMs who work in the airless environment (underground) for long hours, which can facilitate tuberculosis transmission from infected individuals to those of vulnerable health. Every year health centre brings the X-ray fluorography equipment and serves the local community for free. The centre's laboratory has the capacity to conduct sputum tests, but there is lack of chemical reagents for analysis of the sputum and other tests: biochemical tests, blood tests and urine analysis, marker B, C, and others."*

KII with the Head of Bayangol soum Health

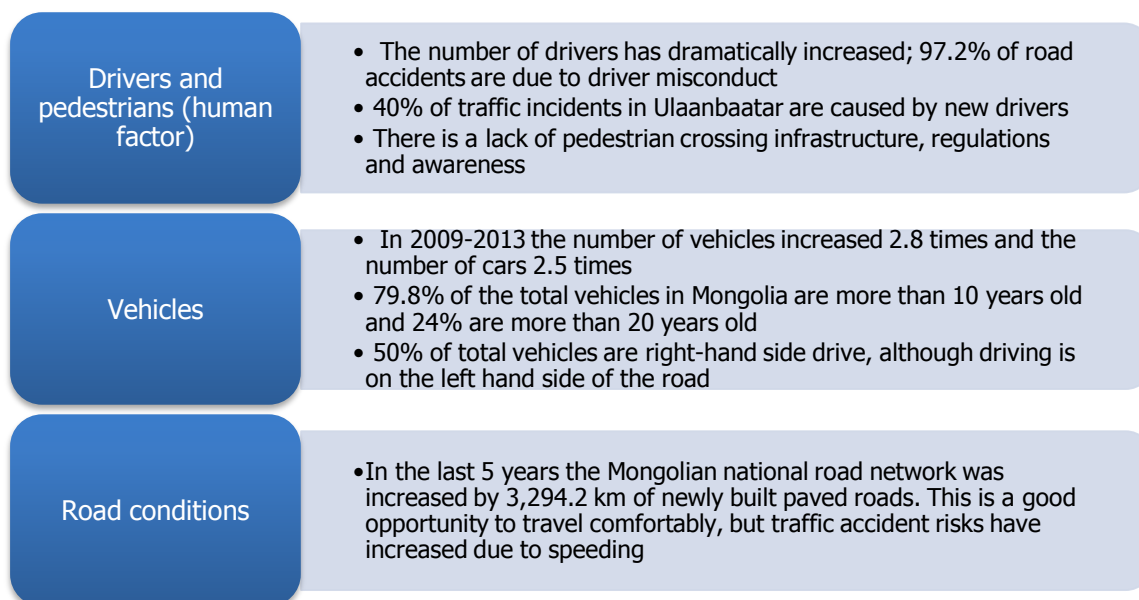
Centre

Another key issue raised in FGDs in Tunkhel *bagh* FGD was the negative community health impacts of dust generated from the unsealed road. Participants in the FGD consider that the dust increases their risk of diseases of the respiratory system. It was not possible to establish whether there is, in fact, a higher incidence of respiratory disease in Tunkhel and if so, whether this is due to dust from the road. It is also important to note that a key desire of many of the Tunkhel *bagh* residents is for a paved road to be built to the remote *bagh*. The issue of dust and the health impacts thereof has complex motivations that need to be located in the broader discussion of *bagh* development, especially in light of sensitivities to the development of the Gatsuert mine.

### 6.7.5 Traffic and Transport Incidents

In 2012-2013, the number of people killed due to crimes against the rules of traffic safety and use of motor vehicles increased by 18.9%. Furthermore, in the first 10 months of 2014, this number increased by 26.7% compared to same period in 2013. The number of injured people increased in 17.4% between 2013 and 2014.<sup>166</sup>

Key reasons identified for poor traffic safety in Mongolia include:



**Figure 6.47 Main reasons for traffic accidents<sup>167</sup>**

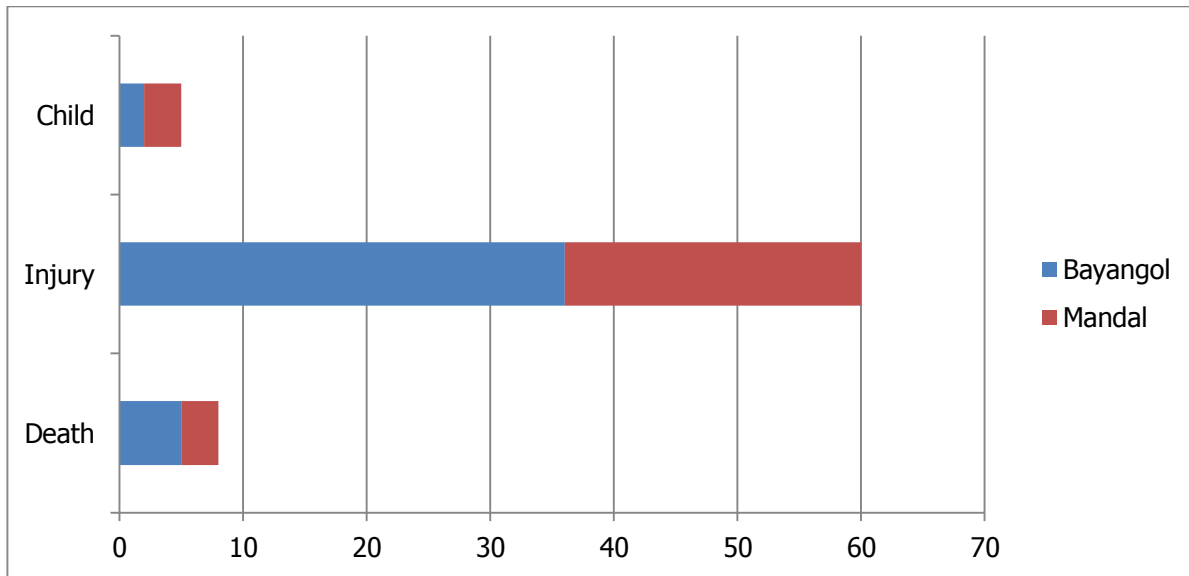
The following conclusions can be drawn from the above statistics:

<sup>166</sup> Road Maintenance and Traffic Safety, written by Highway Advisory Economist – Enkhtur B, 2013.

<sup>167</sup> Road Maintenance and Traffic Safety, written by Highway Advisory Economist – Enkhtur B, 2013.

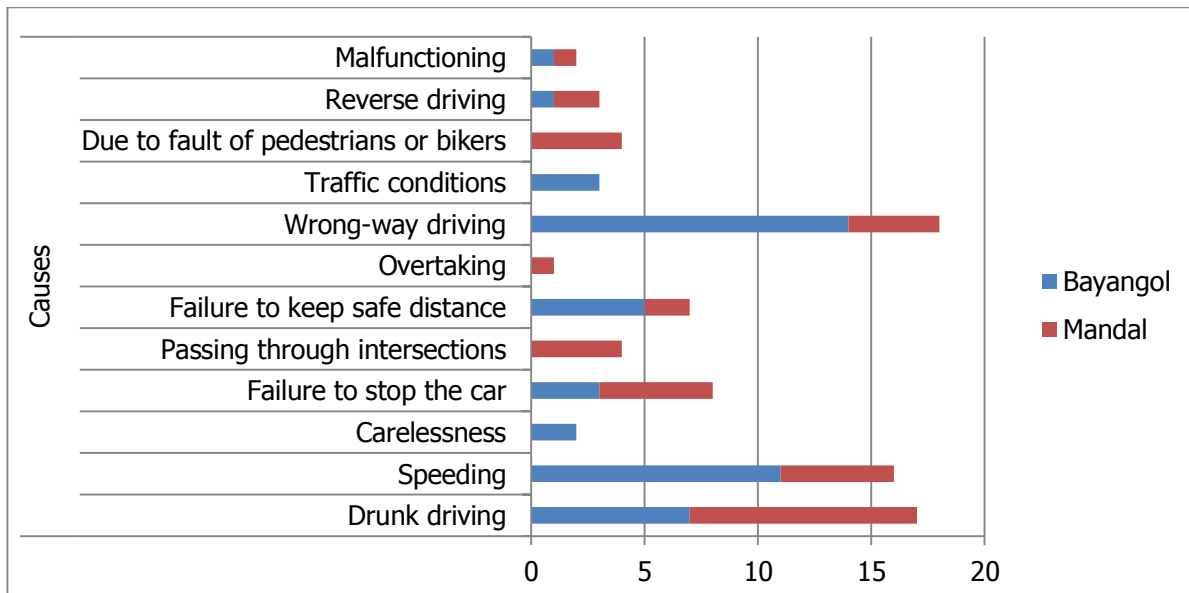
- Human error is a key factor determining traffic accidents (99.6%); and
- 97% of all traffic accidents are due driver misconduct.

According to the statistical data from Mandal and Bayangol *soums*, the vast majority of traffic accidents result in injuries<sup>168</sup>.



**Figure 6.48 Traffic accident injuries and deaths in Bayangol and Mandal *soums*, number**

The main causes of traffic accident in Bayangol are driving on the wrong side of the road and speeding, while in Mandal the main causes of accidents are drunk driving, speeding and failure to stop the car (brake) in slippery conditions.

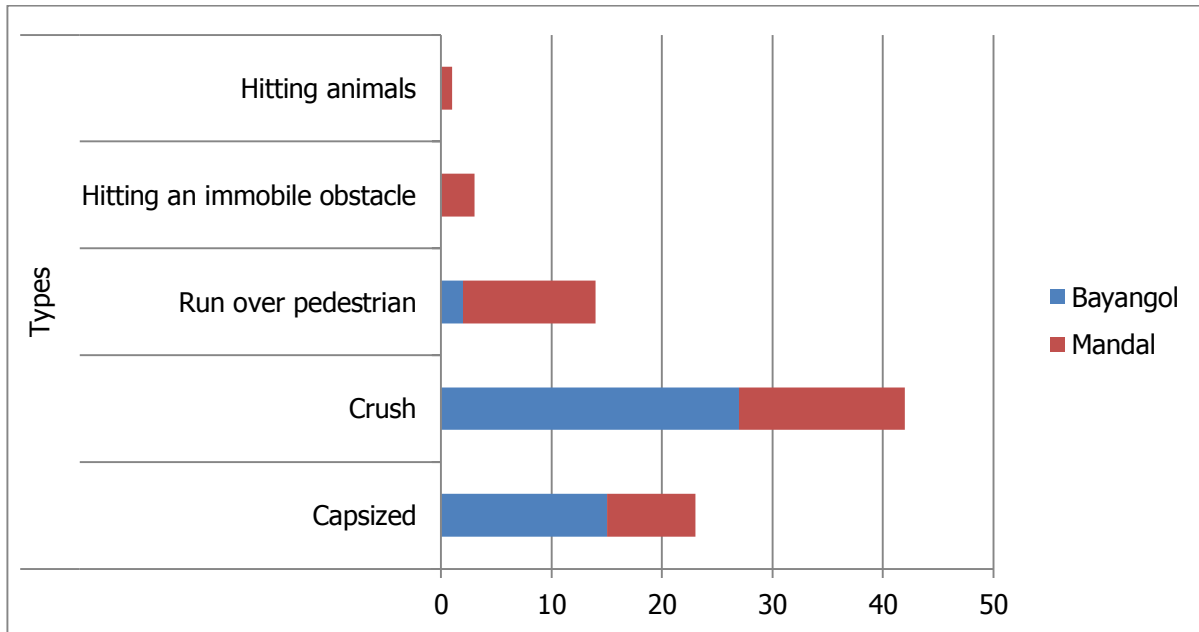


**Figure 6.49 Main causes of the traffic accidents in Bayangol and Mandal *soums*, number**

<sup>168</sup> Report on causes and conditions of traffic accidents happened in Bayangol and Mandal *soum* of Selenge aimag, 2014.

According to the statistical data of traffic accidents in Bayangol and Mandal *soums*, the main types of accidents are vehicle crashes:

- Bayangol – 61% and Mandal – 38%;
- Rolled vehicles: Bayangol – 34% and Mandal – 21%; and
- Run over pedestrians: Mandal – 31%.



**Figure 6.50 Main type of Traffic accident in Bayangol and Mandal *soums*, number**

A key concern expressed in a Mandal *soum* KII was in regard to road safety in Tunkhel *bagh* in light of the haul trucks on the road during the Gatsuurt Project operation. The key informant expressed that, similar to the Tunkhel *bagh* concerns about haul trucks using an unsurfaced road and the health impacts of dust generated, road safety may be compromised should haul trucks operate without improving (including paving) the haul road. However, there were also opposing views expressed in FGDs that increased speed (and so, accidents) would result from paving the road, as already with improvements in road conditions, citizens drive faster.

**Road Traffic and the Gatsuurt Project**

"During the development of Gatsuurt Project, road traffic incidents will be increased due to high volume of traffic: every 8 – 10 minutes will transport one hauling truck. It's impossible to start ore hauling without improving the road condition, road signs and traffic flow"

Head of Police in Mandal

*soum*

A number of themes can be highlighted when assessing the road accident and safety data presented above, as well as the information provided by police on crimes (see below) and the information gathered on traffic volumes and trends (see section 6.5.8.2 Traffic and Vehicle Ownership). The majority of vehicles travelling along the Gatsuurt haul road are light vehicles, and the main causes of traffic accidents in the Project area are due to risky driving practices (driving on the wrong side of the road, speeding and drunk driving). Road safety concerns are heightened when one combines the current



high levels of risky driving practices primarily in light vehicles with the fact that there will be high volumes of haul trucks along the road in the future.

Moreover, police statistics indicate that the major crimes in Selenge *aimag* are those related to traffic safety and the use of motor vehicles. At the *soum* level, Bayangol reports a higher percentage (31% versus 5.3%) of crimes related to traffic safety and the use of motor vehicles than Mandal *soum*. This is likely due to its proximity to the paved road between the Russian border and Ulaanbaatar. It is clear that road/traffic safety and vehicle use from a public safety and crime perspective are currently a major problem in the Project area, without the added complexity of haul trucks along the Gatsuurt haul road. It was unable to be established whether there are any Government programs to mitigate risky driving practices and raise awareness of road safety in the Project area. The Boroo Gold Project has conducted a road safety campaign in the past.

#### **6.7.6 Crime and Social Order**

According to the 1961 Criminal Code, a crime was a socially dangerous act or failure to act. During the Socialist era in Mongolia, actions that did not present a 'social danger' were not considered crimes, even though they may have violated the letter of the law. Crimes committed against the state and socialist ownership was considered more serious than crimes against private persons. In the late 1980s, the most common crimes were theft and embezzlement of state property, black-marketing, juvenile delinquency, misappropriation of materials (food and drugs, for example), and speculation (such as selling automobiles). Hooliganism and vandalism by juvenile delinquents in the towns and cities also caused the authorities grave concern. Much of this activity was attributed to the rising rate of divorce and to broken homes.<sup>169</sup>

Since the 1990s the profile of the modern crime in the country has changed according to the changes in society. The following types of crime have accelerated globally and in Mongolia, including drug-smuggling, money laundering and gambling, theft of intellectual property, cyber-crime, and human trafficking.

Selenge *aimag* has one police department in Sukhbaatar *soum* and two inter-*soum* departments in Saikhan and Mandal *soums*. 59.4% of total police staff has a university degree; 6% of total staff is certified by a special agency, and the remaining 34.6% have completed secondary education. The inter-*soum* department located in Mandal *soum* serves the populations of Mandal, Bayangol, Tunkhel and Kherkh *baghs* and 2 of Tuv *aimag's soums*.<sup>170</sup>

Alcohol remains a key influence on crime. According to police data by May 2015, 33% of the total registered crimes were committed under influence of alcohol. Compared to previous years all crimes committed decreased by 4.8%. At the *soum* level, the number of crimes in Mandal *soum* increased by 20.2%, and decreased by 41.7% in Bayangol *soum*. The Social Baseline Study team was unable to verify the causes for the differences in crime numbers, although suggest that part of the reason for the difference is due to the proximity to the police station in Mandal *soum* which makes is more convenient to report crime than in Bayangol *soum*. Therefore under-reporting of crimes may be occurring in the Project area due the distances of households from the nearest police station in Mandal *soum*.

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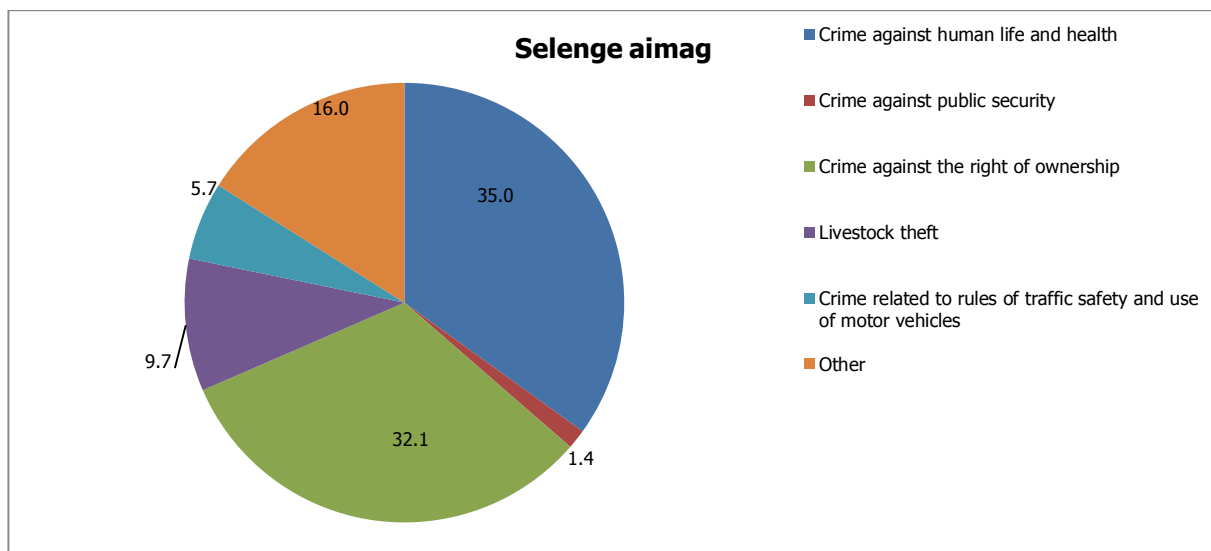
<sup>169</sup> [http://www-rohan.sdsu.edu/faculty/rwinslow/asia\\_pacific/mongolia.html](http://www-rohan.sdsu.edu/faculty/rwinslow/asia_pacific/mongolia.html).

<sup>170</sup> <http://www.selenge.gov.mn>.

**Table 6.50** Reported crimes at the *aimag* and *soum* levels, May 2015<sup>171</sup>

	Number of Reported Crimes		
	2013	2014	2015
Selenge <i>aimag</i>	315	331	315
Mandal <i>soum</i>	89	71	89
Bayangol <i>soum</i>	No data	24	14

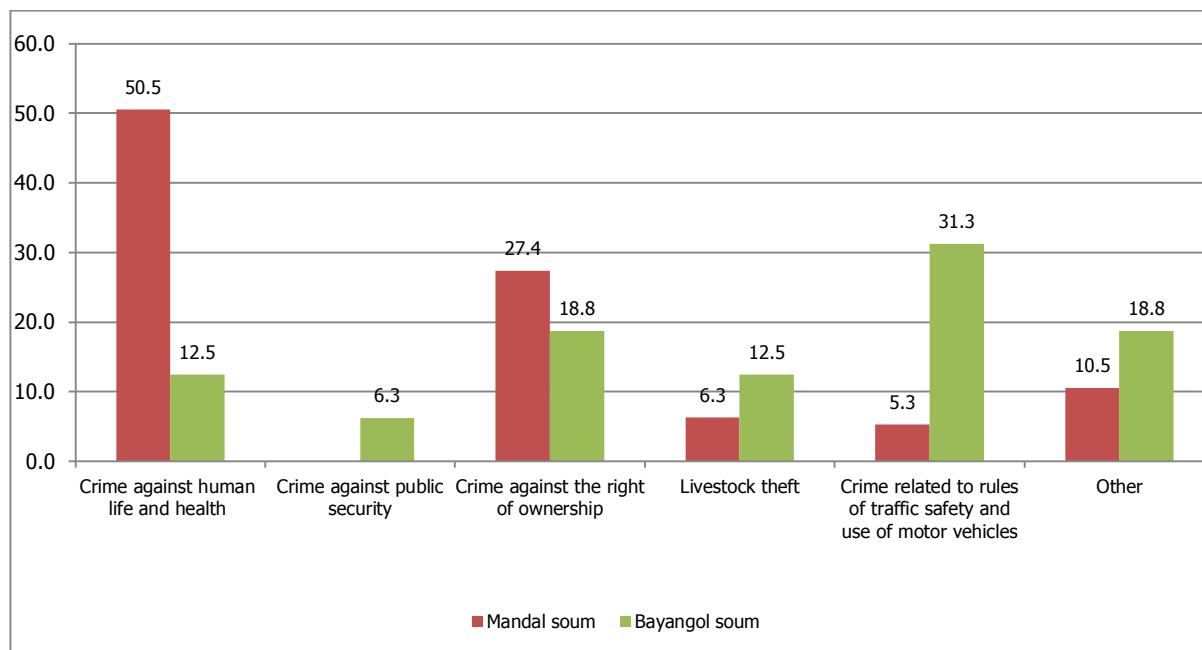
Of the reported crimes at the *aimag* level 35% are crimes against the right of ownership; 39% are crimes against human life and health; 2% are crimes against public security; 6% are crimes against the rules of traffic safety and the use of motor vehicles; and 18% are other crimes. A total of 57 fatalities related to violence occurred across Selenge *aimag*. There were 8 suicides; 3 people killed by others; 6 industrial accidents; 14 traffic accidents; and 26 other accidents.



**Figure 6.51** Structure of crime at *aimag* level, by May 2015

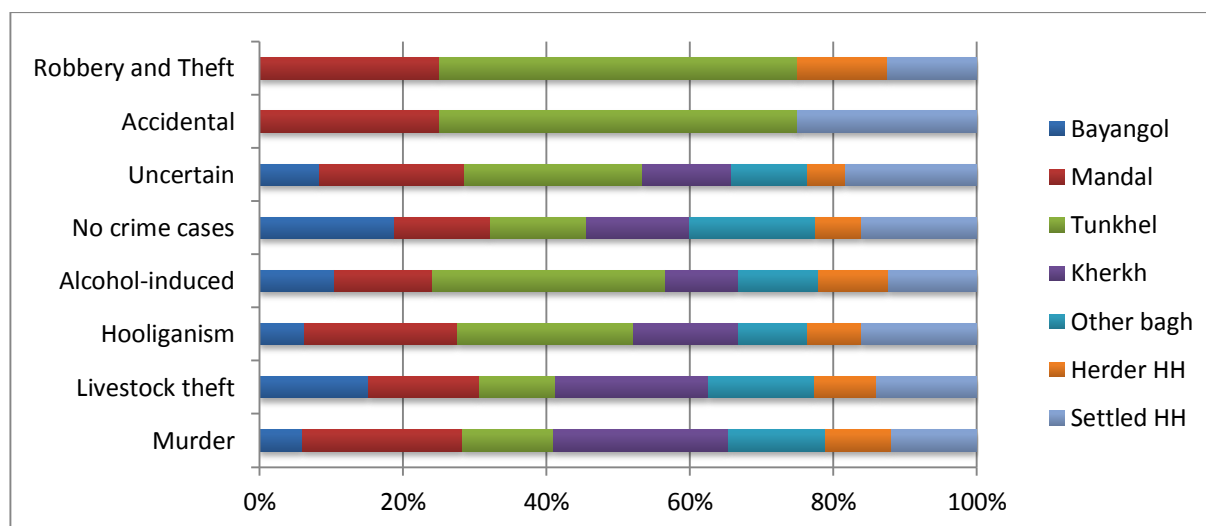
Just under half (48%) of crimes registered in Mandal *soum* are crimes against human life and health. 36% of Bayangol *soum*'s crimes are related to the rules of traffic safety and the use of motor vehicles, which can be explained by the location of the *soum* along the international road between Ulaanbaatar and the Russian border. The head of Mandal *soum*'s inter-*soum* police department noted that the road to the Russian border has a very high traffic load, especially in autumn and summer when there is an increase in traffic movement towards the border crossing point due to trade and holiday makers. Otherwise, the traffic load is 80 – 100 vehicles per day (combined total both to and from the border point). During peak times, one way traffic reaches to 100 – 150 vehicles per day (or up to 300 vehicles combined).

<sup>171</sup> Bulletin Selenge, May 2015, page 37 – 39.



**Figure 6.52 Structure of crime at the *soum* level, May 2015**

As part of the household survey respondents were asked list that the most common crimes at the *soum*, *bagh* and household level for last 2 years. Robbery and theft, murder and accidents were perceived to be the most common in Mandal *soum*, with the same views recorded in Bayangol *soum*. Tunkhel *bagh* respondents indicated that there is a high percentage (approximately 30%) of crimes related to alcohol use, and also indicated that robbery and theft and accidents were common.



**Figure 6.53 Crime profile for last 2 years at *soum* and *bagh* levels<sup>172</sup>**

Most respondents in the household survey (approximately 92%) had never been victims of crime. Approximately 70% of respondents from Bayangol *soum* and its *baghs* and approximately 75% of respondents from Mandal *soum* and Kherkh and Tunkhel *baghs*, who have been a victim of crime didn't inform the police due to the view that even if they did, they would not receive any compensation for

<sup>172</sup> Sustainability East Asia LLC. 2015. Household Survey for the Gatsurt Project Social Baseline Study.

damages/losses. Non-reporting of crimes is consistent with the above analysis of statistical under-representation of crime numbers in the Project area.

In response to the question “what is your assessment on local government’s crime-fighting activities?” most respondents at the *soum* (approximately 65%), *bagh* (approximately 60%) and household (approximately 60%) levels rate local crime-fighting capacity as “average and insufficient”. These figures are consistent with low trust by the community in local government agencies and the police.

With respect to the demographic profile of criminals, 14% of criminals are women, 8.0% are children, and the rest men. 44.2 % of criminals have committed a crime under the influence of alcohol. Most crimes are committed by men under the age of 18. It is not clear whether the high number of young people committing crimes is related to a lack of employment and alternative activities (other than drinking and so, committing crimes), or if there is also a bias by police for taking responsive action because offenders are young.

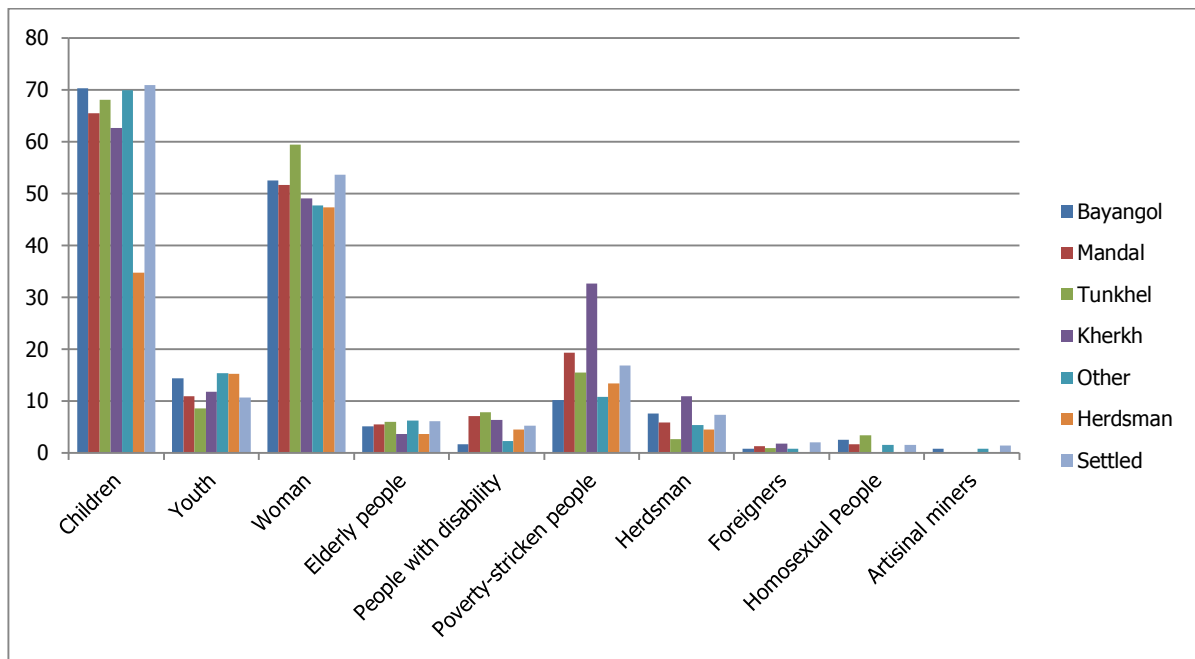
At the *soum* and *bagh* level, crimes against human rights are not commonly reported. This may be attributed to a very low awareness at this level of what human rights are and how these rights apply to each individual, and how they might be compromised. Indeed, more than half (57 – 70%) of the respondents in the household survey indicated that they haven’t heard of any specific human rights violations. In the context of low understanding on rights, most respondents from settled areas agree that at *soum*, *bagh* and household levels it is mainly children’s rights that are breached (in Mandal and Bayangol *soums* – approximately 65%; in *baghs* – 66%). After children, the household survey respondents indicated that women’s rights are primarily violated at the *soum*, *bagh* and household levels (between 47 – 60%). This is a very common issue in Mongolia and can be explained by high levels of public acceptance of domestic violence as a household, rather than community, issue. Domestic violence against women is perceived to be higher in Tunkhel *bagh* compared with other places (see Figure 6.54).

The Mandal *soum* crime profile suggests the majority are committed against women, in apartment areas, due to alcohol.<sup>173</sup> 28.8% of crime victims are female, 8.7% are children and the remaining 62.5% are men. Victims of domestic violence are different to victims of other crimes as they often live with the perpetrator, which may exacerbate the conditions of suffering from oppression and make it difficult for victims to leave the situation. This is often further complicated by the presence of children and the dependency of victims on perpetrators for accommodation/basic needs.<sup>174</sup> One of the reasons that many domestic violence cases are dismissed in court in Mongolia is a paragraph of the Criminal Procedural Law which specifies that if victims reconcile with the violator, the criminal case will be dismissed.

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<sup>173</sup> Mandal *soum*’s socio economical statistical data, 2014.

<sup>174</sup> Ways for prevention of domestic violence /Handbook/, 2003.



**Figure 6.54 Perceptions of key victims of human rights abuses in the Project area, number**

Both the household survey and FGDs reported that it is commonly known that private entities illegally force employees to work long hours. In Bayangol *soum* this was reported by 42% of respondents and in Mandal *soum* by around 43% of respondents. Child labour was also reported as a key issue Bayangol *soum*, where over 30% of respondents stated it is an issue. Slightly over 20% indicated that child labour is an issue in Mandal *soum*. Child labour most often takes the forms of herding (unpaid by households or family members), ASM or wage workers of forestry companies.

Most respondents (approximately 55%) in the household survey think that local public security is not a critical issue in their area. Moreover, a larger majority (over 70%) have never heard of any public security-related cases or situations. The remaining respondents, who were concerned about public security, indicated that their concern was related to the links between insecurity and alcoholism and unemployment which are critical at the *soum* and *bagh* levels. Indeed, nearly 55% of household survey respondents from Bayangol *soum* think that unemployment is critical for public security and a similar number of respondents in Mandal *soum* indicated that they think alcoholism is critical for their area's public security. The high unemployment levels and perception of few opportunities in the *soum* may explain the higher reports of concern regarding unemployment and insecurity in Bayangol. The concerns about alcohol and public security in Mandal *soum* may be attributed to Mandal being a bigger urban centre, with a more affluent population able to spend more money on alcohol.

ASM is also perceived to be a public health, safety and security issue. The ASM community's use and generation of hazardous materials such as mercury and other chemicals (due to tyre burning), and unsafe working conditions (digging of underground tunnels) pose health and safety risks to both themselves and to the local community in the vicinity. These concerns were summarised by the Head of Government Administration at the Selenge *aimag* level as follows: "Artisanal miners are becoming a threat to national security, because now ASMs have the capacity to exploit gold by using dangerous chemicals such as cyanide and mercury." These concerns are not unfounded, and as described in this

section (and elsewhere in this Report), the community health, safety and security issues associated with ASM are complex problems, which the legalisation and formalisation of the sector are only slowly beginning to address.

### 6.7.7 Conclusion

The key themes associated with community health, safety and security in the Project can be summarised as follows. There is a dearth of health care personnel in the Project area. Specifically, Mandal *soum* has a significant shortage of doctors, but a relatively better supply of nurses, while Bayangol *soum* lags behind both WHO indicators for doctors and the national average for nurses. Households report that the key problems with health services are (in order of importance): the poor quality of health care that they receive; no time to go to the hospital; and that the distance to the hospital is too far away. In common with national statistics, the main causes of mortality in the Project are cardiovascular disease and cancer. Officially recorded infectious diseases have increased by 6.8% at the *aimag* level from 2014, the most common of which are STIs. Selenge *aimag* has the highest rate of TB in Mongolia, which may be explained by the significant number of ASMs. Many of these miners work underground in confined spaces, which facilitates TB transmission from infected persons to others of vulnerable health status.

A key issue raised in FGDs in Tunkhel *bagh* was the negative community health impacts of dust generated from the unsealed road. Participants in FGDs cited that the dust increases their risk of diseases of the respiratory system. It was not possible to establish whether there is, in fact, a higher incidence of respiratory disease in Tunkhel and if so, whether this is due to dust from the road. It is also important to note that a key desire of many of the Tunkhel *bagh* residents is for a paved road to be built to the remote *bagh*. The issue of dust and the health impacts thereof has complex motivations that for consideration in the broader discussion of *bagh* development, especially in light of sensitivities to the development of the Gatsuurt mine.

In 2012-2013, the number of people killed due to crimes against the rules of traffic safety and use of motor vehicles increased by 18.9% in Mongolia. Furthermore, in the first 10 months of 2014, this number increased by 26.7% compared to the same period in 2013. The main causes of traffic accidents in Bayangol are driving on the wrong side of the road and speeding, while in Mandal the main causes of accidents are drunk driving, speeding and failure to stop the vehicle in slippery conditions. The majority of vehicles travelling along the Gatsuurt haul road are light vehicles, and the main causes of traffic accidents in the Project area are due to risky driving practices. Road safety concerns are heightened when one combines the current high levels of risky driving practices primarily in light vehicles with the fact that there will be high volumes of haul trucks along the road in the future. Moreover, police statistics indicate that the major crimes in Selenge *aimag* are those related to traffic safety and the use of motor vehicles. It is clear that road/traffic safety and vehicle use from a public safety and crime perspective are currently a major problem in the Project area, without the added complexity of haul trucks along the Gatsuurt haul road. It was unable to be established whether there are any programs (government or otherwise) to mitigate risky driving practices and raise awareness of road safety in the Project area. A key concern expressed in a Mandal *soum* KII was in regard to road safety in Tunkhel *bagh*, in light of the haul trucks on the road during the Gatsuurt Project operation.



Respondents' opinions varied on the impacts of further improving / paving the haul road, relating to dust generation, speed and accidents.

Alcohol is a key influence on crime. According to police data of May 2015, 33% of the total registered crimes were committed under the influence of alcohol. Just under half of crimes registered in Mandal *soum* are crimes against human life and health, while a third of Bayangol *soum*'s crimes are related to traffic safety and the use of motor vehicles, which may be explained by the location of the *soum* along the international, paved road between Ulaanbaatar and the Russian border. The majority of households surveyed at the *soum*, *bagh* and household levels rate local crime-fighting capacity as "average and insufficient". Crimes against human rights are not commonly reported. This may be attributed to a low awareness at this level of what human rights are and how these rights apply to each individual, and so, how rights may be compromised. Domestic violence against women is perceived to be higher in Tunkhel *bagh* compared with other places surveyed. The Mandal *soum* crime profile suggests the majority are committed against women in apartment areas, with alcohol involved. Child labour was also reported by over 30% of respondents as a key issue Bayangol *soum*, compared to slightly over 20% in Mandal *soum*. Child labour most often takes the forms of herding (unpaid by households or family members), ASM or wage workers of forestry companies.

## 6.8 CULTURAL HERITAGE

### 6.8.1 Introduction

This Section addresses cultural heritage baseline conditions in the Gatsuurt Project area. The types of cultural heritage considered in the baseline include: Archaeological sites, Monuments, and items of Intangible Cultural Heritage (ICH) value.

This Section should be read in conjunction with the *Intangible Cultural Heritage Study Report* prepared for the Gatsuurt Project. As such, this Social Baseline Report provides a summary of the key findings of the Intangible Cultural Heritage Study Report.

### 6.8.2 Reference Data

The reference period for the baseline study is 2012 to 2015. The key secondary data sources consulted in the development of this section include, as mentioned above, the *Intangible Cultural Heritage Study Report* developed for the Gatsuurt Project by the Mongolian Academy of Sciences, as well as reports on the tangible cultural heritage in the Project area, including the *Official Mongolian Archaeological Statement Regarding the Noyon Uul Sites*<sup>175</sup> and site locations and details. Primary data was gathered in KIIs and FGDs with local community members, the household survey conducted among households in the Project Area of Influence, as well as in the ICH Baseline Study conducted specially on this topic.

Additional information (photographs, figures, tables, analysis, etc.) not included in this section can be found in the primary documents themselves.

### 6.8.3 Heritage Context

#### 6.8.3.1 Mongolian Cultural Heritage Overview

Mongolia is well known for its rich history and culture rooted in nomadic traditions. Social changes, globalisation and rapid urbanisation are increasingly affecting the cultural traditions of Mongolia and one of the serious challenges facing the country is how to balance rapid growth and the preservation of its cultural heritage.

The types of cultural heritage considered in the baseline include:

- Archaeological sites, defined as physical remains of ancient or historic human activity or occupation, most often including subsurface resources, and often indicated by the presence of surface artefacts or structural remains. These include ancient graves, ancient settlements, and surface ceramic scatters, among others.
- Monuments, defined as above-ground structures of public interest and/or historical significance such as religious monuments, among others.
- Sites and items of Intangible Cultural Heritage (ICH) value, defined as sites that form part of the spiritual or cultural lives of modern populations such as traditions of the local people, nomadic herding, and folk legends. ICH refers to customs, traditions and beliefs that make a people or a region distinctive and socially cohesive. Sites with ICH value often include the traditional forms of cultural heritage such as historic monuments, archaeological sites, and

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<sup>175</sup> Official Mongolian Archaeological Statements Regarding the Noyun Uul Sites. 2012. <http://news.gogo.mn/r/83991>.

historic landscapes, but they may also include natural features such as flora, fauna and particular ecological zones. Sites with ICH value are not specifically protected by Mongolian national legislation.

### Archaeological sites:

Given Mongolia's rich history, it is reasonable to predict that hundreds of thousands of archaeological sites exist within the country that have yet to be discovered, however techniques continue to be applied to confirm where these can be reasonably predicted to occur. A summary of the key known archaeological resources in Mongolia include:

**Table 6.51 Chronological Summary of Known Archaeological Resources**

Cultural Period	Age	Site Type	Geographic Extent (known sites)
Lower Palaeolithic	ca. 800,000 to 100,000 years ago	Stone tools	Bayankhongor <i>aimag</i> , Umnugovi <i>aimag</i> , Bayan-Ulgii <i>aimag</i>
Middle Palaeolithic	ca. 100,000–40,000 years ago	Several small campsites and settlements	Bayankhongor <i>aimag</i> , Umnugovi <i>aimag</i> , Uvur-Khangai <i>aimag</i>
Upper Palaeolithic	ca. 40,000–12,000 years ago	Mostly stone tool production sites	Bulgan <i>aimag</i> , Khentii <i>aimag</i> , Uvur-Khangai <i>aimag</i>
Mesolithic Period	ca. 12,000–8,000 years ago	Various Mesolithic stone tools	Most regions of Mongolia
Neolithic Period	ca. 8,000–3,000 years BCE	Various Neolithic stone tools and pottery	Most regions of Mongolia
Bronze Age	Began ca. 2000 BCE	Remains from bronze smelting activities, slab graves, Khirgisuur tombs, deer stones, rock painting and rock art	Throughout Mongolia
Chandmani Culture	early Iron Age	The special graves indicating a unique tribe	Chandmani Uul near Ulaangom <i>soum</i> in Uvs <i>aimag</i>
Pazyryk Culture	6 <sup>th</sup> to 2 <sup>nd</sup> century BCE	Graves with highly crafted artefacts	Altai Mountains of Mongolia
Xiongnu Period	3 <sup>rd</sup> century BCE	Graves (elite and common), large urban settlements, and rock art.	Throughout Mongolia
Turkic Period	6 <sup>th</sup> to 10 <sup>th</sup> century CE	Memorial monument complexes that were built for emperors and for commoners, stone stelae covered with runic script, architectural objects, drawings and inscriptions on rocks and other components, as well as burial sites and graves.	Prevalent from the Khentii Mountains to the Altai Range

Note: BCE – Before Common Era, CE – Common Era.

### Paleontological Resources:

As with having a rich archaeological, Mongolia has a rich paleontological resources. There are many paleontological sites of worldwide renown in Mongolia. Paleontological localities like Baishin Tsav, Khuurai Tsav, Amtgai, Urlub Khudag, and Shar Tsav constitute the main evidence of animal (in particular, dinosaur) and plant evolution dating back to the early Late Cretaceous Period of the Mesozoic Era, nearly 145 million years ago. Dinosaur fossils and other remains found in this region prove that Central Asia was the centre of dispersal of the hadrosaurid super family of “duck-billed” dinosaurs, which lived widely in North America as well. There is also potential for significant fossil remains in later

geologic units extant in Mongolia (e.g., Quaternary Period, 2.4 million years ago to present), which could provide insight to evolution and adaptation of species living during this period.

### **Intangible Heritage:**

In addition to a rich archaeological heritage, Mongolians also have a rich intangible heritage, comprised of traditional music, songs, craftsmanship, language, religious practices, nomadic herding, horsemanship, and other sports, some of which have been recognised internationally by UNESCO. Although there is no national law or act particular focusing on the intangible cultural heritage in whole, there are national laws regarding the protection of cultural heritage. The fundamental legislative act is the Law on the Protection of the Cultural Heritage, approved in 2001.

UNESCO-listed national representative intangible heritage includes:

- Traditional horse-head fiddle art (2003);
- Mongolian long folk song (2005);
- Mongolian throat singing folk art (2010);
- Traditional national festival – Naadam (2010);
- “Hawking” and Eagles hunting rituals (2010).

Further, the UNESCO list of intangible heritage urgently in need of protection as follows:

- The Traditional folk dance – bielgee (2009);
- Mongolian ballads (2009);
- Mongolian traditional art of bagpipe music (2009);,
- Traditional method of performing the long song by Mongolian flutists length songs to play - closed breath (2011);
- Mongolian traditional home crafts, rituals (2013);
- Mongolian calligraphy (2013);
- Ankle shooting – 2014.

The list of UNESCO World Documentary Heritage comprises the following:

- Kanjur written with 9 precious stones (2013);
- Altan Tobchi: Golden History (2011);
- Mongolian Shunkhan Danjuur (2011).

Lastly, the list of UNESCO World Natural Heritage Sites in Mongolia includes:

- Uvs Nuur Basin (2002);
- Orkhon Valley Cultural Monument (2004);
- Altai rock art complex (2011).

#### 6.8.3.2 Mongolian Cultural Heritage Administration

The Ministry of Education, Culture and Science administer the nation's cultural heritage. In turn, the Mongolian Academy of Sciences – Institute of Archaeology (MASIA) and Mongolian Academy of Sciences – Institute of History and Ethnography (MASIHE) are key institutions engaged in the research, documentation and preservation of key items of cultural heritage. The main purpose of the Mongolian Academy of Sciences is establishment of the Mongolian Science Center as a network of capable theoretical research institutes at the international level to reach the social sustainable development objectives.

#### 6.8.4 **Tangible Cultural Heritage**<sup>176</sup>

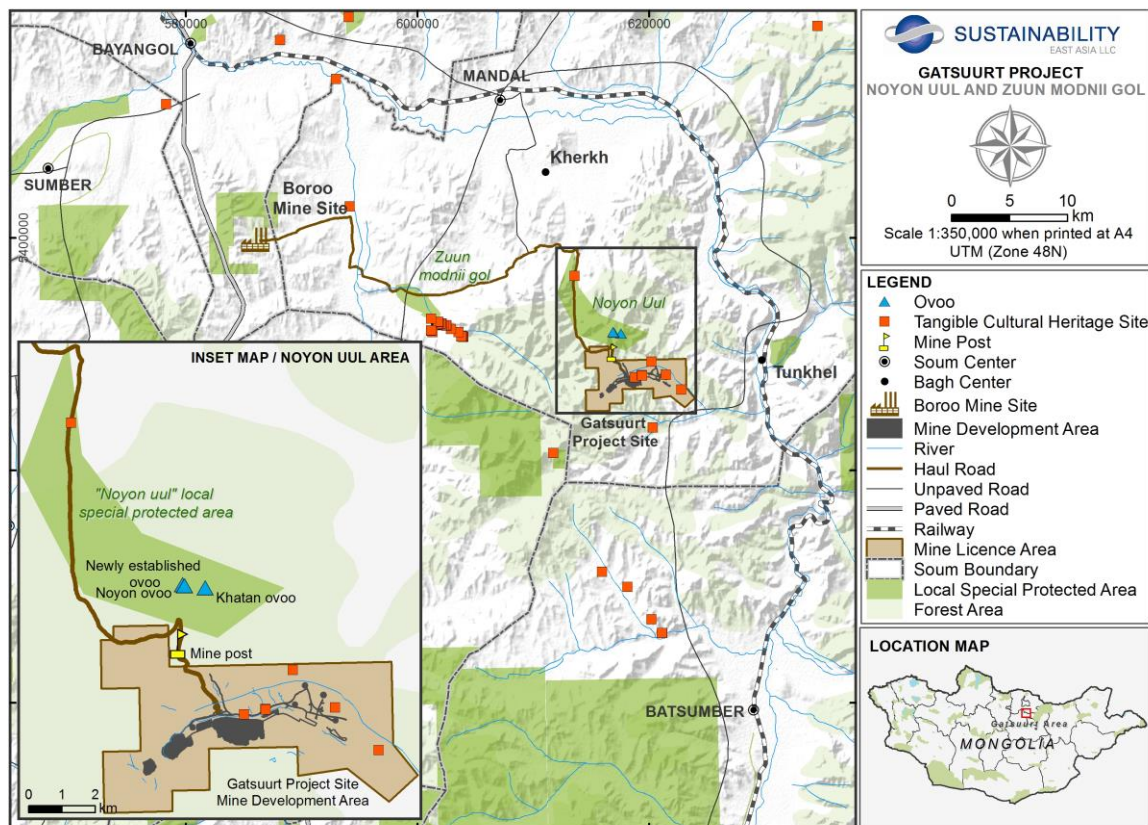
At present, Mongolia does not have any specific standard approaches or guidelines for evaluating the importance of physical cultural heritage sites. Studies in the Project area have identified sites and artefacts (approximately 200 artefacts identified since 1925). These are mostly in Mandal *soum* around two locally protected areas: Zuun Modnii *gol* (river) and Noyon *uul* sites. There are 2 Nationally Protected Sites (Tuijin Nars and Khan Khentii classified special state protected area) and 30 Locally Protected Sites (two of which intersect with the Gatsuurt road: Zuun Modnii *gol* and Noyon *uul*). Sites are in varying states of protection and preservation.

Within Bayangol *soum* a Cultural Heritage census was undertaken in 2014 to register all cultural heritage items, with a focus on Intangible Cultural Heritage. Five (5) tangible heritage sites from the Mongol Era (12<sup>th</sup>-18<sup>th</sup> century) were recorded in a recent (2015) archaeological study conducted by the Mongolian Academy of Sciences in the Gatsuurt Mine License Area. These sites have not been recommended by Mongolian Academy of Sciences for any further investigation. The locations of key cultural heritage sites are illustrated in Figure 6.55. Descriptions are not provided, in order to ensure security of the cultural heritage resources.

<sup>176</sup> **EBRD Performance Requirements:**

The EBRD's policy on tangible and intangible cultural heritage is set out in PR 8<sup>176</sup>. The objectives of PR 8 are:

- To support the protection and conservation of cultural heritage;
- To adopt the mitigation hierarchy approach to protecting cultural heritage from adverse impacts arising from the project;
- To promote the equitable sharing of benefits from the use of cultural heritage in business activities; and
- To promote the awareness of, and appreciation of, cultural heritage where possible.



**Figure 6.55 Cultural Heritage sites located in the Gatsuurt Project Area of Influence**

Selenge *aimag* has the following traditional sacred places under *aimag* protection:

**Noyon Uul**, located in Mandal *soum* is a natural, historical and culturally significant mountain range. Archaeological findings brought back in 1924 from the Noyon Uul area are now stored in St Petersburg Hermitage Museum. The latest scientific study on Noyon Uul heritage, ancient history and culture was carried out in 2006. There are 500 known ancient graves in the areas surrounding of Noyon Uul. The Noyon Uul area is spread over a 90,000ha area, 80,000ha of which are in Mandal *soum* and the remaining 10,000ha in Bornuur and Batsumber *soums* of Tov *aimag*. Noyon Mountain in the Noyon Uul area is associated with a number of key cultural heritage sites, namely the 'Three Friends Cave', 'Ikh Mandal', 'Shirhentseg Mountain' and 'Bichigt Khad'. From local knowledge to an area of national importance, investigations commenced with researchers from the Hermitage conducting archaeological research in 1920s, where they excavated one of Mongolia's first Hunuu era cultural artefacts at the Sujikhtai site. Figure 6.56 shows some of the artefacts excavated from Noyon Uul.

Noyon uul special protected area is located approximately 7km from the Gatsuurt Project mine site and outside of the Mine Licence Area. The location of the Gatsuurt Project mine site does not impede public access to Noyon Uul, or impact on the existing use of worship sites at Noyon uul in any other manner. Furthermore, the road does not directly disturb the workshop sites, which are currently being accessed from this road by foot (see Figure 6.55 which shows cultural heritage sites in relation to the Gatsuurt Project and the road, as well as further detail on the boundaries of the Mine Licence Area and the road in relation to Noyon Uul).





**Figure 6.56 Archaeological findings from the 1926 – 1927 excavation at Noyon Uul<sup>177</sup>**

**The People's Revolution Historical Structure**, located in Altanbulag *soum* consists of the Revolution Museum; Our National First primary school; the First Bank; the Court House; Square Monastery; as well as the First House Military History and Memorial Sites. In 2013, the People's Government lodging of Altanbulag Museum was restored.<sup>178</sup>

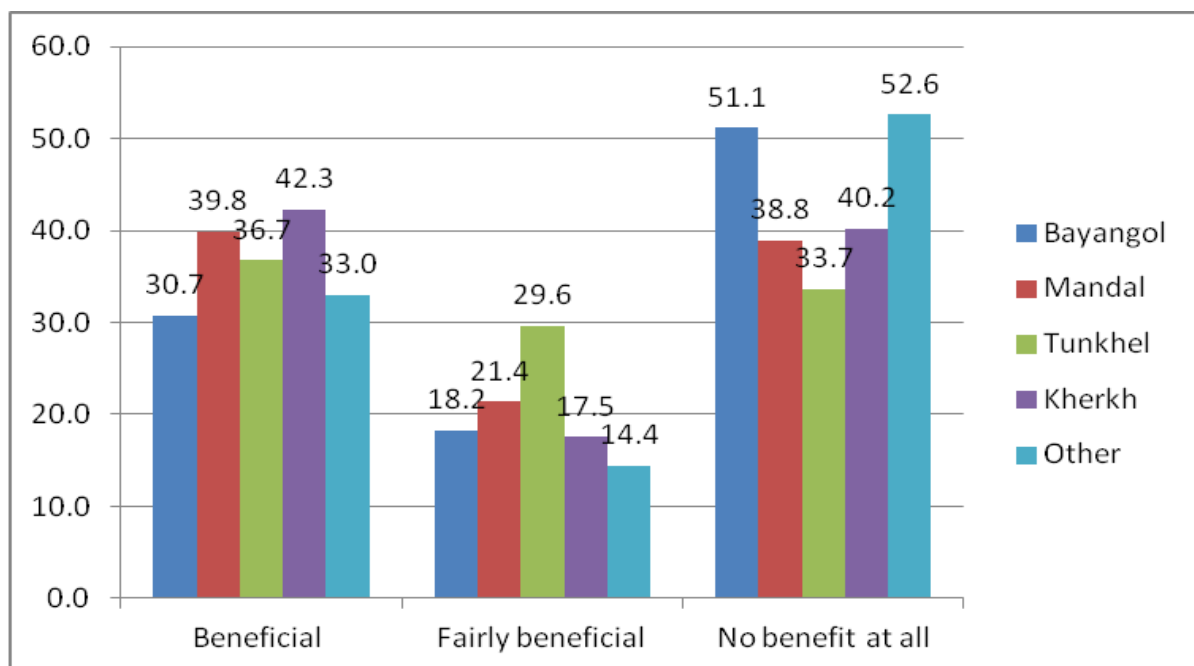
**Amarbayasgalant Monastery**, located in Baruunburen *soum* territory in the valley of Burenkhaan mountain. The monastery was established to distribute the Buddhist religion among Mongolian according to the Manchu Government policy. Security cameras have been installed to better preserve the site.

**Tujiin Nars State Protected Area** is a natural park with an area of 65,549ha, located in Altanbulag and Shaamar *soums* of Selenge *aimag*. Fire and plunderers significantly damaged the area. In recent years, about 7,500ha of destroyed land has been reclaimed, which accounts for around 40-50% of the natural restoration process. Tujiin Nars has a unique natural formation and is considered the south-eastern end of the great Siberian pine forest region, in addition to a continuation of the Khentii mountain ranges.

<sup>177</sup> Official Mongolian Archaeological Statements Regarding the Noyun UI Sites. 2012. <http://news.gogo.mn/r/83991>

<sup>178</sup> Selenge *aimag* Education and Cultural Department.

Unique Mongolian natural and cultural heritage sites are key factors for diversified economic growth through development of the sustainable tourism industry. However, many of the sites have become the victims of poor management and unregulated exploitation. The sustainable management of cultural heritage sites by local Government for the benefit of local communities and visitors is a key challenge Mongolia-wide. Respondents in the Project area are moderately engaged with local cultural heritage objects and practices. When asked whether cultural heritage benefits their *soum/bagh*, 42.3% of Kherkh *bagh* and 36.7% of Tunkhel *bagh* participants answered, "local cultural heritage is significantly beneficial for the *soum*". On average, the majority of respondents indicated that they do not receive any benefit at all from cultural heritage. This was felt particularly in Bayangol *soum*, where over half of residents feel they do not receive any benefits from cultural heritage (51.1%), compared to 30.7% who feel they do.



**Figure 6.57 Does cultural heritage benefit respondents' *soum*, percentage**

### 6.8.5 Intangible Cultural Heritage

In 2010 a national census of all Mongolian cultural heritage was conducted and a list of significant cultural heritage compiled. This census is planned to be updated in 2015. The following are key intangible cultural practices in Selenge *aimag*.<sup>179</sup>

- Once every 4 years Selenge *aimag* organise the **5 Khan Mountain Worshipping**, which has very specific customs and rituals. There are many elements associated with the worship of sacred mountains that have been preserved and continue to thrive, such as chanting sutras and sharing folk knowledge, legends, benedictions, odes, epics, folk songs, folk art and performing art.
- **Noyon Mountain Worshipping**, (not related to the above 5 Khan Mountain Worshipping), occurs as well. Worshipping of Noyon Mountain, according to households living in the area,

<sup>179</sup> Advisor of Aimag Citizen Representative of Hural.

occurred before the socialist era.<sup>180</sup> The idea of worshipping the mountain once again was initiated during the transition period. There are a number of sites of worship on Noyon Mountain, rituals for which are often performed at *ovoos*<sup>181</sup> located on the mountain. Further, shamans also use the area to worship several times a year, and the fieldwork in the area revealed that there are also taboos and myths associated with the mountain (see box below). The *Ethnographic Report of the Intangible Cultural Heritage in the Region of Gatsuurt Mining Area* (conducted by Sustainability in partnership with The Institute of History and Archaeology) identified that worship rituals performed at Noyon Mountain are often flexible, or less associated with a specific place on the mountain than with the mountain itself. Specifically, it was found that “in the past, Noyon Mountain was worshiped at the front side or at the side of the Balj mountain, but recently a mine [not related to Centerra’s projects] opened there and thus the ritual has been broken and worship is now occurring in the north.” The building of the Gatsuurt haul road has also provided greater accessibility to the mountain for public, as well as Project purposes, which includes mountain worship. There are two known areas used for worshipping near the public road. The first is a longstanding site, access to which has been made more convenient through construction of the road. The second site was facilitated by the road construction (i.e. it was not associated with worship rituals prior to the haul road being developed).

“Thus, it is noticed that there are some taboos [associated with Noyon Mountain]. For instance, native citizens here say that in the woods around the Noyon mountains a fire has started several times but luckily when it reaches to the Noyon mountain it is suddenly interrupted by rain or snow. This is the mark of how people respect Noyon mountain and also how the Mountain resists negative effects and actions occurring.”

*Ethnographic Report of the Intangible Cultural Heritage in the Region of Gatsuurt Mining Area*, Sustainability East Asia LLC in partnership with The Institute of History and Archaeology

<sup>180</sup> Sustainability East Asia LLC & The Institute of History and Archeology, Mongolian Academy of Sciences. 2015. *Ethnographic Report of the Intangible Cultural Heritage in the Region of Gatsuurt Mining Area*, Mandal Soum of Selenge Province, Mongolia.

<sup>181</sup> The *ovoos* (also known as *oboo*) structures are usually dedicated to mark natural elements that have spiritual significance, such as mountain spirits, sacred trees, lakes, or springs. *Ovoos* form many functions within the community from their use as religious worship sites to sites for prayer and guidance during natural disasters (fire, *dzud*).





**Figure 6.58** Worshippers coming to the Noyon Mountain sacrificing ceremony early in the morning, June 2015<sup>182</sup>



**Figure 6.59** Newly created Ovoos by shamans on Noyon Mountain<sup>183</sup>

<sup>182</sup> Ibid.

<sup>183</sup> Sustainability East Asia LLC & The Institute of History and Archeology, Mongolian Academy of Sciences. 2015. Ethnographic Report of the Intangible Cultural Heritage in the Region of Gatsuurt Mining Area, Mandal Soum of Selenge Province, Mongolia.





**Figure 6.60 Khatan Ovoo worshipping site on the top of Noyon Mountain<sup>184</sup>**

- **Harmony Tree Festival**, which is organised together with Buriat (from Russia) people once every two years. This festival occurs alternatively in Russia and Mongolia to promote peace and harmonious relations in the border area and sharing of cultural experiences and activities. The locations for the actual festival vary within both countries. It does not always take place in Selenge *aimag* when in Mongolia;
- **EejTree (mother tree) Sacred Place Worshipping**, every year Mongolian devotees gather on the 1st April to worship the *Eej* tree. The *Eej* Tree Sacred Places Worshipping takes place in Sukhbaatar *soum* at the site of the *Eej* tree.<sup>185</sup>
- **Spring Festival for Herders and Crop Farming**, every spring, as a tradition in the Sukhbaatar *soum* of Selenge *aimag* the *aimag* Governor's Office organises a Spring Festival to celebrate the approach of spring.
- **Soums cultural and economic event**,<sup>186</sup> held annually, each *soum* does a presentation during this event, the purpose of which is *soum* economic and social development; improvement of access to culture, arts and tourism services; supporting SMEs; and promotion of local products.
- **Harvest festival** is held each year in November by Selenge people to celebrate the harvest and Selenge's status as a prime agricultural region in Mongolia.

<sup>184</sup> Ibid.

<sup>185</sup> Seven Wonders of Selenge aimag.

<sup>186</sup> [http://www.selenge.gov.mn/index.php?option=com\\_content&view=article&id=1240:2014-06-30-01-54-38&catid=104:sus&Itemid=162](http://www.selenge.gov.mn/index.php?option=com_content&view=article&id=1240:2014-06-30-01-54-38&catid=104:sus&Itemid=162).

- **Gongoriin Bumba Worshipping Ceremony** and **Tsam Traditional Dancing** is held every July at Amarbayasgalant Monastery. The Gongoriin Bumba worshipping rituals are only conducted at Amarbayasgalant Monastery, which is located in Baruunburen *soum*. Gongoriin Bumba is an "enrichment urn," worshipping of which is believed to increase physical endowment and property abundance.
- **"We are Selenge Offspring" Festival** is organised in accordance with the Selenge *aimag* Governor's Directive # A / 357. This youth festival is to encourage children to inherit the heritage of folklore, develop their talents in traditional Mongolian cultural practices and drive national pride and cultural customs.

There are also a number of national programs on the protection of intangible cultural heritage that have been implemented across the *aimag*, including:

- Protection and Restoration of Historical and Cultural Tangible Memorial Assets;
- Support Community Traditional Art;
- Classic Art; and
- Horse String Instrument – Traditional Long Song.

To be kept alive, intangible cultural heritage must be relevant to its community, continuously recreated and transmitted from one generation to the next. The above-listed events are one mechanism through which cultural heritage preservation is supported by encouraging and assisting with the transferal of knowledge, skills and meaning, with the intent of reinforcing and safeguarding the diverse and varied circumstances of intangible cultural heritage that are necessary for the continuous evolution and (re)interpretation of intangible cultural heritage in Mongolia. The level of community participation in these national programs was unable to be established.

#### 6.8.5.1 Cultural Institutions

After the democratic transition in the 1990s state investment in cultural heritage preservation and protection fell sharply. With the decline in funding, cultural institutions and buildings quickly degenerated. This was compounded by the population influx from remote areas urban areas, leading to the loss of cultural heritage knowledge and institutions, as well as sharp employee turnover and staff shortages in rural areas.

In Selenge *aimag* there are a number of cultural institutions that deliver cultural services to the population, including:

- 21 cultural centres;
- 2 public libraries;
- 1 *aimag* museum (located in Sukhbaatar *soum*);
- 1 cultural information centre;
- 6 *soum* libraries; and



- 32 school libraries.<sup>187</sup>

In 2014 Government has committed to restoring the cultural centres at an *aimag* and *soum* level, funded by the *soum*. Commencement of this program coincided with the census of national cultural heritage, on 1 May 2015.

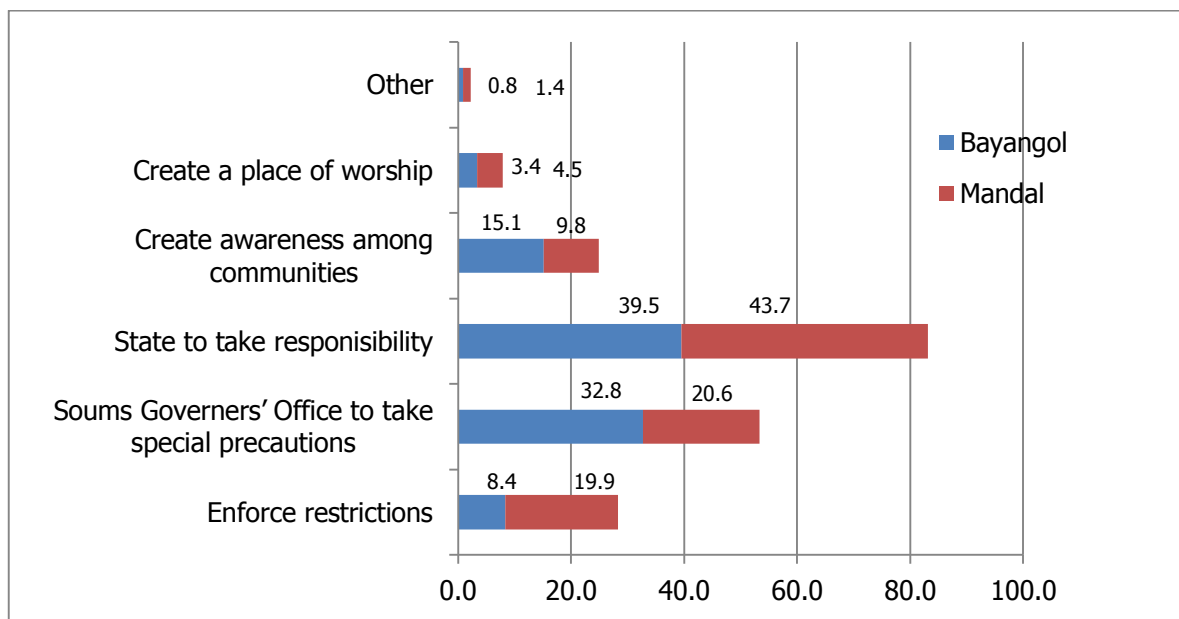
Cultural heritage is a significant source of employment for professional and non-professional roles. There are 161 cultural heritage workers staffing cultural heritage institutions in Selenge *aimag*. According to the provision of professional staff at the *aimag* level, cultural centres suffer from a lack of specialist skills. The scarcity of technically and professionally trained cultural heritage specialists (particularly those with tertiary qualifications) is a key issue faced by Mongolia, not only Selenge *aimag*. The *aimag* level cultural centres have 65 employees and 42% of them are non-professional employees (i.e. do not have a professional qualification in a cultural heritage discipline). At the *aimag* level, school libraries have 32 staff, including 2 professional staff, 7 trained staff and 23 non-professional staff. However, the field suffers from a lack of specialist skills. The scarcity of technically and professionally trained cultural heritage specialists (including those with PhD qualifications) is a key issue. This low number of trained, professional heritage resource specialists has a direct bearing on how much area can be surveyed for archaeological and paleontological sites during any given year, as well as conduct excavation of sites as needed.<sup>188</sup> To address this issue in Selenge *aimag* cultural institutions, the number of enrolments at the University of Culture and Art has been increased by 2-3 students each year. Further remedying of staff shortages has, since 2003, seen a total 17 cultural and art workers including the library director and head of the museum were provided with between 3 and 21 days of vocational / refresher training sponsored by the Ministry of Education, Culture and Science.

#### 6.8.5.2 Local Opinions on Cultural Heritage

Opinions in the Project area differ on cultural heritage significance, protection and responsibility. In determining local opinion on the protection and management of cultural heritage, the household survey discovered that 57.6% of Mandal *soum* respondents and 51.6% of Bayangol *soum* respondents thought that cultural heritage should be safe under State protection.

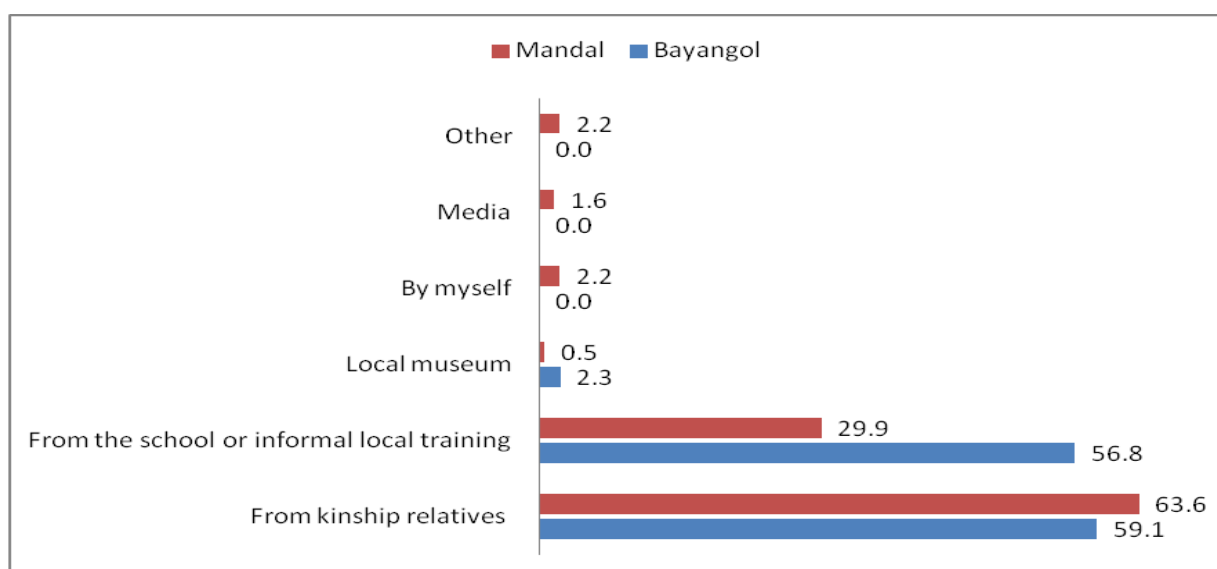
<sup>187</sup> [http://selenge.gov.mn/index.php?option=com\\_content&view=article&id=252%3A2011-03-04-19-29-44&catid=74%3Aub&Itemid=216](http://selenge.gov.mn/index.php?option=com_content&view=article&id=252%3A2011-03-04-19-29-44&catid=74%3Aub&Itemid=216).

<sup>188</sup> Sustainability East Asia LLC. 2014. Strategic Environmental and Social Assessment of the Mining Sector in Mongolia.



**Figure 6.61 Public view toward protection of historical and cultural heritages, percentage**

Oral traditions are significant in the project area. This household survey asked the question: "from whom have you found out about local historic, cultural relics and items," Both Mandal and Bayangol respondents indicated that the major source of information on cultural heritage is relatives and family members. This indicates the strong sense of cultural heritage within households and oral history traditions in Mongolia. The second major source of information on cultural heritage is school and informal training. That most people are obtaining knowledge and information on cultural heritage from family and informal training reveals the lack of capacity (both professional and physical) of local institutions to meet the information and educational needs of communities.



**Figure 6.62 Source of cultural heritage information, percentage<sup>189</sup>**

<sup>189</sup> More than one answer to this question could be given, hence percentages add up to over 100%.

Furthermore, the respondents in the household survey indicated that professional organisations need to undertake detailed research on cultural heritage, improve records and databases so that they can guide mining companies in respecting, restoring and protecting cultural heritage and traditions and create the necessary legal environment within which this can be delivered effectively. Furthermore, participants indicated that a key part of capacity building to protect and maintain cultural heritage is increasing the knowledge of local people and providing more access to information.

#### **6.8.6 Conclusion**

The key issues and themes that emerged in relation to cultural heritage can be summarised as follows. The major sources of information on cultural heritage in the Project area are relatives and family members. This indicates the strong sense of cultural heritage within households and oral history traditions in Mongolia. The second major source of information on cultural heritage is school and informal training. That most people are obtaining knowledge and information on cultural heritage from family is consistent with the strong oral history traditions in Mongolia, however it does also point to a lack of capacity (both professional and physical) of local institutions to meet the information and educational needs of communities. Indeed, cultural centres suffer from a lack of specialist / professional skills in the Project area. The scarcity of technically and professionally trained cultural heritage specialists (particularly those with tertiary qualifications) is a key issue faced by Mongolia, not only Selenge *aimag*.

Respondents in the Project area are moderately engaged with local cultural heritage objects and practices. On average, the majority of respondents indicated that they do not receive any benefit at all from cultural heritage. This was felt particularly in Bayangol *soum*, where over half of residents feel they do not receive any benefits from cultural heritage (51.1%), compared to 30.7% who feel they do.

Worship of Noyon *uul* (mountain) is a key intangible cultural heritage practice in the Project area. According to households living in the area, worship of the mountain occurred before the Socialist era, but was then forbidden during communist rule (1920s to 1990s). The idea of worshipping the mountain once again was initiated during the transition period. Worship rituals are performed at various *ovoos*<sup>190</sup> located on Noyon Mountain. Further, shamans also use the area to worship several times a year, and fieldwork in the area revealed that there are also taboos and myths associated with the mountain.

Cultural heritage sites and artefacts are mostly located in Mandal *soum* around two locally protected areas: Zuun Modnii *gol* (river) and Noyon *uul* sites. There are 2 Nationally Protected Sites (Tujiin Nars and Khan Khentii classified special state protected area) and 30 Locally Protected Sites (two of which intersect with the Gatsuurt road: Zuun Modnii *gol* and Noyon *uul*). Sites are in varying states of protection and preservation.

<sup>190</sup> The *ovoo* (also known as *oboo*) structures are usually dedicated to mark natural elements that have spiritual significance, such as mountain spirits, sacred trees, lakes, or springs. *Ovoos* form many functions within the community from their use as religious worship sites to sites for prayer and guidance during natural disasters (fire, *dzud*).

## 7. SOCIAL IMPACT ASSESSMENT

### 7.1 SOCIAL IMPACTS AND MITIGATION MEASURES

The following chapter discusses the socio economic impacts of the project using the methodology described in Section 4. The Project is analysed over the life of the Project: Construction, Operations and Closure.

The Mongolian Ministry of Environment and Green Development (MEGD) (or its predecessor agency the Mongolian Ministry for Nature, Environment and Tourism (MNET)), has previously assessed and approved DEIAs for Project components that included, as mentioned previously, mining activities, the BIOX® plant, Tailings Storage Facility and the road.

These considered environmental impacts and mitigation measures including water, soil, air, biodiversity, and waste, with brief discussion relating to social aspects. This report discusses environmental receptors, impacts and mitigation measures only as they relate to human population impacts, or community concern raised about these issues as raised during consultation.

This section is a summary of identified potential social / socio-economic impacts that might occur during Project construction, operations and closure phases. The potential impacts are presented in summary in Section 9. The identified impacts are grouped by potentially affected receptor / component. For each receptor, the potential impact characterisation is provided. The remaining columns present the potential impact significance rating before control or mitigation measures, a description of the mitigation measures, and a potential impact significance rating after mitigation measures. Descriptions of the potential impacts are included in Sections 7.1.1 to 7.1.6. In cases where impacts of the Project phases differ, they are presented separately for construction, operations or closure phases.

#### 7.1.1 Economy

Economic impacts will be felt as a result of different drivers from the Project at each of the national, regional and local levels. Effects will span all phases of the project and predominantly will be due to the beneficial effects of project related taxes and royalty payments, direct and indirect employment and procurement of goods and services. With the exception of local-level, sustainable development Project investments, decline of many of these economic benefits are anticipated to coincide with mine closure. Key stakeholders at all phases include: the Government of Mongolia, direct and indirect beneficiaries of project expenditure, and jobseekers and employees.

##### 7.1.1.1 [Impacts](#)

##### [Employment](#)

#### **Direct, Indirect and Induced Employment**

Employment will be generated through direct, indirect and induced employment opportunities overall project phases, including:

- Direct opportunities are those jobs with the Company, both permanent and temporary;
- Indirect opportunities are those jobs with the contractors and suppliers; and

- Induced employment arising from increased disposable income and demand for additional goods and services.

The Project will require highly skilled, semi-skilled and unskilled workers to undertake construction, operational and closure duties. The Project will create positive economic impacts as a result of direct wage payments to employees and contractors. There will be a small construction workforce required of a peak workforce of 300 people for 15 months, as the bulk of the mine processing facilities are already in place at Boroo. However, a number of short-term contract labour will be required to construct facilities including the TSF lift, and a small, specialist workforce will be required to construct the BIOX® facilities. Additionally camp services staff will be required to support this construction workforce. In some cases, a number of staff will comprise the same population (i.e. construction workforce will go on to employment during operations).

The Project will create about 1,000 jobs in total, and 487 of them will be permanent employees of the Company.<sup>191</sup> These will be created for a mix of skilled, semi-skilled and low / unskilled workers during the operational phase of the mine, as shown in Table 7.1. The number employed will be more than the peak of 300 engaged during construction phase, and these jobs will be longer term. The duration will be for the life of the Project for those employed during the operational phase and the frequency will be continuous.

The total value of direct benefits to Mongolia from Gatsuurt in the form of salaries to national employees will be 147.8 MNT billion<sup>192</sup> over the life of the Project.

**Table 7.1 Direct Employment with CGM**

Permanent positions with CGM	Number of positions
Finance and management	24
Service and maintenance	78
Engineering and technical staff	77
Security officers	30
Equipment operators	116
Site medical staff	8
Administration and service staff	92
? (this was cut off the table in the ppt)	62
<b>TOTAL</b>	<b>487</b>

The balance of indirect employment opportunities will be provided through contractors, in areas as indicated in Table 7.2 below. Some of the contractor roles will be seasonal or temporary, as indicated.

<sup>191</sup> Gatsuurt Project Overview March 2015.

<sup>192</sup> Gatsuurt Project Overview March 2015.

**Table 7.2 Indirect Employment with Contractors**

Field of service provided by contractors	Number of positions (estimated)
Catering Services	120
Security	70
Ore haulage	96
Personnel transportation	10
Repairs and maintenance	56
Reclamation (seasonal)	30
Warehousing (seasonal)	10
Tailings dam construction (temporary)	120
<b>TOTAL</b>	<b>512</b>

The amount of induced employment arising from increased disposable income and demand for additional goods and services is harder to estimate however is considered a positive impact of the project. With a small construction workforce, induced employment will more likely occur during the operations phase with increased demand, and decline with Project closure. Local job creation and investment in local businesses, infrastructure and services will also likely lead to induced job creation as a result of service firms (for example: restaurants, domestic services, vehicle maintenance) that will be developed to support the mine and its workforce. Based on experience of Boroo Gold's operations, it could reasonably be expected that this job creation would be focused on the local services sector. A conservative multiplier<sup>193</sup> of 1 operational mine positions (contractors and employees) to 0.1 induced jobs suggests that around 100 additional jobs will be created to serve the needs of the employees and contractors of the Project.

A lower multiplier has been chosen based on experience from Boroo Project, which showed that greater disposable incomes of the Boroo workforce meant that local employees were out-migrating over time, from *soum* residency to Darkhan city and then on to Ulaanbaatar, as purchase of apartments became affordable with secure incomes and access to credit. Further, relative to the existing population size in Zuunkharaa (25,689 people), it is possible that the portion of the workforce resident that will come from this location would be able to have new demands serviced from within the existing *soum* businesses providing goods and services.

Expectations of employment are high, particularly among those people that worked at the Boroo Gold Project who have existing and transferrable skills to the Gatsuurt operation, as well as of those who are citizens of Mandal *soum* (in which Gatsuurt is located)<sup>194</sup>. The company has committed to prioritising local employment where minimum skills requirements are met, as well as requiring this same policy to be applied by its contractors. This is considered a beneficial impact for the Project Area and would have a positive impact on unemployment levels in each of Baruunkharaa, Zuunkharaa, and Tunkhel. Consultation with the community revealed that many consider they can't meet the minimum requirements, but believe that the contractors have lower minimum requirements which will enable their employment.

<sup>193</sup> Estimates in the sector indicate that for every job created directly by an extractives industry operator, there are between one and four jobs created. Reports on this figure vary. Anglo American has advised its sites that induced employment should be assumed to be 10 to 20 per cent of the sum of direct and indirect unemployment.

<sup>194</sup> Boroo Social Closure Impact Assessment, 2014.



The experience BGC had in operating the Boroo mine suggests that recruitment of suitably qualified workforce will enable successful implementation of the policy of prioritisation of local recruitment. The Company has an option of retaining / recruiting existing skilled supervisor-level staff from the Boroo Project to provide on-the-job training and supervision at the Gatsuurt Project. Past BGC employees tend to mid-late career as much of the BGC workforce already had some career experience with other mines that had been operating prior to 2004 (for example, Erdenet Copper)<sup>195</sup>, hence are sufficiently experienced to develop new staff. These supervisory level staff will enable individuals from the Project Area – who bring high levels of literacy, secondary schooling or TVET training experience, such as the 44 heavy equipment mechanics currently studying at the Mandal TVET institution – the opportunity to apply their skills in a well-recognised and respected workplace. While there are limited training options for the mining sector in the Project Area, TVET schools and universities in Darkhan, Erdenet and Ulaanbaatar are now well experienced in preparing students in work readiness, however on-the-job training will remain an important means of supporting citizens of the Project Area who have not had access to such training to develop their vocational skills. During consultation, the *soum* governments indicated their support for provision of training for the low-skilled, unskilled and unemployed from the local area by the Project.

It is possible that the contracted mining and haulage company will not follow the Company's local labour hiring policies or practices, which has the potential to undermine key social performance aspects of the Project and its intended benefits. Mining and haulage is the area particularly noted as this is where a large number of contractors will be working and so implies a greater potential for negative impact.

Unfulfilled expectations could potentially cause discontent locally, further compounded by a potential pool of jobseekers who have been laid off other mining projects nationally with the downturn in the industry across Mongolia, which will increase competition for employment opportunities. These jobseekers will not necessarily migrate to the Project Area given its proximity to Ulaanbaatar, however it is quite possible that this group of job seekers would have gained skills in other mining projects, which will be an advantage in seeking positions within the Project. As such, potentially they could out-compete local job seekers. The need to ensure local employment through establishment of criteria of duration of residency in the local area has been raised by *soum* government during consultation.

CGM anticipates no more than 4 long-term expatriate staff during operations in executive/senior management positions at the Gatsuurt Project; the model for nationalisation of roles as was applied in the Boroo Project will be applied at Gatsuurt, thereby minimising opportunities for unmet expectations through role nationalisation.

The closure phase will be most significant for negative potential employment impacts in the Project Area with a decline in direct, indirect and induced employment. Without mitigating diversification of the economy, closure will result in a contraction of the local economy and a loss of employment. The impact on employment will be negative, direct and indirect. Job losses will occur along the supply chain as well as in induced employment because of the reduced demand for services. The geographic extent will be at the *soum*, *aimag* and to a limited degree national and international (given CGM operates with very

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<sup>195</sup> Boroo Social Closure Impact Assessment, 2014.

few expatriate roles). The magnitude and sensitivity of the impact will be medium. The duration will be long term and continuous, extending beyond the closure period. This impact will definitely occur.

Anticipated direct, indirect and induced employment related impacts are summarised in Table 9.1 and are as follows:

- A peak construction workforce of 300 people, followed by operational phase, long term<sup>196</sup> high quality jobs created for the life of mine, estimated at 482 direct workers and approximately 500 indirect jobs.
- Induced job creation of approximately 100 jobs in services and supply to meet demands from the Project workforce.
- Reduction in direct and indirect employment due to retrenchments prior to and during the mine closure phase, and reduced induced employment due to lower demand for goods and services by the mine workforce as these positions decline with mine closure.
- Risk that contacted mining and haulage contractors do not use local labour or follow Centerra labour practices.
- Risks of unmet community expectations for jobs due to a lack of suitability of local candidates, especially where there is high competition for a specialised workforce from outside the Project area, or due to social conflict creation should non-residents be or perceived to be prioritised for roles above members of the local community.

### *Labour and Working Conditions*

The Gatsuurt mine will offer international standard working conditions for a predominantly national workforce, as was the case with the Boroo Project. BGC employees have reported that their experience working in the company was very positive overall, particularly noting the high standards employed at the company, the safe working environment and the opportunities this afforded workers for improving their skills to a high level<sup>197</sup>. This reputation has meant that, with the exception of the 2012 labour market conditions, CGM has been able to secure and retain appropriately skilled workers for its operations. Development of a number of mines in 2012 meant that workers had numerous employment options and at inflated salary levels and the reputation that BGC workers have for applying high standards in their work meant that competing companies sought them. Current market conditions have slowed, which suggests that suitably qualified workers are likely to be available, however policy changes at the national Government level, or commodity prices, are two external factors which can rapidly change this situation, the influence of which would be felt keenly in being able to deliver on schedule at the Project level.

The history of the Boroo project includes very limited experience of labour disputes (one in the past 7 years). The potential exists for engagement with the union by BGC staff to cause disruption to Project scheduling, particularly in instances where collective agreement conditions differ between Boroo and Gatsuurt sites and past compared to new employees. While not likely, the consequences for Project scheduling or delays could potentially have significant impacts on the overall Project timeline.

<sup>196</sup> Note: Life of mine is referenced as 'long term' given its duration (11 years operational).

<sup>197</sup> BGC Social Closure Impact Assessment field research (2013).

Anticipated impacts related to labour and working conditions are summarised in Table 9.1 and are as follows:

- Potential inability to find a sufficiently skilled workforce; and
- Potential for labour disputes.

### *Investment and Financial benefits*

#### **Economic Investment**

The major components of the economic investments from the Gatsuurt Project to the Mongolian economy will comprise: Local purchases, Government taxes and royalties, and salaries, which would apply predominantly at the construction and operations phases of the Project and to a lesser extent in Project closure.

#### **National level Investment and Direct Benefits**

The construction and operations phases of the Gatsuurt Project would continue the significant, positive injection into the Mongolian economy that the Project has already brought. It is important to note that the change from informal small-scale mining in the past at the site into formalised, commercial mining will serve to increase the taxable base nationwide. Between 1997 – 2006, more than USD \$49.7 million was spent on exploration projects in Mongolia that lead to the discovery of the Gatsuurt hard rock deposit, including refunding to the state the costs of all previous geological explorations that were paid for by the Government, a total of MNT 2.6 billion<sup>198</sup>. Before the Boroo Mine went into operation, CGM invested approximately MNT 107.9 billion, including USD \$75 million to build and develop the Boroo Mine facilities<sup>199</sup>. Most of the processing facilities that will be used by the Gatsuurt Project are already in place as these were constructed initially for use by the Boroo project, thus significant new capital expenditures will include the BIOX® facility and modifications to the TSF.

The capital expenditure investment for the construction of Gatsuurt is estimated to be approximately USD \$72.4 million followed by expenditures of approximately USD\$40 million in average annual operating costs.<sup>200</sup> A breakdown of the components of direct benefits to Mongolia<sup>201</sup> is presented in Table 7.3, which shows each component as a percentage of total direct benefit.

**Table 7.3 Breakdown of components of direct benefits to Mongolia (% of total benefits)**

Category	%
Local purchases (operating cost)	49.3
Total government taxes and fees	31.9
Local purchases (Capital expenditure)	10.9
Salary to national employees	7.1
Other	0.8
<b>TOTAL</b>	<b>100</b>

#### **Royalties and Taxes**

<sup>198</sup> Centerra Fact Sheets (2010).

<sup>199</sup> Centerra Fact Sheets (2010).

<sup>200</sup> Feasibility Study Env and Soc Feb 2014, SNC-Lavalin.

<sup>201</sup> Gatsuurt Project Overview March 2015.

Revenues to the state and *aimag* Government budgets will comprise predominantly royalties and taxes. The revenue to State and local budgets from the Gatsuurt Project will sum almost MNT 660 billion<sup>202</sup>, the largest component of which is in royalties (MNT 209 billion), and 22% of which is Gatsuurt Sales Revenue. A total of 10% of MNT 660 billion will be paid from Gatsuurt to the local budget (i.e. to the Selenge *aimag* Government), which amounts to MNT 6 billion per year during the Project's operational phase. The estimated tax revenue of Selenge *aimag* for 2015 is approved at MNT 12.6 billion, 52% of which will be paid from the Gatsuurt project.

Table 7.4 shows a breakdown of the total taxes, payments and fees breakdown (in MNT million).

**Table 7.4 Breakdown of Estimated taxes, payments and fees (MNT, million)**

<b>Taxes, payments and fees</b>	<b>Estimated amounts, MNT million</b>
Royalty	209,025
VAT	167,976
Corporate Income Tax	135,010
Health and social insurance fees	46,773
Immovable property tax	29,139
Personal income tax	24,836
Customs duty	15,006
Common minerals use fee	14,168
Water use fee	10,774
Withholding tax	3,549
Other taxes (vehicle tax, license fee, land use fee, stamp duty, visas, etc.)	3,517
<b>Total taxes, payments and fees</b>	<b>659,772</b>

Over the life of the Project, the total cash flow distribution to the state is MNT 814 billion, which comprises 73% of the total cash flow distribution. The cash distribution to Centerra is 27% of the total. It should be noted that this calculation is based on Government participation and ownership of 34% of the Gatsuurt Project, as shown in Table 7.5.

**Table 7.5 Gatsuurt Project Distribution**

<b>Cash distribution</b>	<b>Billion MNT</b>	<b>Million USD</b>	<b>% Distribution</b>
Gatsuurt project net cash flow before tax and dividend	<b>1,112</b>	<b>654</b>	
<i>Of this:</i>			
Total taxes to be paid to the state budget from the project	660	386	
State dividend (assumed 34% full participation)	154	91	
Total cash distribution to Mongolian Government	<b>814</b>	<b>477</b>	<b>73%</b>
Total cash distribution to Centerra	<b>298</b>	<b>177</b>	<b>27%</b>

### Indirect Economic Benefits

In addition to these direct payments from the Project, other indirect economic opportunities would be created predominantly from Project and worker expenditure in the Project Area and at the national level, particularly in Ulaanbaatar. This would include expenditure for services such as food, transport

<sup>202</sup> Gatsuurt Project Overview March 2015.

and accommodation, as well as expenditure by workers hired at all Project phases, resulting in a net increase in commercial activity.

The Project will also have the impact of foreign investment incentivisation. The successful development of Gatsuurt will positively contribute to the perception of Mongolia as a safe country for mining investment and build market confidence that the country is again a stable investment opportunity.

### **Economic Vulnerability in Closure Phase**

The three-year closure phase of the Gatsuurt Project would cease operational expenditure and decline in jobs, resulting in negative impacts on the local economy as Project contributions phase out. Those employed by the mine are provided for in retrenchment through the Collective Agreement (referenced above), however for induced employment and incomes derived from Project economic contributions, alternative livelihoods are required at closure phase.

Experience from Boroo<sup>203</sup> suggests clearly that Bayangol *soum* is more dependent on BGC and will be less resilient to finding alternative employment opportunities for its unemployed residents, and that upcoming social investments should focus on developing closure phase partnerships to develop alternative businesses, employment and market opportunities.

The BGC Social Closure risk Assessment (2014) found that the greatest dependence on BGC at the *soum* level is in Bayangol *soum*, where the greater number of direct, contract and suppliers are located relative to the base population and the number of alternative industries. In 2014, the BGC contribution to social insurance to Bayangol *soum* was 19-23 million MNT / month, comprising 60-70% of all social insurance paid in the *soum* (indicating salary levels and the number of people employed by a single entity). In contrast, the main employers in Mandal *soum* are the Government administration (including inter-*soum* police and hospital), Prison (78 employees), MCS distillery (200 employees) and the railway (1,000 employees). There are 130-140 SMEs in the *soum*, employing about 30% of its residents and have an average of 8 employees. Including the unregistered, there are 7,300 people unemployed in Mandal *soum*, including 69 mining operators, some with experience at other mines or recent graduates with vocational training certifications. Additionally, there are a growing number of vulnerable, female headed households in the Project Area due to rising rates of divorce, who can potentially be greater impacted by Project closure, such as the case of Boroo catering contractor staff, who were largely locally employed women with few alternative employment options.

This direct experience is commonly recognised in the extractives industry, and CGM intends to mitigate this through a Community Development Agreement (referred to as the *Soum* Development Fund (SDF) during the Boroo Gold Project) investments to support alternative industries (discussed below and under mitigation) while Gatsuurt is operational. A significant decrease in economic activity in the Project Area would not be avoidable given the level of local Project investment, particularly in Bayangol *soum* and Tunkhel *bagh*, where fewer alternative employment prospects exist.

Closure would result in negative impacts as the project is withdrawn from the economy. The geographic extent of the impact is national, though impacts would be proportionately at the *soum* and *aimag* level.

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<sup>203</sup> BGC Social Closure Risk Assessment (2014).

The magnitude of the impact will be high and long term in its effect, extending well beyond the closure period and potentially permanently. The degree of confidence is high.

### **Local Economic Contribution**

In addition to the salaries and payments to the *aimag* government mentioned above, the Project will positively impact the local economy through opportunities for local suppliers and community development investments, and will also have the potential to cause negative localised inflation.

### **Inflation**

The potential for local price inflation may be an indirect adverse impact from the Project. Price inflation is caused by the influx of 'new' money into an economy, increasing the demand for (and price of) locally available products and putting pressure on scarce resources. An increased, wealthier, population tends to pay more for accommodation, goods and services, and have greater disposable income. As mentioned in the Employment section, the Boroo experience was a tendency for employees to migrate out of *soums* to Darkhan thence to Ulaanbaatar.

The risk of inflationary effects are of increasing the cost of living for non-Project residents, especially those on fixed incomes such as pensioners and government workers. In extreme cases this can lead to teachers, nurses and other essential government workers leaving their jobs to seek work at a mine, which was evident during the mining industry-wide boom in Mongolia in 2009, rather than a result of a single project of the scale of Gatsuert. The Project is prioritising hiring locally and will pay competitive (but not exorbitant) wages, as such these more severe impacts are considered less likely. Likewise, the positive economic impacts outlined above will contribute to ameliorate such adverse effects. However, there remains a potential for a residual impact to vulnerable groups, such as pensioners and other fixed income earners, which would be adverse. Consumer prices have increased each year in Selenge *aimag* from 2010-14 and inflationary effects cited as a key issue for 85% of households surveyed in the baseline, so local inflationary effects will hardest hit the already economically vulnerable groups such as female-headed households with dependents.

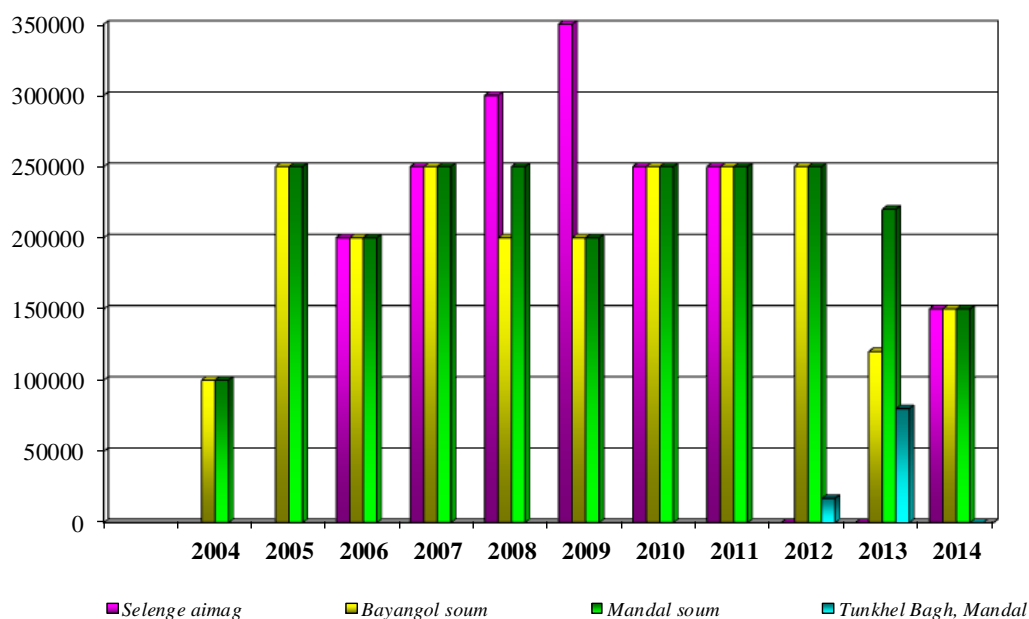
### **Investments into Community Development**

Community development investments remain relevant to CGM through its commitment to continue the operation of a CDA (referred to as the SDF during the Boroo Gold Project). CGM has been making investments into the local *soums*, often with local partners, since the creation of the SDF in 2004, which was initially established for the Company to contribute its community development investments into Bayangol and Mandal *soums*. From 2006 CGM extended the fund to include Selenge *aimag* to better address wider community needs. These funds are provided to communities near to the mine site to support building repairs and upgrades, new public facilities and projects that will improve the overall community standard of living as well as providing employment. Since 2004 the CDF has contributed USD \$6.5 million in implementing about 170 projects in Selenge *aimag* and its Bayangol and Mandal *soums*<sup>204</sup>, as shown in Figure 7.1.

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<sup>204</sup> CSR Activities in Mongolia (BGC, 2014).





**Figure 7.1** *Soum Development Fund investments since inception, USD*

The number and type of investments have varied across a range of thematic areas during the period of SDF operations; Table 7.6 shows the number and type of projects financed by the USD 5,077,075 investment over 8 years to 2012.

**Table 7.6** *Number and type of projects financed by CGM Soum Development Fund, USD, 2004 - 2012<sup>205</sup>*

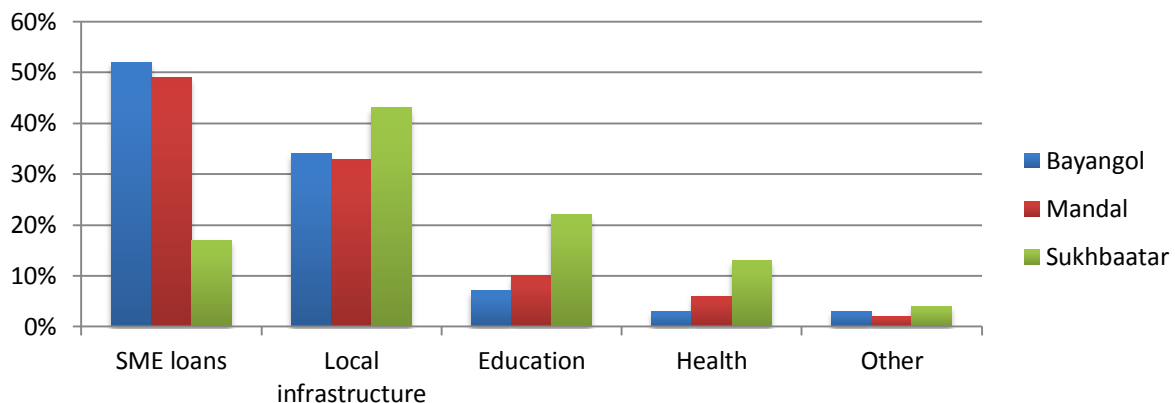
Project types	Number	Total investment	Average unit investment
Infrastructure	33	1,552,565	47,047
Education	21	1,283,650	61,126
SME Development	16	1,092,000	68,250
Local Government Services	20	529,955	26,498
Microcredit Fund	7	373,705	53,386
Health	8	146,300	18,288
Social Welfare	6	98,900	16,483

Significantly, CGM conducted an evaluation of the Fund's operations in 2012 to ensure that the investments it has committed to delivering with the Gatsurt Project are in line with good international industry practice, the perspectives of the communities it seeks to support and the experiences of delivery of the SDF through the Boroo project. During the evaluation, respondents were interviewed to hear their ideas about projects they view as important from the community perspective to be considered for future investment<sup>206</sup>.

<sup>205</sup> Assessment of Community Investment (TERI, 2012).

<sup>206</sup> Assessment of Community Investment (TERI, 2012).

**Table 7.7 Community member preference for future CGM investments**



SME loans and infrastructure projects feature highly, however at the *aimag* level, education and health are also indicated. The evaluation reported that some Government officials have seen the SDF as a 'cash cow' for them, thus suggesting the need for a multi-year, strategic community development plan with full community engagement in its development. Additionally, respondents cited that they wished to see improvements in economic priorities of: employment opportunities for locals, and local supplier development (including capacity building for local businesses to help businesses to meet specified requirements).

In analysing the experience of SME loans further, since 2006, through the microcredit fund invested by CGM, 1,127 micro loans with an average total amount of 994,568,300 MNT were disbursed to community members (which was approximately 7% of the total SDF). A total of 79% of the micro loans were disbursed in Bayangol *soum*, and the remaining 21% to 2 *baghs* of Mandal *soum*. The program evaluation clearly indicates that the microloans increased access to financial services by local people and helped low income people access the financial services to start a new business or to expand their existing business. It recommended that to sustain it for the longer term, the microcredit fund should be managed by a professional body, as was the case in Bayangol *soum*.

Lastly, recommendations were made to improve the CGM donations policy, which is funded as a component of the SDF and will remain in place for the Gatsuurt Project:

- Advertise donation cycles with specific subjects per quarter or annually.
- Make the areas of donations clearer for the public in the target areas, preferably mining induced impact mitigation to ensure confidence of local people and sustainable living of people who are in the mining development region.
- Determine and advertise the maximum amount of donations for the specific target areas, such as sports.
- Consider implementation as a grant program (not necessarily a donation), to encourage sustainability<sup>207</sup>.

<sup>207</sup> Assessment of Community Investment, TERI 2012.

In response to these recommendations, CGM has committed, through the life of the Gatsuurt Project, to implementation of community development activities under a "Cooperation Agreement" with the *aimag* and Project Area *soums*. The Cooperation Agreement requires compliance with the following:

- Activities funded under the Agreement are to be included in the *aimag* and community development plan;
- Determination of the investment program is to be based on the principles of sustainable development; and
- The investment program is aimed at improving the livelihoods of citizens and promoting SMEs and family businesses.

A Community Development Plan will be developed and implemented that reflects the Cooperation Agreement content (once the Cooperation Agreement legislation is fully implemented). The Community Development Plan will be integral part of the management system of the Company.

### **Local Economic Opportunities through Goods and Services Provision**

There are a number of goods and services that can be provided by local suppliers to the Gatsuurt Project. These include<sup>208</sup> the following goods: agricultural products (meat, vegetables, flour, dairy, bread and eggs), fuel, work clothing (including safety gear), sample bags, and gold transport boxes; and the following services: communications, security, catering, personnel transportation, ore haulage, heavy equipment maintenance, scrap materials disposal (batteries, recyclable plastics, steel), and support of entrepreneurs for business planning and start-up.

Supplier contracts will clearly specify the requirements and expected standards. The Boroo project successfully engaged local suppliers to deliver contracts in a number of these areas (such as personnel transport and some food products) as well as engaging contractor workforce locally (such as in catering and camp services), which indicates a strong likelihood that the Gatsuurt Project will similarly be able to do so with a suitable management framework in place. A minimum requirement for operation as a local business / service delivery in the local area will be required - in much the same way that local employees will need to satisfy criteria for demonstrating a period of local residency - to qualify as a 'local supplier'.

An overall positive impact on the economy is expected as a result of Project expenditure during all phases of the Project, through the increase in commercial activity, job creation and increased and steady incomes. The geographic extent of the impact is predominantly at the *soum* and *aimag* level, as a local work force is prioritised, but will extend to the national level. The expected impact will be direct and indirect of high, positive magnitude. The duration will extend to the construction and operational phases.

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<sup>208</sup> Gatsuurt Project Overview March 2015.

#### 7.1.1.2 Enhancement and Mitigation Measures

##### *Employment*

##### **Direct and Indirect Employment**

CGM has an existing policy, as was applied at the Boroo Gold Mine, of prioritising local employment. Preference will be given to local citizens if they meet the knowledge, skill and experience requirements of the position. This same policy will apply with the Gatsuurt Project and further, CGM will require the same policy of its contractors. The policy prioritises for employment applicants from the Project Area (Tunkhel *bagh*, Mandal and Bayangol *soums*), thereafter applicants from Selenge *aimag*, then beyond. CGM will develop and implement an Employment and Training Management Plan that will document this and other requirements and management activities relevant to ensuring that local people are better equipped to apply for available roles. This includes: Ensure eligibility for 'local hiring preference' through a specific timeframe of residency in the Project Area (which will be particularly important in Tunkhel *bagh*, where poor educational access and high unemployment limit existing employment opportunities); that vacancies are clear on requirements (for example, specifying particular heavy licence type and years of experience in truck driving in order to receive a site driving licence); that vacancies will be advertised in local community Labour Offices and on the CGM website; coordination with TVET schools on relevant training requirements such that the Mongolian workforce is able to uphold international workplace safety standards; and with *soum* Government departments to encourage applications from ensure potentially suitable job seekers).

Good risk management and a social licence to operate are achieved through strong stakeholder engagement. Local expectations and concerns will be managed through the trained, existing Community Relations team, with the capacity to engage and visit communities and talk to those stakeholders potentially impacted by the Project, particularly on employment opportunities, requirements, application timing and assessment processes. The organisational chart for the Corporate and Public Relations team is shown in Chapter 8, which specifies responsibilities within the team for implementation of relevant SMPs including Employment and Training.

The workforce will decline with closure of the Mine. The mitigation measures will be similar procedures and processes as have been applied at CGM, which are a proactive response:

- Researching employers who CGM anticipated would be hiring, and identifying the types of roles and in what numbers and communicating this to the workforce going through retrenchment;
- Support of the *soum* administrations in looking at alternate sources of employment / business development opportunities (for example, pooling redundancy pay to start new businesses); and
- Delivering collective redundancy requirements as is provided for in the Collective Agreement; during 2012 collective redundancies, computer and English language skills were provided through this Agreement to redundant employees.

##### **Labour and Working Conditions**

Principles for maintaining positive labour and working conditions include: prioritising local employment; facilitation of work readiness for potential employees; maintaining good relationships and

communications with key stakeholders including existing staff, key Government officers and the Trade Union; and compliance with legal requirements. The existing BGC Collective Agreement applies to BGC staff, and specifies the requirement for compliance with the Labour Code as well as any additional provisions over and above the Code.

Mitigation of the risk of not finding a sufficiently skilled workforce include:

- Clear delineation of tasks and responsibilities for maintaining stakeholder relationships and on workforce requirements and timeframes, through the Employment and Training MP;
- Ongoing provision of training for the existing Mongolian labour force at Boroo;
- Consider current / former Boroo staff in supervisory roles (as appropriate), including for training of new employees.
- Retraining the existing processing workforce to be able to operate new equipment (in particular, the BIOX® plant); and
- Use of an expatriate workforce for a term-limited period.

Mitigation of the potential risks of labour and workforce impacts includes:

- Applying the BGC hiring policy across to the Gatsuurt activities, including local hiring prioritisation, through the Employment and Training MP;
- Ensuring all employment contracts are in place, monitored and enforced, including of indirect employees for consistency and equity across the Project;
- Implementing the existing Boroo Employee Complaint Mechanism at Gatsuurt;
- Implementing the standard BGC employment contract template for Gatsuurt employees for consistency in approach within the CGM workforce, assuming Gatsuurt employees will also be part of the existing BGC union;
- Requiring compliance with, at minimum, the Labour Code requirements for all contractor workforces, and that a Collective Agreement must be in place with a number of provisions that go beyond compliance with the Labour Code. Employee standards review will be undertaken on regular basis to ensure compliance of EBRD PR2 requirements and labor code by all contractors. ; and
- Development of a Contractor Management Plan as the mechanism for ensuring contract compliance, in any instance where contractors are not unionised.

### *Investment and Financial Benefits*

The objectives of mitigation of these potential impacts are: to maximise the available benefits of employment and procurement, in particular in the Project Area; to implement investments into the community at minimum in accordance with the legal requirements of the Minerals Law on programs to assist community development; and to minimise the adverse impacts of mine closure. In order to reduce the Project's negative impacts (particularly on vulnerable local citizens) and to enhance its positive macro-economic impacts, the following mitigation measures are proposed:

- Implement the Local Procurement Policy and management plan to guide management of local suppliers, including:
  - BGC specification and requirements are made clear on consistent quality, volumes, quantities and other specifications, and ensuring supplier contracts are clear in specifying such requirements and expected standards for delivery of goods and services;
  - Prequalification survey implementation to screen for potential local suppliers; and
  - Provide targeted SME Supplier training and development through a Supplier Development Program, to ensure local sourcing and procurement opportunities can be met through local suppliers.
- Retain salary levels that are competitive in the employment market and consistent with existing BGC salaries, to minimise effects of inflation.
- Ensure that government, community relations and public consultation activities need to address the concerns of vulnerable residents, in particular those on fixed incomes and female-headed households. Conduct stakeholder engagement to design specific programming within the CDA initiatives to focus on identifying targeted options for local economic development; these can be piloted during the operational phase of the Project, and scale up / increase as the mine moves into closure phase.
- Implement the Local Procurement Policy requirement of procurement from a mix of project-affected *soums/baghs* to minimise local inflation effects.
- Establish and implement criteria for eligibility as a 'local supplier' to promote economic benefits in the Project Area.
- Support capacity building initiatives which build the ability of governments to effectively and transparently manage increased tax revenues and increased demands for social and public services, especially in support of vulnerable groups at the local level, and including through CGM's ongoing role as an EITI Supporting Company, through GRI reporting<sup>209</sup> and in promoting Mongolia as an investment destination, at the national and international level.
- Develop a Community Development Management Plan to guide implementation of the CDA, including:
  - Seek opportunities to leverage funds and build partnerships with Government, international donors and other private companies working in the region;
  - Develop a partnership with a professional body to manage the microfinance program under the CDA;

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<sup>209</sup> Centerra Gold became an Extractives Industry Transparency Initiative (EITI) Supporting Company in 2011, playing an active role in promoting the EITI in Mongolia and Kyrgyzstan, and has published a Global Reporting Initiative (GRI G3) report since 2013.





- Distribute donations under the CDA according to a program of target areas at scheduled times in the financial year;
- Introduce a grant program component and phase out donations under the CDA; and
- Prioritise CDA investment into human capital (rather than capital expenditure and infrastructure) for more sustainable outcomes. The Company's approach to community development will prioritise needs based, participatory planning and implementation, which are critical for the success and sustainability of community-based development plans.

## 7.1.1.3 [Summary](#)

Potential Impact	Impact Characterisation	Potential Unmitigated Significance	Potential Residual Significance
<b>Employment (EBRD PR 1, 2)</b>			
Creation of direct and indirect employment opportunities for the life of the mine	Definite Direct positive Long term Intermediate range	-	-
Induced job creation from service and supply jobs to meet demands from the resident workforce and the mine itself during construction and operations phases	Definite Direct positive Medium term Intermediate range	-	-
Reduction in direct, indirect and induced employment during the closure phase	Definite Direct, high moderate negative Long term Intermediate range	Moderate	Minor
<b>Labour and Working Conditions (EBRD PR 1, 2)</b>			
Risk that contracted mining and haulage contractors do not use local labour or follow Centerra labour practices	Possible Direct, high moderate negative Long term Intermediate range	High	Minor
Risk of unmet community expectations for jobs due to lack of suitable candidates	Definite Direct negative Medium term Extensive range	Moderate	Moderate
Potential inability to find a sufficiently skilled workforce	Direct Negative, high moderate Short term Extensive	Moderate	Minor
Potential for labour disputes	Direct Negative, high moderate Short term Extensive	Moderate	Minor
<b>National and Local Economic Investment (EBRD PR 1, 2)</b>			
Increase in local procurement opportunities in particular during operational phase	Definite Direct positive Medium term Intermediate range	-	-
Localised inflation effects due to the impacts of the Project on the local economy	Definite	Moderate	Minor

Potential Impact	Impact Characterisation	Potential Unmitigated Significance	Potential Residual Significance
	Direct, high moderate negative Long term Intermediate range		
Increased revenue to the State and <i>aimag</i> budgets through taxes, royalties and other payments, in particular during the construction and operational phases	Definite Direct positive Medium term Intermediate range	-	-
Decreased economic investments at the local level at the closure phase of the mine, leading to higher vulnerability in project-affected communities	Definite Direct, high moderate negative Long term Intermediate range	Moderate	Minor

## 7.1.2 Demography

### 7.1.2.1 Impacts

The peak construction phase workforce will be 300 people for a period of 15 months, followed by the operational phase workforce of 1,000 people. Prioritisation of employment will be given to those who live in the Project Area who meet the necessary skills and experience requirements, and as was described in Employment above, it is anticipated that this policy will be possible to achieve based on the current employment market. While the number of individuals to be employed from each *soum* or *bagh* in the Project Area has not been defined, it is assumed that the workforce will comprise a mix of citizens of each of Bayangol and Mandal *soums*, and Tunkhel *bagh*, as was the case for the Boroo Project.

It should be noted that the existing Mandal *soum* population is 25,693 and the existing in-migration to Selenge *aimag* was 1,430 in 2014, a portion of which migrated to Zuunkharaa as the largest *soum* centre in the *aimag*. Out-migration in the same period was 3,129, and net migration rates have been increasing over the past 3 years. So, relative to the existing Mandal *soum* population, the entire workforce would comprise a very low 3.9% of the overall population.

In addition to sourcing the workforce from the existing population, it is anticipated that in-migration from direct and indirect employment with the Project will be limited in the Project Area. The experience of the Boroo Project shows a tendency of workers to use their stable and competitive salary and access to credit as a means of out-migration from the *soum* to larger urban centres. The proximity of the Project to cities of Darkhan and Ulaanbaatar means that commuting for shifts is achievable. As was practiced successfully during the Boroo Project, CGM will not provide accommodation for its workforce when on rotation. All site-based workers will be accommodated on site at Boroo for the duration of their shifts, thereafter transported by bus to return home to the *soum* centres, Darkhan or Ulaanbaatar.

While influx of Project workers is likely to be negligible based on the Boroo experience, there is the potential for speculative job-seekers migrating in to the Project Area specifically to seek either short term contract work, or permanent employment with either CGM or its contractors. IFC has established a tool to determine project-induced influx based on the qualitative analysis of three factors; existence

of a mobile population within the context, project characteristics, and capacity of the area to meet project needs<sup>210</sup>.

Application of the IFC tool suggests that the population mobility, and rates of un- and under-employment are high, however the Boroo experience suggests low-moderate in-migration will occur. The Project characteristics are such that demand for direct and indirect construction and employment labour are moderate. The capacity of the Project area to meet the needs of the Project is moderate; 65% of the unemployed Selenge population has secondary education while 18.3% have tertiary education. 37% and 55% of Mandal and Bayangol *soums* respectively, responded that their unemployment status is due to the shortage of job opportunities. The capacity of social infrastructure to provide for Project needs is described further in Section 7.1.4. Based on the Boroo project, there is moderate capacity for goods and services to be supplied locally and of SME capacity, which increases with support through the CGM CDA.

Currently the experience is, in particular of young men with secondary levels of education, to leave the Project Area to seek work or take seasonal or contract employment when this is available. The existing unemployment figures in Mandal are very high (in 2014, 10.2% registered unemployment at the *aimag* level<sup>211</sup>, and 29% total unemployment including unregistered unemployed estimate from the *soum* labour office<sup>212</sup>), and opportunities to cause social rupture coincide with unemployment or underemployment, particularly where in-migrants may appear to or actually receive greater Project-related benefits. 78% of crimes are committed by men in the Project Area, and a third under the influence of alcohol. This is discussed further in the section on Community Health 7.1.6. So, it is possible to assume that this group may determine to stay locally and seek work opportunities created by the Project rather than migrate out. Additionally, those who have left for other *soums* to seek economic opportunities but with family in the Project Area, may be induced to return, strengthen family units and seek direct, indirect or Project-induced economic opportunities, in construction, operations and closure phases.

Official data on migration shows that there is an overall decline in migration into Selenge *aimag*, despite common perceptions that in-migration is increasing. As described in the baseline study, in-migration has typically been of herder households to seek new pasture areas for herding, with most families arriving from the western *aimags* with their livestock to seek closer access to markets. However, herders indicated that they feel unable to diversify out of herding due to their lack of skills, industry experience, and English language skills appropriate to work in the mining (and other) sectors. Baseline research suggests that unregistered in-migration is approximately 15% more than official figures. Based on the Boroo experience it can be assumed that diversification from herding to work with CGM or contractors would be limited to, if any, seasonal construction, low- or un-skilled work, to supplement herding based livelihoods.

Current levels of competition in the mining job market nationally influence the level of influx, as well as mitigative actions by CGM in partnership with *soum* governments, to discourage speculative

<sup>210</sup> IFC Risk Assessment  
([http://www.ifc.org/wps/wcm/connect/63f07100488658f3b7a2f76a6515bb18/Influx\\_Part3.pdf?MOD=AJPERES&CACHEID=63f07100488658f3b7a2f76a6515bb18](http://www.ifc.org/wps/wcm/connect/63f07100488658f3b7a2f76a6515bb18/Influx_Part3.pdf?MOD=AJPERES&CACHEID=63f07100488658f3b7a2f76a6515bb18)).

<sup>211</sup> Baseline 2015.

<sup>212</sup> BGC Social Closure Impact Assessment, 2014.

employment seeking and economic opportunities. Thus the potential for negative impacts to demography of speculative-based in-migration may include:

- A small but increased burden on social infrastructure through the life of the Project (described further in the Social Infrastructure section);
- Creation of social fracture through increased competition for jobs is moderate-high during the operations phase of the Project (described further in the Community health, Social cohesion section);
- Contribution to localised inflation (described further in the Economy section); and
- Contribution to poor public health outcomes (e.g. increase in sexually transmitted and infectious diseases and alcohol-induced violence).

#### 7.1.2.2 [Enhancement and Mitigation Measures](#)

The potential negative effects in communities of demographic changes are well understood within communities in the Project Area and suggestions for mitigation of potential impact have been put forward through consultation processes. These include: stipulation of a period of residence in order to qualify as priority 'local' employment. This requirement will also be shared with relevant Government departments and agencies to extend communications of this message and minimize speculative in-migration.

Monitoring of demographic changes, in particular, any negative impacts of in-migration or relations between or within the workforce and the community, with the *soum* governments to enable tracking and appropriate response development where required.

While the construction workforce is relatively small, experience with the Boroo project suggests that maintaining the camp standards at construction camps is significant in mitigating potential negative effects of this short term workforce. As such, contractor workforces are required to comply with the same CGM requirements to work on site and at Contractor camps, which will be sited both at the Boroo site and off-site near workplaces. This includes compliance with the Boroo Drug and Alcohol Policy and CGM safety requirements mirrored by the Construction contractor. Additionally, contractors are required to match the preference for local labour hire as per CGM policy to ensure maximum local benefits are achieved through the construction phase.

Liaison by the Project with Government will include issues of law enforcement requirements to address increased Project-induced in-migrants, and CGM will also work with the police and relevant Government agencies if required, to address any Project-induced antisocial behaviour.

See also Social Infrastructure, Community Health and Economy mitigation measures.

### 7.1.2.3 [Summary](#)

Potential Impact	Impact Characterisation	Potential unmitigated significance	Potential Residual Significance
<b>Demography (EBRD PR 1)</b>			
Increase in speculative employment seekers creating pressure on services and localised potential social fracture	Definite Direct / Indirect, moderate negative Long term Intermediate range	Moderate	Minor

## 7.1.3 Land Use and Livelihoods

### 7.1.3.1 [Impacts](#)

The existing footprint of the facilities at the Boroo site, including the TSF and BIOX® facility, will remain unchanged as modified, industrial land allocated to CGM for ore processing and treatment within the Boroo mine licence area. Use of the public road between Boroo and Gatsuurt, constructed in 2010 on an alignment to minimise disruption to other land users (pasture, cropping activity, state-owned forest; see section 3 on Project Alternatives) has the potential to impact roadside land users with dust, noise and vibration for the life of the Project. The Gatsuurt mine footprint was on alluvium highly modified by artisanal mining activity. Deforestation by the Project is limited and any land clearance requires, by permission, a tree count and offset to be planted in the Project Area. As the Gatsuurt Project has been managed as an operational site since 2004, access to the site has been restricted through fencing and establishment of site security entry points. As far as possible, existing borrow material points will be accessed for use in expansion of the TSF, however some small land disturbance may be required to supplement volumes of borrow material required. Thus, no additional land take is required for construction or operations, however some land disturbance may be required for additional borrow material. Closure phase will see decommissioning of infrastructure, stabilisation and rehabilitation of disturbed areas in the Gatsuurt licence area to enable reestablishment of pre-artisanal mining land uses in the Gatsuurt valley. There are no residual issues left over from any past land acquisition activities. A Resettlement Closure Audit indicated that all resettlement work was completed satisfactorily.

#### *Pasture Impacts*

Impacts to pasture from the Project stem from nuisance issues to pasture users from: construction of the TSF lift and use of the public road, specifically: dust, noise and vibration from Project vehicles impacting quality and availability of pasture and agricultural crop land along the public road and adjacent to the TSF; and, potential impacts to other water users as a result of mining activity at Gatsuurt.

The Land Use Study (2010) described the pastureland in the area as used mostly through two-seasonal migration (winter/spring and summer/autumn), laying a basis for semi-sedentary lifestyle of herders. The pastureland is becoming increasingly a scarce resource due to a bigger role of crop production; expanded in-migration of herders and animals from predominantly the western *aimags* is considered influential on pasture degradation however demographic data suggests otherwise. As a result of scarcity and/or increased stocking, pastureland degradation has become a serious problem.

Livestock production is proportionate to the quantity of livestock and its productivity and stock quality. The quantity of livestock is also proportionate to the volume of the pastures available and also good

quality pastures guarantee good livestock survival, health and productivity. The income of herders' households is additionally influenced by other factors such as the price of livestock products, distance from markets, and costs of transportation also directly influence herders' income<sup>213</sup>.

Pastureland use is organised by households and traditional units, *khot ails* (a group of households who camp together for at least one season). There are some initiatives for establishing herder cooperative groups however at that time, these groups were in their infancy. As semi-nomadic pastoralists, while local citizens usually reside in the Project area, in summer and winter some herders temporarily in-migrate from neighbouring *soums*, creating further pressure on scarce pasture and impacting resident herder access.<sup>214</sup> Land and water disputes occur regarding use of pasture, distribution of hayfields and livestock watering. Cases of disputes among local herders within *soums* and *baghs* are rare, and 2010 research reported that disputes usually occur at *soum* border areas and between resident and in-migrated herders. Disputes between herders and crop farmers are very common; 30% of 2015 research respondents indicated conflict between herding and haymaking or crop farmers. Research shows this is due to livestock eating and destroying crops due to poor herding practice and a lack of crop fencing. Fencing of crop land is increasing, further decreasing land access for herders, yet contesting parties usually settle disputes by negotiation.

The TSF has had two lifts during the operations of the Boroo mine. This activity, requiring earthmoving to raise the height of the facility walls, can generate dust, noise and vibration from use of heavy equipment and movement of borrow and clay materials, and potentially impact other land users (both herders and crop farmers) in the vicinity and particularly those downwind. One potentially impacted land user is less than 5km from the TSF. Past experience at Boroo demonstrated capacity to effectively manage these potential impacts, which are direct, negative, temporary and localised.

Impacts for roadside land users from the Project are increased dust generation from Project traffic, with impacts of dust deposition to pasture and cropland. The public road is currently unsealed, with periodic grading by CGM as required. Dust suppressant is not applied to the road. A traffic survey (2015) investigated number and types of vehicles travelling on the public road between Boroo, Gatsuurt and Zuunkharaa. The section with the greater potential to impact pasture users and crop farmers is between Boroo and Zuunkharaa; there is less pasture or cropping and more forest from the Zuunkharaa turnoff to Gatsuurt. The survey revealed that the average vehicle travelling on this public road is a light vehicle going from the direction of the Ulaanbaatar road in the west to Zuunkharaa during the day. Baseline research suggested that many of the passenger vehicles travel at speed along this road because of the good road condition, which enables greater dust disturbance. There are an average of 70 vehicles of all types travelling this section per day.

Of 357 average journeys per day on all sections of road surveyed, 6% are large trucks or busses. The additional load of Project-related vehicles will be an average of six haul truck movements per hour, operating 24 hours per day, 350 days per year. Thus, it is reasonable to assume that haul trucks are larger, noisier and heavier than most of the existing traffic in the area and so will have greater dust, noise and vibration effects on the households located beside the Gatsuurt – Boroo public road. At the

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<sup>213</sup> Oyu Tolgoi Pastureland and Livelihood Improvement Strategy (2012).

<sup>214</sup> Land Use Study, CPR Dec 2010.



time of the baseline survey, there were 18 ger-dwelling (semi-nomadic) households (sensitive receptors) located in proximity to the road.

The time of day for haul truck operations will potentially change noise and vibration effects at sensitive receptors, and assumes that there will be greater impact at night when ambient noise levels are lower. Dust generation will be most significant during spring, when ambient conditions tend to be drier and windier.

Mitigation of noise and vibration effects will be guided by ensuring road safety measures are met as a priority. Further detail on traffic data and road safety is provided in Section 7.1.6 Community Safety.

#### *Forest resources*

Regular use of the road between Boroo and Gatsuurt will potentially decrease the amount of illegal forest resource use, such as illegal logging, due to greater presence or activity on the road and in the area. Current traffic is intermittent to the site; there is a daytime average of 13 vehicles travelling from Gatsuurt to Boroo and six at night, with 19 vehicles from Gatsuurt to Zuunkharaa during the day and 5 at night. Forest land is increasingly being managed by Forest User Groups, however these forest partnerships in the Project Area are in their infancy with some of them having no identified boundaries of the forest they use<sup>215</sup>. The functions of the forest partnerships are still immature and poorly established and most are focused on fighting illegal logging, which is the most common violation across the forests possessed by such groups. Up to date, main actions of the partnerships are limited to the protection of the forest they possess. While road construction may have increased accessibility to the forest area, the use of the road by the Project may benefit forest protection through greater visibility of activity in the area for the construction and operations phases of the Project.

#### *Road impacts to Livelihoods*

The use of the public road by haul trucks has the potential to increase the number of collisions between Project vehicles and livestock. Mine traffic will travel slower than local traffic however the weight of outbound (fully laden) haul trucks are proposed to be 30 tonne vehicles, which will not be able to stop in time to brake for livestock should they move onto the road. Baseline data revealed less than 5 reported accidents in Mandal *soum* caused by hitting an animal with a vehicle (none were reported in Bayangol *soum*) in 2014<sup>216</sup>. While this appears low as an annual, *soum*-wide statistic, underreporting may be possible and agreements reached between livestock and vehicle owners for compensation to herders.

Minimising potential impacts endangering human life and health and road use are the priority. So, the mitigation measures applying to this aspect will also ensure mitigation of potential impacts to livestock and herder livelihoods. Direct, negative potential impacts will apply at all phases of the Project at a small spatial range. Mitigation measures are covered as per the Section 7.1.6 on Community Safety.

#### *Landscape and land disturbances*

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<sup>215</sup> CPR Land Use Study (2010).

<sup>216</sup> Report on causes and conditions of traffic accidents in Bayangol and Mandal *soums*, 2014.

The environmental aspects of landscape and land disturbance impacts are addressed in the relevant DEIA documents. Here, socio-economic aspects and impacts are described.

The landscape of the Gatsuurt site will undergo permanent change through all phases of the Project, primarily through creation of pits and waste rock dumps although sympathetic to the landscape. The impact to the landscape is considered to be direct, of long term duration and low severity with a low spatial extent.

Additional land disturbance impacts will be felt from the extraction of borrow material for the TSF and clean water pond construction. Borrow material will be extracted from existing borrow pits however expansion of these will result in direct, low-moderate negative impacts in a small spatial range.

Land clearance at the Gatsuurt site commenced in 2010 in pit and WRD areas, where local authorities cleared several locations of trees at the mine site with the involvement of local companies and communities. Permissions for clearance require counting of each tree to be cleared in order to offset this impact with tree-planting in another part of the *soum*. With the start-up of mining, tree planting and reforestation activities will resume around Tunkhel and Mandal. For example, in 2010 the Gatsuurt Project compensated for the first 82 hectares of vegetation clearance, comprising 4,948 young trees to local communities, including 1,260 trees to Tunkhel. Another 1,048 trees were moved from the Gatsuurt to Boroo, where they were planted using Tunkhel labour.<sup>217</sup>

### *Artisanal mining*

Research in 2010 and 2015 included reflection of citizens about artisanal miners at Gatsuurt. Artisanal mining, while historically rooted in poverty, is driven by a wide range of factors. Miners can be broadly divided into two groups: permanent miners, or local citizens diversifying their income sources. Research in 2010 found that in Sumber *soum*, 80% of *soum* citizens are involved in artisanal mining, and recorded cases where livestock fell into the pits dug, and left unfilled, by the miners in summer when herders were away, died. Despite this, the artisanal miners reported that no serious conflicts between the local citizens and the miners occur (see baseline study section 6.6.3.4 for further discussion of community perceptions of artisanal miners).

Throughout all phases of the Project, a potential impact is that artisanal miners become active at the Gatsuurt site, as was the case periodically at Boroo. Community health impacts are addressed in Chapter 7.1.6, while the land disturbance impacts apply particularly on closure of the mine. CGM has committed to rehabilitation of the Gatsuurt site to a secure, safe and stable state equivalent to that which was in place prior to disturbance by artisanal miners (1990s). The potential impact of artisanal mining activity is direct high-moderate negative, of long term duration and small spatial range. See Appendix B for further analysis of ASM issues that emerged subsequent to the social baseline study conducted for the Gatsuurt Project.

### *Closure*

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<sup>217</sup> Centerra Fact Sheets (2010).

The post-closure land use of the Gatsuurt site will be determined with input from Government agencies, NGOs and local community members, with a purpose of offsetting losses of employment and economic benefits to the maximum extent possible through sustainable activities in the Project Area.

During closure the Project infrastructure will be dismantled and the footprint rehabilitated. Ground disturbance will be limited to the existing footprint therefore it is considered that no closure impact is anticipated on any additional areas. The reclamation is scheduled to be conducted upon completion of mining operations and will be undertaken within a period of three years. Post-closure monitoring is planned to be undertaken for five years. Impacts to land from closure activities are considered to be positive as the land will be rehabilitated to a secure, safe and stable landform, to a condition at least equal to that prior to the area's disturbance from artisanal mining. The spatial extent of impacts will be small (i.e. the area disturbed by the Project), of long-term duration as the land will be passed back to Government, and high-moderate positive impacts as post-closure rehabilitation effects will be observable.

#### **7.1.3.2      Enhancement and Mitigation Measures**

The principles of land use and livelihoods enhancement and mitigation measures are to ensure during construction and operations that existing land-based livelihoods are continued with minimal disruption, and at closure, to re-establish pre-disturbance land uses (for example, re-establishment of pasture for livestock grazing, or forest resources for user groups, as appropriate), and to engage with relevant stakeholders to agree on this or alternative measures that facilitate beneficial use of land for sustainable livelihoods at all phases of the Project.

##### *Mitigation of Impacts to Pasture*

Mitigation of impacts to pasture from dust generation on the public road include:

Mitigation of the impacts of dust can be achieved by application of dust suppressant on the road to minimise dust generation during all phases of the Project. Clearly this will act on Project, Project-induced and public traffic. Use of magnesium chloride as a suppressant can be obtained via permission from the relevant authorities, and will be undertaken in accordance with an Atmospheric Emissions Management Plan. Additional measures include:

- Additional periodic road grading.
- Covering loads of trucks to prevent both release of dust off trucks and ore from falling off trucks.
- Communications on volume and timing of haul truck movements as described in the Stakeholder Engagement Plan.
- Inclusion of pasture / cropping improvement measures within activities funded through the *Soum* Development Fund, to:
  - Support herders / farmers to improve herd / crop management and animal / crop health issues leading to improved livelihoods;
  - Promote herders / farmers joint collaboration initiatives to generate and diversify income; and

- Preserve the pasture and livestock sector and nomadic culture.

The Temporary Rules for minerals transport describes transport on 'hard paved roads', which, while effective at mitigating the impacts of dust, would also significantly negatively impact road safety. This is described further in Section 7.1.6 on Community Health. As such, this SIA assumes the road will retain an improved gravel surface for the duration of construction, operations and closure.

Mitigation of the impacts of dust generation from the TSF lifts will be as per those actions applied during the operations of the Boroo Project, including scheduling construction activity as far as practicable with agreeable weather conditions (e.g. lower prevailing winds, damp conditions); localised dust suppression as required; minimise the movement of the volumes of construction materials; stakeholder notification and grievance mechanism in place.

Mitigation of noise and vibration effects on land users are covered in the section on Community Safety.

#### *Forest resources benefits enhancement*

Enhancement of benefits associated with greater visibility of forest users from peers in the community include:

- Regular policing of the Gatsuurt area by CGM's existing security force as per existing operations and eviction of any illegal loggers that are encountered.

#### *Landscape and land disturbance mitigation measures*

Minimisation of landscape impacts will be achieved by limiting areas of vegetation clearance to the areas required to accommodate the Project, and maintaining screening of the area as far as practicable through the narrow valley at the eastern end of the Gatsuurt site. The site is not on a major thoroughfare and as such, is screened from general public view. Minimising through-travel from Tunkhel to the Gatsuurt security gate for the duration of the Project will provide public safety benefits, as well as landscape screening until rehabilitation is completed following closure.

Land disturbance from borrow pits will be mitigated through using existing sites thereby minimising creation of new areas of disturbance. Borrow sites will be reclaimed after completion of materials extraction. The existing processes for land clearance and grassland rehabilitation will be applied, as has been successfully demonstrated through the Boroo project.

Tree planting activities that protect high value forest areas to offset vegetation clearance, has the additional positive benefit of creation of seasonal jobs and revenue generation for local communities. Enhancement of this benefit is achieved through providing jobs for those communities directly impacted by the clearance, for example, as was applied in replanting of offset trees from Tunkhel by Tunkhel citizens.

#### *Artisanal mining impact mitigation*

Mitigation of the potential impacts of artisanal mining post-closure include:

- Development of a Mine Closure Plan, including social closure actions, through the Social Closure Working Group and in consultation with all relevant stakeholders (including artisanal miners), which will be updated from a conceptual to a detailed plan through the operations phase of the Project prior to detailed implementation at closure.

- Promote ownership of the closure plan by artisanal miners through engagement with miners and other stakeholders to design closure landforms that match, or are sympathetic to, the pre-artisanal mining landscape.

#### *Closure impact enhancement*

Closure impact mitigation measures include:

- Re-vegetation and tree nursery project activity to be undertaken by local residents of the Project Area, as covered in Employment benefits section.
- Enhancement of the positive economic benefits as a result of closure, as covered in Economy section.

#### 7.1.3.3 Summary

Potential Impact	Impact Characterisation	Potential unmitigated significance	Potential Residual Significance
<b>Land Use and Livelihoods (EBRD PR 1, 3)</b>			
Increased impacts to land and livelihoods from dust generated by Project use of the public road	Definite Direct, high moderate negative Long term Small range	Moderate	Minor
Decreased potential for illegal forestry through increased visibility of forest users	Definite Direct positive Long term Small range	-	-
Increased land disturbance and visual impact of Project activities	Definite Direct, high moderate negative Long term Small range	Minor	Very Low
Increased opportunity for artisanal miners to re-establish activities in Gatsuurt following mine closure	Possible Direct, high moderate negative Long term Small range	Minor	Very Low

#### 7.1.4 **Social Infrastructure**

##### 7.1.4.1 Impacts

The Gatsuurt Project will predominantly hire workers from the Project Area, however the Project has not defined a percentage of employment from the Project Area so it is not possible to determine the specific impacts on demands for social infrastructure. It is assumed that the workforce will come in part from each of the key areas in the Project Area, that is, Bayangol and Mandal *soums* and *soum* centres, and Tunkhel *bagh*, as well as other parts of the workforce will travel in shifts from larger centres including Darkhan and Ulaanbaatar.

The number of new employees moving in to the area is anticipated to be low, as prioritisation of local employment will mean that those employees and contractors are already resident in the Project Area. The location of the Project will mean that engagement of employees who are residents of Ulaanbaatar, Darkhan or Erdenet will not need to move into the Project Area for the purposes of employment, as employees will be able to access Project transport to get to and from site for each shift. A very slight

increase in workforce numbers and potentially their dependents may move to the area, but more likely, as was described in the section on Demography, the Project will enable residents to increase their mobility and move out of the local area as employee access to credit increases through the Operations phase of the Project. Overall, the net effect on social infrastructure such (as school enrolment numbers and demand on health clinics) is likely to be negligible from direct and indirect employment.

#### *Speculative economic in-migration*

The impact of speculative, economic in-migrants in the Project Area is expected to be low, as the overall level of Project-induced influx is estimated to be low (see Demography, Economy and Health sections). This will be influenced by mitigation actions to restrict employment and supplier opportunities to local citizens with a minimum residency requirement, and coordination with *soum* and *bagh* governments on appropriate messaging about particular economic opportunities that are available to individual and businesses outside the Project Area.

However, there will be a small increase of Project-induced influx expected which will still require management and mitigation in coordination with the relevant government bodies. In particular, challenges of in-migration will affect capacity in education and health services provision, and have different impacts on different areas within the Project Area. These impacts are described below, along with the direct impacts from the Project on education and in the next chapter, health.

#### *Education*

Robust work readiness training will be required from CGM for employees for the construction phase, as well as for potential employees in preparation for the capacity requirements of the operations phase. Baseline data and experience with the Boroo project suggests that it will be possible to source semi- and un-skilled labour from the Project Area for direct and indirect employment in the Project. The population in the Project Area is generally highly educated (combined population having vocational qualification or tertiary education is over 50%). There are declining rates of transition from secondary to high school, but with a higher female transition rate, influencing gender disparity in further education acquisition and employment opportunities later in life. The baseline reported that each year, around 40 percent of total graduate students go to universities. The remaining students go to *soum* TVET. This suggests a greater opportunity for the Project to positively support women's participation in non-traditional careers in mining, while immediately to support the construction and operations phases, access the 44 heavy equipment mechanic students studying at the Mandal TVET institution, as well as working with the institution to develop additional pathways to employment.

However, the highest percentage of the population with no education at all is seen in Tunkhel *bagh* (11%), due to the remote location of many households from schools in Tunkhel *bagh* centre. This means the Tunkhel cohort will require the most support in being able to access ongoing employment opportunities with the Project, beyond for example, the temporary tree-planting contract work that was undertaken by male citizens of Tunkhel for the Boroo Project.

For the more technical positions, professional training needs to be invested in a timely manner to enable CGM and its contractors to meet Project target timelines. It is anticipated that the Project will be able to access supervisory level skills from the existing and former Boroo workforce, as this cohort has direct experience with the company and its standards of work. This will supplement, at the construction phase,



particular skillsets likely to be through expatriate positions (e.g. BIOX® construction and commissioning, and start up training). If locally sourced workers cannot be found, the more skilled positions will have to be sourced from the wider *aimag*, nationally and potentially internationally, therefore limiting the employment benefits in the Project Area at all phases of the Project.

Investment in education and industry training is considered a positive impact through improving the human capital potential of the Project Area and the *aimag*. Boroo Gold Project had in place and successfully implemented a training plan, suggesting it is likely that CGM will be able to secure and train a predominantly local workforce. The geographic extent of the skill investment impact will be at the *soum*, *aimag* and national level, but predominantly at the *soum* level given the policy of prioritisation of the local workforce. The magnitude will be high positive if the Company successfully executes the training plan, particularly for Tunkhel. The duration will be long term as investment in people's skills will last beyond the life of the Project.

Project-induced impacts to education, although small, will potentially differentially impact different areas of the Project Area. For in-migrants with accompanying dependents, the existing kindergarten services are over capacity, with 13% of kindergarten children being turned away. While a ger kindergarten is available, this is predominantly designed to service herder and remote households over the summer period, so may not be an accessible alternative for all in-migrants. *Soum* centres (Baruunkharaa and Zuunkharaa) have school facilities at all levels, however the school classes are over capacity in all of the Mandal, Bayangol and *aimag* schools, and there is no dormitory for rural or remote students to stay in Tunkhel, thereby limiting some Tunkhel *bagh* students access to education. Project-induced in-migration has the potential to create low-moderate, negative impacts on an already stretched education services in the Project Area over the life of the Project (beyond the life of the Project).

#### 7.1.4.2 [Enhancement and Mitigation Measures](#)

##### *Education*

Actions to mitigate and enhance impacts to education include:

- Updating the Training Plan to reflect current Gatsuert specific requirements such as the detailed human resource requirements and timing for the life of the Project.
- Engagement with TVET institutions (Mandal, Darkhan, Erdenet) for sourcing the pipeline of existing construction and mining skills talent, and for provision of work-readiness training to high potential construction and operations staff, prioritising those from the Project Area, for construction, operations and closure phases.
- Design and implement a scholarship programme to encourage the study of subjects of relevance to the Project needs, targeting high potential graduates from the Project Area, weighted to Tunkhel *bagh*, for implementation in construction, operations and closure phases.
- Review the BGC recruitment policy to ensure consistency the Labour Code, Mongolian law and good industry practices.

- Map the training plan and skill needs of the Project with skill gaps in the Project Area to enable design of appropriate responses to improve opportunities for prioritization of recruitment of the local workforce by the Project. This will include monitoring mechanisms with targets for employment of people from the Project Area, including of women.

Engage with schools, TVET providers and universities to support industry learning through the operations phase.

- Conduct ongoing implementation and review of the Training Plan to ensure that Project needs are met and align with policy for prioritisation of local employment and targets set at the construction phase.
- Monitor effectiveness of workforce training delivery (in-house and third party) and implement any corrective actions as necessary.

#### 7.1.4.3 [Summary](#)

Potential Impact	Impact Characterisation	Potential unmitigated significance	Potential Residual Significance
<b>Education</b>			
Increased pressure on education services from speculative in-migration	Probable Indirect, low moderate negative Long term Intermediate range	Moderate	Minor

### 7.1.5 **Health**

#### 7.1.5.1 [Impacts](#)

The key aspects to health during the life of the Project relate to the impacts to:

- Provision of health services, both to the workforce and to communities in the Project Area;
- Worker health and safety, in particular the risks of working on a new site; and
- Community health, comprising: communicable diseases, traffic-related accidents and incidents, and security and social cohesion.

#### *Health Services*

In the event of accidents or health emergencies in the workplace, direct and indirect employees of CGM will have access to site medical services, or health services provision in Ulaanbaatar or elsewhere in the event that medical issues cannot be treated on site. This may include the hospital constructed with Centerra investment in Ulaanbaatar. It is not likely that the workforce will create significant additional demand on health services in the Project Area, as the majority of the workforce should be sought from within the pool of existing residents. CGM provides medical assistance to workers to facilitate ongoing health maintenance and education, including vaccinations against typical infectious diseases prevalent in the area such as tuberculosis and tetanus; provision of fresh and healthy food for employees at camp during their shifts; and education in healthy eating and good sanitation practices. The medical services provision and capacity building measures were successfully applied at the Boroo project with the workforce OHS team and the camp and catering contractor and will be applied similarly for the Gatsuurt Project.

Provision of work-related health services to staff is likely to have no net impact on public health services in the Project Area, as the workforce for non-work related health issues will still seek some local services. However, as with professional and vocational education, both workforce health services provision and capacity building in good health practices are considered a benefit that will extend beyond the life of the Project, and have the potential for secondary positive impacts into worker's households.

Project-induced impacts to health, although small, will also potentially differentially impact different areas of the Project Area. Healthcare is a necessity for in-migrants of all ages so speculative in-migrants with dependents will multiply the burden on health services. Poor availability of healthcare personnel is an issue throughout the Project Area and baseline survey respondents cite that they receive poor quality of health care as the most important problem with existing health services. Most health services are provided in Sukhbaatar or Zuunkharaa. Despite recent small increase in the number of doctors in Selenge *aimag*, the numbers are still inadequate to meet existing requirements and demand. Mandal has a significant shortage of doctors but a relatively better supply of nurses, while Bayangol lags against recommended and national averages for both professions. Tunkhel *bagh* baseline survey respondents indicated that the distance costs and availability of transport to health facilities are barriers to access to health services, suggesting it is the least supported settlement in the Project Area for healthcare. Project-induced in-migration has the potential to create low-moderate, negative impacts on an at-capacity health services with in the Project Area over the life of the Project (beyond the life of the Project).

### *Worker Health and Safety*

The most accidents in the life of a mine tend to be when workers, processes and supervisors are new to roles. The Department of Mines and Petroleum in Western Australia investigated "Fatal accidents in the Western Australian mining industry 2000-2012"<sup>218</sup>. Key factors influencing fatalities were:

- The duration of the deceased in the role: almost one-third of fatalities occurred in the person's first year in a role, with 48% of fatalities being workers who had been in their role for two years or less.
- Duration at the mine site: regardless of experience elsewhere or years in an occupation, workers at the site for less than one year accounted for 49% of fatalities.
- Supervisor's duration in the role: 68% of fatalities occurred during the supervisor's first three years in the role.
- Compliance with procedures: many accidents are repeat events where both the hazard and the precaution or controls that will prevent injuries are known (73% of fatalities). However, there was either no procedure in place or the procedures or rules were not complied with in 89% of fatalities.

Lessons learned from these international experiences can be applied to the Gatsurt Project, as the possible impact to worker health and safety (whether lost time injuries – LTIs – or fatalities) is due to commencement of work at a new site. The Gatsurt Project may include a number of new dimensions in comparison to the Boroo experience, all of which contribute to heightened potential impacts to worker

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<sup>218</sup> Department of Mines and Petroleum, 2014, Fatal accidents in the Western Australian mining industry 2000-12: what lessons can we learn? – report.

health and safety: new operators, the new mine, new equipment, new technology (in the BIOX® facility), and new hazardous materials (explosive xanthates in the flotation circuit).

Experience at Boroo indicates that most recent incidents have been with employees (2 LTIs in the past two years), however over the years, the most significant issues have been with contractors. Internal evidence shows that contractors follow their contracted requirements well where strong guidance is in place. Penalties have been applied in the past where contracts have been flouted.

The inspection frequency in Mongolia by agencies is low – inspections are rarely on safety, and only sometimes on occupational health – so the Project needs to initiate and act on this responsibility to ensure its workers health and safety.

The potential impacts are possible but highest in the first 12 months of construction and operations, with potential to impact at the regional level, in a direct, major negative manner.

### **Unplanned emergency events**

Unplanned emergency events have the potential, when these are significant unmitigated events, to cause impacts to health. These include environmental, social and/or safety impacts resulting from:

- Major fire / explosions / other major industrial or construction accident (including fatalities);
- Pit wall failure;
- Flooding at mine;
- Seismic event;
- Forest fire;
- Infectious disease outbreak;
- Medical emergency;
- Unauthorised access;
- Extreme weather / natural disasters;
- Political crisis / illegal detention / terrorist attack;
- Long term loss of water or power to site, potentially impacting human health on site; and
- Other unplanned emergency event.

Experience at Boroo suggests such unplanned emergency events are not likely, although have the potential to be direct, major negative impacts over short to intermediate range in the short to medium term.

### *Community Health*

The Project is likely, through direct and indirect actions, to create the risk that community health, safety and security will be negatively impacted. Integrating information collected during the baseline study and stakeholder interviews identified potential positive and negative impacts of Project development.

The focus of this assessment is on social impacts which relate to: unauthorised site access; community health, safety and security; potential toxicological or environmental health risks are outside the scope of this assessment.

### **Unauthorised access**

Mine sites are inherently dangerous places, and so threats to public safety exist particularly where members of the community could come onto the site without authorisation or appropriate induction, safety equipment or site knowledge, and activities such as blasting could cause serious accidents or fatalities. This potential impact applies to human health and safety of members of the community or any employee or contractor not currently working, from access to mining facilities at Gatsuurt or processing facilities at Boroo. This potential impact is possible, direct major negative due to a threat to human life, long term (for the life of the Project) and applies to the direct Project area (small range).

### **Communicable diseases**

The CGM workforce is already mobile, and increased activity near Tunkhel opens up the potential for greater Project-induced health impacts in that community in particular.

The rapid increase in population at a single point (construction or operations camps), coupled with a potential (albeit small) population of in-migrants to the Project Area, increases the risk of introducing and spreading communicable diseases. Close living conditions at camp and poor field sanitation can increase the risk of communicable diseases, as well as food and water-borne diseases. The infectious disease profile in the Project Area is: 60% sexually transmitted infections (STIs); 25% is tuberculosis (TB); and 2% is Hepatitis C. The remaining 13.5% of infectious disease occurrence is related to other common type of transmissible infections. The introduction and spread of communicable disease may be an indirect negative impact, which could be regional and long term.

Population growth associated with construction activities increases the risk of spreading STIs such as HIV/AIDS, viral hepatitis and syphilis within the local community. Behavioural risk factors such as elevated rates of alcohol use, and a potential influx in sex workers attracted by the presence of a predominantly male workforce, will further increase the likely incidence of high risk sexual behaviours; these are exacerbated by relatively low use of condoms. Groups most at risk are those with existing high-risk behaviours. Hence, the further spread of already high rates of STIs is a probable indirect negative impact that would be regional and long term, occurring during both construction and operational phases.

### **Traffic incidents**

Vehicle traffic, particularly heavy trucks, will increase as a direct result of the Project. This will include vehicles bringing construction materials to the site, as well as transportation of workers and goods within and between Project areas, and significantly, of haul trucks along part of the public road between Gatsuurt and Boroo. This increase in heavy vehicle traffic presents a risk to the local community of accidents that could result in anything from minor injury to serious injury or death. In addition, local emergency response capacity is limited (limited availability of resources to respond to accidents, transportation and equipment, with the exception of CGM's own emergency response team and equipment). Hence, response time to potential accidents is unlikely to be rapid, increasing the potential risk that any incident will be severe in outcome.

Injury or death from traffic impacts from Project vehicles is a direct negative impact that will be localised and long term (i.e. through the life of the Project, but at highest risk during the operations phase when haul trucks will be operating).

A traffic survey was undertaken to inform the baseline research (2015). In the Project Area, the main causes of traffic accident in Bayangol are driving on the wrong side of the road and speeding, while in Mandal the main causes of accidents are drunk driving, speeding and failure to brake. Almost a third of all crime in Bayangol relates to traffic safety and the use of motor vehicles, which is likely due to its proximity to the paved road between the Russian border and Ulaanbaatar.

The Assessment of Community Investment of Boroo Gold (2012) revealed that the most recognised public investment by the community was the road. According to respondents, the road has had a positive impact on local economic development, because such road access gave local micro and small businesses much better access to a wider market (UB as well as local buyers), allowing SMEs to spend time on growing their businesses. Improved cash flow was also identified as a benefit, the consequence of which was an increase in purchase of vehicles (Mandal *soum* had 1,200 sedan cars in 2008, up to 1,700 in 2011). However, an unintended consequence is that a few of the respondents were concerned about safe driving on this road, because they knew of a number of accidents where animals of herders were hit and killed.<sup>219</sup>

The public road to be used as a haul road between Gatsuurt and Boroo currently has a gravel surface. Since construction in 2010, key informants report that driver speeds have increased because, relative to other public roads, it is in good condition. Although the Government's Temporary Rules<sup>220</sup> indicate that a haul road in Mongolia should be paved, this issue has been debated locally, including that:

- The road should be paved, to reduce dust;
- The road should not be paved, to decrease speeds at which drivers can travel on the road, thereby reducing accidents;
- The road should be further improved (better signage, passing points) in advance of its use by haul trucks; and
- Vehicles in poor condition should be removed from the road, especially those with broken windscreens/no sun visors (i.e. driver has limited sight of oncoming traffic/livestock when driving west into the sun glare on the public road west).

The majority of vehicles travelling along the Gatsuurt public road are light vehicles, and the main causes of traffic accidents in the Project area are due to risky driving practices. It is clear that road/traffic safety and vehicle use with respect to public safety and crime is already an issue in the Project Area, however it was unable to be established whether there are any Government programs to mitigate risky driving practices and raise awareness of road safety in the Project area. Boroo Project has conducted a road safety campaign in the past.

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<sup>219</sup> Assessment of Community Investment of Boroo Gold, 2006 – 2011 (Training Evaluation Research Institute, 2012).

<sup>220</sup> Temporary Rules for the construction, use and maintenance work of roads for the transportation of mining products, Annex to Order No. 159 dated 30 May 2012.



Based on the traffic survey, the peak travel times for all vehicle types on the public road is between 2pm and 11pm, with a peak at 7pm of a total of 32 and 24 vehicles passing in both directions at locations 2 (the Zuunkharaa junction) and 1 (the Boroo junction) respectively.

The predicted mine traffic will be 30 tonne haul trucks, and a mix of passenger vehicles and minivans for the movement of staff and goods between Project sites. Mine traffic will tend to travel slower than personal vehicles, both laden haul trucks and vehicles for transporting goods between sites and staff to/from sites for shift changes. This will likely result in more passing by local traffic of mine traffic on the road, which brings a higher potential for accidents.

### **Security and social cohesion**

The Project creates the potential impact of local conflict or social fracture due to

- The presence of security (e.g. at gates);
- Actual or perceived treatment by or benefits from the Project to one community or stakeholder group over another; this may include in-migrants in search of economic opportunities; and
- Disruption to communities by staff or contractors, which may include petty crimes such as theft.

The experience at Boroo site has been that incidents between security and the community are rare. Interactions with the potential to cause risks to human safety have included eviction of artisanal miners at the Boroo site alongside police. Security contractors have been trained in the Voluntary Principles on Security and Human Rights, internationally recognised principles to guide companies in maintaining the safety and security of their operations within an operating framework that encourages respect for human rights.

A disruption to social cohesion is a potential impact to the local community due to Project-induced influences including: speculative in-migrants; access to or perceived changes to natural resources. This may result from:

- Jealousies from securing / not securing training or employment with the mine compared to in-migrants or other *soum/bagh* citizens;
- Subsequent perceived or actual wage differences within or between CGM employees and contractors;
- Social fracture / antisocial behaviour (exploitative sexual behaviour, alcohol use, petty crime) as a result of a lack of employment or from increased disposable income; and
- Artisanal miner presence and actual / perceived impacts on the environment from their activities.

Attitudes of *soum* residents are mixed towards in-migrants. The baseline showed that 50% of survey respondents in Mandal and 56% of Bayangol *soum* support migrants from different *soums* and *aimags*, indicating increases in population and benefits in-migration can bring. Negative responses included increased competition for natural resources, that outsiders are dangerous and will decrease job opportunities for local people. This suggests the potential for speculative job seekers in-migrating to the Project area will face social integration challenges; localised potential social fracture from in-

migration is possible, and of potential long-term duration (see further discussion on herder conflict in section 6.6.3.3).

The Baseline additionally indicated that in both *soums*, the CRK and *soum* government have the greatest overall levels of trust from within the community (with political movements and NGOs the least). Efforts to work together with all of these institutions, recognising community perspectives, will likely help facilitate positive engagement.

#### 7.1.5.2 Enhancement and Mitigation Measures

##### *Health Services*

Mitigation of impacts to health services from the Project include:

- Ensure that all CGM employees and contractors are provided with adequate health care for work-related issues and injuries that is independent of the local health care system;
- Mitigate the potential pressure on health services resulting from in-migration through liaising with local health professionals to identify ways that the Project can provide sustainable, non-capital investments in the health services; and
- Engage with the Government and Municipality in improving the medical infrastructure and services.

##### *Worker Health*

##### **New site risks**

Sites need to be conscious of new arrivals, whether experienced or not, and the need for time to familiarise themselves with the day and night working environments, new colleagues, supervisors and work processes. Trends in fatalities (in Western Australian mines) indicate the importance of effective induction, training and supervision of new workers in the first months of employment or contract, including. Mitigation measures include implementation of existing relevant measures from Boroo to Gatsuurt, including:

- Provision of induction, training and supervision in the first months of employment, for both staff and contractors.
- Implementation of training procedures and verification of competency to become familiar with the site and its hazards, as well as the hazards within the task and site's method to complete the task.
- Conduct risk assessments for new tasks, systems of work and plant.
- Contractor management requirement of a minimum level of OHS to be met through the contract duration, with action/penalties in response to any breaches.
- Implementation of prequalification / screening processes prior to contracting.
- Contract Performance monitoring including of inductions, daily safety toolbox meetings, monthly contractor management meetings on safety.
- MSDS in place for new materials, training for staff, including retraining and new training for BIOX® facility, with SOPs to be developed for the BIOX® facility.

- Emergency response plan in place, with ongoing training should it need to be implemented.
- New measures for haulage and BIOX.

### **Unplanned Emergency Events**

To mitigate the risk of severe injury and death from emergency events such as industrial process and equipment accidents and explosions, CGM will implement the existing relevant measures from Boroo to Gatsuurt, including:

- Review the Crisis Management Plan and Emergency Response Plan, already in place by CGM, for relevance to the Gatsuurt context.
- Disclose the Emergency Management Plan (EMP). Undertake engagement with emergency response organisations on emergency response issues.
- Continue application of the International Cyanide Management Code (ICMC) for the manufacture, transport and use of cyanide to ensure good international industry standards are applied and maintained in how the company procures, transports, stores, uses, disposes of cyanide.

### *Community Health*

#### **Unauthorised Access**

To mitigate the potential threat to human health and life from gaining unauthorised access to any part of the Project site, during construction, operation and (to a lesser but no less dangerous degree) closure, the existing relevant mitigation measures from Boroo to Gatsuurt will need to be implemented:

- Exclusion of public from active mining areas to minimise impacts of blasting;
- Use of security personnel to ensure no unauthorised public access;
- Signage at all entrance/exist points and periodically on boundaries/fenced areas;
- Regular stakeholder engagement program to notify of key safety issues on, around and offsite; and
- Outreach program to periodically bring visitors for site visits in a controlled and safe manner.

#### **Communicable Disease**

To mitigate the potential introduction and spread of communicable diseases related with construction and operation, the following mitigation measures will need to be implemented:

- Ensure health screening is being conducted for employees and contractors before contracting workers and on a periodic basis throughout their employment/contract;
- As part of health and safety induction for workers, provide awareness training on STIs and other communicable disease prevention. Provide this training on an ongoing basis;
- Work in collaboration with the onsite Project medical team to ensure that such awareness and education training is appropriately provided to both direct employees and contractors; and

- Identify opportunities to support local public health campaigns that focus on prevention of communicable diseases and STIs.

Additionally, to mitigate the potential introduction and spread of STIs indirectly related with the Project, the following mitigation measures should be implemented:

- Identify opportunities to support local public health campaigns that focus on prevention of communicable diseases and STIs; and
- Strict enforcement of a policy of no prostitution around the camps, and immediate dismissal of any workers found to be using prostitutes.

### **Traffic incidents**

To mitigate potential traffic accidents / fatalities on the public road between Gatsuert and Boroo between Project vehicles and public traffic, the following mitigation measures will need to be implemented:

- Development and implementation of a Traffic Management Plan, effective for direct and indirect employees, comprising strategies to manage vehicles and equipment during the execution of all phases of the Project.
- Minimise the potential for speed-related accidents / interactions between Project and public traffic by retaining the gravel road for the duration of the Project, including:
  - Maintenance of the existing road as per the existing *soum*-level agreement.
  - Set aside of funds by the Project to upgrade and modify the road for public use only on completion of the Project, should this be agreed with relevant authorities as part of Mine Closure Planning.
- Design and implementation of specific road engineering controls to minimise the potential for incidents, including:
  - Construction and establishment of safe passing places with appropriate signage to enable Project traffic to pull over while local traffic can pass safely without facing oncoming vehicles.
  - Engineering controls to prevent passing on blind corners/crests.
- Implement the existing Boroo project driver controls to minimise the potential for incidents, including:
  - Speed control / limits by vehicle type / time of day / driving conditions.
  - Boroo Drug and Alcohol Policy.
  - Driver training and assessment.
  - Driver identification / clear vehicle numbers for easy identification by other road users.
  - Penalties for verified incidents of any poor driving / speeding.
  - Personal protective equipment for drivers.

- Haulage scheduling to minimise potential interactions with public vehicles (including, avoiding a haul schedule at peak public vehicle use times or westbound at sunset).
- Truck controls of covering loads (no unsecure loads) to prevent loose rocks from haul trucks from falling off and hitting cars.
- Engagement with regulators to minimise potential incidents:
  - Establishment and enforcement of speed limits.
  - Conduct vehicle spot checks for safety.
  - Enforcement of blood alcohol limits.
  - Development and training of vehicle emergency incident response including roles and responsibilities.
- Engagement with the community to minimise potential incidents:
  - Develop and deliver road safety campaigns with relevant partner organisations, highlighting speed limits, safety belts, and vehicle maintenance; particular campaign actions should also target vulnerable groups such as elderly drivers and children.
  - Provide advance public notification of the schedule haulage times, frequency and road risks to road users, using television as the preferred medium of communications as well as newspapers and CROs, as documented in the Stakeholder Engagement Plan; notification will be provided prior to commencement of haulage.
  - Provide notification of the Grievance Mechanism should any nuisance issues or complaints against particular drivers arise.
  - Provide notification of emergency services details (including on the roadside as well as through media) in the event of minor or major accidents with people, other vehicles or livestock.
- It should be noted that mitigation for interactions with livestock on the public road are the same as the above for people and/ or other vehicles.

### **Security and social cohesion**

To mitigate the potential safety and security related impacts from the Project, the following mitigation measures will need to be implemented:

- Ensure that Project security is aware of the Project's goals to establish good relationships with local stakeholders; and the grievance mechanism for communities to voice concerns; additionally, ensure that security personnel receive and remain up to date on human rights and cultural sensitivity training to ensure the respect and protection of the local community; conduct ongoing monitoring of security personnel.
- Implement and provide training in the Code of Conduct specific to security personnel, which outlines appropriate conduct, engagement and appropriate use of force, and audits of the application of the Voluntary Principles.

- Continue stakeholder engagement efforts to ensure that all potentially affected stakeholders know how to contact the company and to file grievances (in accordance with the Grievance Procedure).
- Provide workforce accommodation on site to minimise interactions with local communities while working (including the construction, operations and closure workforce).
- Minimising the potential for speculative job-seekers/ economic opportunity seekers (as per Demography) thereby limiting potential for conflict with residents.
- Implement the Camp rules for employees and contractors mitigating interactions offsite with communities and training to ensure respectful and appropriate behaviours are understood and practiced at all times.
- Implementation of security staffing practices as per arrangements that have been in place at Boroo, including regular liaison with state security.

### *Enhancement Measures*

In addition to the proposed mitigation measures, the Project commits to providing long term economic benefits to communities in the Project Area, under the auspices of the *Soum* Development Fund investment into Mandal and Bayangol *soums*, Tunkhel *bagh* and Selenge *aimag*, to those who may be indirectly impacted by Project activities, and as such commits to the following enhancement measures:

- Development of improved economic opportunities for community members who are adversely impacted by the Project according to an agreed development plan (Community cooperation agreement, for which the legislated process is yet to be finalised, for use between senior government officials, company and community representatives).
- Regularly review and update the Stakeholder Engagement Plan (SEP) as attached to this SIA to provide for ongoing project communications and consultation.
- Induction of all employees (including nationals, locals and expatriates) to manage expectations on camp requirements (including work behaviours, camp living requirements).
- Sustainable community development projects developed in partnership with local government, civil society and community members, to ensure their relevance and ownership of implementation and outcomes.

#### 7.1.5.3 Summary

Potential Impact	Impact Characterisation	Potential unmitigated significance	Potential Residual Significance
<b>Health (EBRD PR 1, 4)</b>			
Increased pressure on health services from speculative in-migration	Probable Indirect, low moderate negative Long term Intermediate range	Moderate	Minor
Increased risk to workers of accident, injury or fatality in working on a new mine site	Possible Direct, major negative Short term Extensive range	High	Moderate



Risk of unplanned emergency events impacting workers, emergency responders, Government agencies and communities in the Project Area	Unlikely Direct, major negative Short to medium term Small to intermediate range	High	Moderate
Threats to human health and safety of communities from access to mining facilities at Gatsuurt or processing facilities at Boroo	Probable Direct, major negative Long term Small range	High	Moderate
Increased risk of the spread of communicable diseases within the workforce and between the workforce and the community, including STIs	Probable Indirect, low moderate negative Long term Intermediate range	Moderate	Minor
Risk of road accidents, incidents or fatalities on the public road between Gatsuurt and Boroo site, between Project and public road users	Definite Direct, Major Negative Intermediate scale Long term	High	Moderate
Risk of antisocial behaviour or social fracture induced by Project activities in the Project Area, including between and within communities and the Project workforce	Likely Direct and indirect High moderate negative Intermediate range Long term	Moderate	Minor
Strengthened and sustainable community development initiatives implemented in partnership between the Project and key stakeholders	Positive Direct Long term High moderate Intermediate range	-	-

### 7.1.6 Cultural Heritage

Potential impacts to cultural heritage from the Project are discussed here, encompassing tangible archaeological heritage as well as intangible cultural heritage in the Project Area, comprising indirect disturbance of cultural heritage and archaeological resources through landscape or site changes, or a loss of cultural values at any of construction, operations or closure phases of the Project.

#### 7.1.6.1 [Impacts](#)

##### *Approach to Assessment*

Mongolian Heritage legislation includes The Law of Mongolia on Environmental Impact Assessment, 2012 and the Law of Mongolia on the Protection of Cultural Heritage 2014 (Article 7: Intangible Cultural Heritage), which sets out basic definitions. To evaluate the potential impact on cultural resources, it is first necessary to evaluate the significance of the resources. The current Mongolian legal framework does not have any specific standard approaches to guide evaluation of the importance of physical cultural heritage sites.

An important distinction must be made between archaeological sites within the actual footprint of the proposed Project and sites outside the actual construction footprint but within the area of potential effect (APE). In general, sites within the APE but outside of the actual construction footprint may not be directly impacted by construction and operation of the proposed Project. However, the APE also considers potential impacts to cultural heritage sites from vibration associated with blasting and mitigation planning considers these potential impacts.

Mitigation measures should be taken to avoid or minimise impacts, to the extent practicable. The following are available mitigation measures:

- Avoidance, which could be accomplished by shifting the proposed Project footprint away from the resource, by limiting activities in the vicinity of the resource, by monitoring construction activities near the resource, or by any combination of these techniques.
- Minimisation, which would reduce to the extent possible the impact to the resource through avoidance measures as described above, but would not completely avoid the resource.
- Mitigation, which, when impact to a resource could not be avoided, would offset that impact through some means such as protection of a similar resource nearby, detailed documentation of the resource through data recovery excavations in the case of archaeological sites, contributions to the preservation of cultural heritage in the affected community, interpretative exhibits highlighting information gained about cultural resources through the proposed Project, or some combination of these strategies.

Impacts to cultural resources have been assessed for all of the sites in the Project area by considering how effectively the impact to the resource is avoided, minimised, or mitigated, to the extent practicable.

### *Archaeological Resources*

Archaeological resources have been investigated in the Gatsuurt Project area through three surveys.

In October 1999, the Archaeological Centre of the Institute of History of the Academy of Sciences carried out a survey in the Gatsuurt valley. This was followed in June and August 2005 by research from the Department of Anthropology and Archaeology, National University of Mongolia. The surveys investigated the Centerra concession block area and along what were the proposed access road areas from Gatsuurt valley to Boroo gold mine and Gatsuurt valley to Tunkhel village. In 2015, the Mongolian Academy of Sciences Institute of Archaeology on behalf of the Government of Mongolia conducted an additional archaeological survey on the Gatsuurt Mine and surrounding areas.

The initial two investigations identified 57 archaeological sites, which belong to the Bronze Age period up to the Turkic period (2000 BC to eighth century). All monuments were located near water sources, at the base of mountain slopes and in valleys. GPS coordinates documented by the research teams showed that all of the identified grave sites are located well beyond the perimeter of the Gatsuurt mine area. However, the results of archaeological investigation<sup>221</sup> amended this route, in this way, mitigation of potential impacts to tangible heritage were avoided or 'designed out' of the Project. The final road alignment, now in use, was selected to avoid impacts on any archaeological finds. No ancient graves, tombs and any other historic artefacts were identified at the Gatsuurt site and within the area defined by the Gatsuurt haul road constructed in 2010.<sup>222</sup>

A number of new archaeological sites within the Gatsuurt Mine Licence Area were noted in the 2015 study conducted by the Mongolian Academy of Sciences Institute of Archaeology, none of which were recommended for further investigation by the Institute. Artefact and heritage sites are mostly centred on two protected areas: Zuun Modnii Gol and Noyon Uul sites, which are outside the APE. The closest

<sup>221</sup> Report on Archaeological survey in Gatsuurt valley at Noyon mountain, Mandal, Selenge Aimag; June 16-24, 2005 and August 12-19, 2005 (Department of Anthropology and Archaeology, NUM).

<sup>222</sup> Gatsuurt Project Overview, March 2015.

heritage site of national importance is the Sujikhtai Hunuu Graves at Noyon Uul, which is 7km from the Gatsuurt mine and outside any potential influence from blasting or vibration impacts.

### **Project Effects and Potential Impacts**

Effects occur when an undertaking changes, directly or indirectly, the characteristics of a significant historic property in a manner that diminishes the historical integrity of the property. Reasonably foreseeable effects caused by the undertaking may occur later in time, be distant, or be cumulative. It is recommended that the client and regulatory agencies confer with stakeholders when there are potential adverse effects, to discuss potential mitigation options, and select a preferred mitigation. For the proposed Project, the following are the principal types of effects that could occur:

- Physical destruction or damage to all or part of the property caused by ground clearing activities;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's historic features by construction and operation of the proposed Project; and
- Change of the character of the property's use or of physical features within the property's setting that contribute to its significance.

Construction and operations will have similar impacts on cultural resources, and thus are discussed together.

### **Construction and Operations Impacts**

Only a few of the archaeological heritage sites are located within the Gatsuurt Project footprint or within the APE, and as described above these sites have not been recommended for any further investigation by the Mongolian Academy of Sciences Institute of Archaeology. Physical damage to these, or any other archaeological sites and resources because of Project-related activity will not occur. The presence of the Project potentially somewhat increases accessibility of the archaeological sites and so increases the potential for access, theft or damage to heritage resources, however it should be noted that there are no access roads from the Gatsuurt site to the Hunuu grave site at Sujikhtai.

The proposed Project could involve various cultural resources impacts, including the unanticipated discovery of previously unknown cultural resources within the Project footprint. This is considered unlikely, as the steep and narrow and shaded environment of the Gatsuurt valley is not a typical environment for archaeological finds, with potential impacts intermittent and short term. Direct impacts, such as unanticipated discovery of previously unknown cultural resources during construction, could have a permanent impact on that resource.

### **Closure Impacts**

During closure and post-closure, decreased activity on the Gatsuurt site could further increase accessibility to heritage sites, as there will be security presence at Gatsuurt post-closure of the site.

### *Intangible Heritage Culture*

### **Assessment Approach**

To evaluate the potential impact on intangible heritage cultural (ICH), it is first necessary to evaluate the significance of the resources. ICH is unique to a country or community, and as such national laws and community sentiment were used to determine the value of ICH resources in the study area. The ICH study found that the majority of people interviewed think their ICH is important and want to preserve these practices, and continue to pass these traditions to future generations. At present, Mongolia does not have established criteria for ascribing significance to ICH.

For ICH, an important distinction must be made between the actual footprint of the proposed Project and the Project Area. ICH is typically affected by indirect project impacts, rather than activities such as grading. As such, the Project Area for ICH generally coincides with the Project Area determined for social resources.

### **Project Effects and Potential Impacts**

The criteria for determining Project effects on ICH in the study area were based on a guidance document provided by the International Council on Monuments and Sites (ICOMOS 2011). According to ICOMOS criteria, Project impacts to ICH can be categorized as follows:

- **Major Impacts:** Major changes to area that affects the ICH activities or associations or visual links and cultural appreciation.
- **Moderate Impacts:** Considerable changes to area that affects the ICH activities or associations or visual links and cultural appreciation.
- **Minor Impacts:** Changes to area that affect the ICH activities or associations or visual links and cultural appreciation.
- **Negligible:** Very minor changes to area that affect the ICH activities or associations or visual links and cultural appreciation.
- **None:** None

Construction and operations will have similar impacts on ICH, and thus are discussed together.

### **Construction and Operations Impacts**

The Project infrastructure at the Gatsuurt site has been constructed to avoid ovoos as places of worship. Further, extraction of materials for the construction of Project facilities is to avoid being sourced from locally sacred mountains and places, to avoid adverse effects felt by local communities.

The proposed Project could involve various ICH resources impacts, including the following:

- An influx of outsiders to the area in search of speculative economic opportunities could further open the communities to external forms of cultural influence, potentially including: religious practices and forms of social interaction. This includes further practices of mountain worship that may not be consistent with or respect the taboos and myths associated with the mountain as practiced and marked by native citizens, as was outlined in the baseline, or, disruption to oral histories which are a major source of information about cultural heritage in the Project area.

- Loss of medicinal plants in the Project area, or modified access to these plants, could affect traditional medicinal practices in the *soums* and *baghs*, which are practiced more in Tunkhel *bagh* than elsewhere in the Project Area.

### **Closure Impacts**

Closure of the mine will result in a return of the Project area to non-mining (commercial or artisanal) uses, and a decline in investment into cultural heritage resources by the Project and a decline of potential influence by non-native citizens on local practices.

#### **7.1.6.2 Mitigation**

##### *Archaeological Heritage*

CGM has put in place the measures to mitigate potential effects to archaeological heritage including the provision of accommodation for the workforce at Boroo to limit accessibility by employees and contractors to heritage resources. Interference with cultural heritage sites by employees and contractors is prohibited by the employee and contractor Code of Conduct. Further measures include the minimisation of published detail about known heritage resources to prevent theft or damage to sites, unless based on the advice of cultural heritage experts. CGM will also implement the Chance Find procedure as the key policy that requires anyone working on the mine, to stop work and investigate any archeological find they come across by chance, including cessation of work in the vicinity of potential significant finds and notification of relevant authorities. Further, in relation to the newly recorded (2015) sites within the Gatusurt Mine Licence Area, CGM will consult with the Mongolian Academy of Sciences Institute of Archaeology prior to any disturbance (it is not anticipated that there will be any requirement to disturb these sites).

##### *Intangible Heritage*

Measures to be implemented by the Project to mitigate potential effects to intangible heritage include implementation of an induction program which includes cultural awareness training for all employees and contractors, developed with input from native expert citizens, to decrease likelihood of damage and disrespect to local heritage practices and sites. CGM will also avoid sourcing construction materials from locally sacred sites. Furthermore, CGM will ensure that the public's access to cultural heritage sites continues to be unimpeded by the Project's use of the Gatsurt haul road throughout the Project life.

A stakeholder engagement and grievance process will be implemented to direct ongoing engagement with local stakeholders. The stakeholder engagement and grievance process will have a particular focus on those practicing herding traditions, and the Project's impacts and the mitigation measures to minimise any effects to the pasture and water resources that are a critical part of herding practice, and an ongoing and responsive program on pasture improvement (see also Land Use). Furthermore, the Project will work with the *soum* governments and community groups to support local cultural events and conserve and reinforce local traditions and culture.

Should monitoring determine that ICH is being impacted, or community members express a concern in the future that it is being adversely affected; mitigation measures should be employed to minimise these effects. Potential mitigation measures include providing support to local institutions to be able to meet the information and educational needs of communities with respect to cultural heritage in response to evidence of the lack of local expertise in cultural heritage. CGM may also establish an oral-

history program to be based in the *soum* cultural centre to enhance oral traditions in the Project Area and also, prepare exhibits and public programs that inform local residents about intangible and tangible cultural heritage.

#### 7.1.6.3 [Summary](#)

Potential Impact	Impact Characterisation	Potential unmitigated significance	Potential Residual Significance
<b>Cultural Heritage (EBRD PR 1, 8)</b>			
Risk of theft of or damage to archaeological heritage in the Project Area	Direct and indirect Unlikely – possible High moderate negative Intermediate range Long term	Moderate	Minor
Risk of disruption to locally important cultural heritage practices	Direct and indirect Possible High moderate negative Intermediate range Long term	Moderate	Minor

## 7.2 CUMULATIVE IMPACT ASSESSMENT

The cumulative effects of the Project and other potential developments are considered in this section. The assessment considers cumulative impacts of the Project in combination with impacts from other relevant past, present and reasonably foreseeable developments as well as unplanned but predictable activities enabled by the project that may occur later or at a different location, as required by the EBRD Performance Requirements<sup>223</sup>.

The cumulative impacts assessed for a project generally parallel the various social impacts evaluated by the project (e.g. incremental contribution of in-migration into a community, etc.). As such, the cumulative impacts assessment is integrated into the overall ESIA process, being incorporated into: (1) scoping, (2) describing the baseline conditions of the affected receptors, and (3) determining the social consequences of the project, when considered in light of existing and planned projects in the region. It is important to note that cumulative impacts can be either negative (harm people) or positive (create employment opportunities, develop needed social infrastructure) and increase the quality of life in the region.

The methodology used for assessing cumulative impacts is basically the same as that used for assessing Project related impacts, as described in Chapter 5 Methods. The below table illustrates how a cumulative impact assessment is integrated into the (E)SIA process.

**Table 7.8 Incorporating a cumulative impact assessment into SIA**

<b>Incorporating a cumulative impact assessment (CIA) into SIA</b>	
<b>SIA Components</b>	<b>CIA Principles</b>
Scoping	Include past, present, and future actions. Include national and local government and private actions. Focus on each affected community. Focus on truly meaningful impacts.

<sup>223</sup> EBRD Environmental and Social Policy (2014).



Describing the Affected Environment	Focus on each affected community. Use natural boundaries.
Determining the Consequence	Address the additive effects. Address elements that counteract the effect. Address synergistic effects (interaction of multiple elements to produce a total effect). Look beyond the life of the project. Address the sustainability of communities.
Establishing Mitigation Measures	When developing project mitigation measures, consider the cumulative effects of project impacts on the region to develop appropriate mitigation measures and monitor its effectiveness.

Baseline data suggests that there are other existing major employers in the Project Area, notably those in Mandal *soum* centre, but no significant planned developments in the Project Area other than the proposed Project. The main employer in Mandal *soum* is the private sector, including the railway. As such, the cumulative issues faced in the Project Area relate to the aspects of economic investment, changes in demography and social infrastructure requirements.

### 7.2.1 Past development

A significant past development in the Project Area was the Boroo Gold Project, which made significant economic investments into the project area and nationally, through taxes and royalty payments, salaries for local employees, procurement and investments into community development. It also provided a stable, 10-year program of work for mostly local employees and training in international standard mining operations. According to research in the Social Closure Risk Assessment (2014), staff intentions with closure were a mix of retirement, seeking employment with other mines immediately, or taking a break and anticipating a future job at the Gatsuurt Project<sup>224</sup>.

### 7.2.2 Economic Investments

The economic investment of the CGM project is anticipated to play a significant role in the Project Area. The BGC Social Closure Risk Assessment (2014) found that the BGC contribution to social insurance to Bayangol *soum* was 19-23 million MNT/month, comprising 60-70% of all social insurance paid in the *soum* (indicating salary levels and the number of people employed by a single entity). In contrast, the main employers in Mandal *soum* are the Government administration (including inter-*soum* police and hospital), Prison (78 employees), MCS distillery (200 employees) and the railway (1,000 employees). There are 130-140 SMEs in the *soum*, employing about 30% of its residents and have an average of 8 employees. There are 208 other industries in Mandal and 80 other businesses in Bayangol (i.e. other than CGM). There are commercial exploration and mining activities in the *aimag* (e.g. in coal, iron ore), but these are not in Bayangol *soum*<sup>225</sup>. However, despite this figure of work places in the Project Area, new job creation tends to be declining and unemployment increasing. The number of new opportunities in Selenge *aimag* dropped by 8.2% between 2013 and 2014, and 3.3% in Mandal. Bayangol *soum*, on the other hand, experienced a 17.7% (93 new jobs) increase in new positions created in the same period. Unemployment increased by increased by 67.4% between 2012 and 2014 in Selenge *aimag*. The physical environment of Selenge lends itself to further economic investment, as the area has

<sup>224</sup> BGC Social Closure Impact Assessment (2014).

<sup>225</sup> BGC Social Closure Impact Assessment (2014).

proximity to markets by road and rail, good water supply and a large population in the economically active age category.

### **7.2.3 Traditional Livelihood Resources**

The development of the Gatsuurt mine, and the potential construction and operation of a range of future mining, agricultural, and industrial projects in the Selenge *aimag* region may lead to the creation of a range of other jobs in service and support businesses. While this creates improved employment prospects for local workers, it also presents a challenge to the maintenance of the traditional pastoral way of life.

The development of various industrial opportunities, and the associated infrastructure requirements, may place additional pressures on existing grazing areas, leading to reduced herder margins and pressure to abandon herding as an income source. If this is accompanied by further pasture degradation, these pressures will increase. In addition, if herders perceive that life as a mine worker, or as part of an influx population, is preferable to herding, then they will likely migrate to towns and abandon herding (compounding the existing trend of urbanisation in Mongolia). Should this occur on a small scale, it would have the likely effect of balancing against increased grazing / pasture degradation. However, if large wage disparities and significant pasture degradation lead to many herders abandoning herding, then this could lead to a permanent and major impact on the culture of the region. Pressure on the maintenance of traditional livelihoods is a multi-faceted challenge in today's Mongolia. This is due to the trend of increasing urbanisation throughout the country, as well as the unsurpassed alternative livelihood opportunities and choices facing young Mongolians.<sup>226</sup>

### **7.2.4 In-Migration and Social Infrastructure**

While the Project may induce some speculative in-migrants looking for economic opportunities, the overall trend in Mandal *soum* is for out-migration. The decline in migration to Selenge *aimag* is attributed to the difficulties experienced by migrants in obtaining access to pastureland and the fact that existing land is degraded through overgrazing and therefore a less attractive proposition for migrants. Concerns that have been raised by stakeholders include the need for ongoing strengthening of relationships between herders, citizens and CGM, including participation in joint meetings in which considerations will include co-existence of livestock breeding, farming and mining, that is, the cumulative effects on land uses.

However, baseline data shows that the Mandal population is becoming increasingly urbanised, which puts pressure on the social infrastructure and services for its citizens, and adds to the increasing number of un- or under-employed people seeking work. Unemployment is a significant problem in the Project area (increased by 67.4% between 2012 and 2014 in Selenge *aimag*), and most significant for young people, particularly in Tunkhel.

The Project will contribute to a decline in unemployment, and social investments through the *Soum* Development Fund will help to stimulate new businesses and business opportunities. The presence of a number of other large employers in Mandal opens up opportunities to work in partnership to ensure

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<sup>226</sup> Sustainability East Asia LLC. 2014. *Strategic Environmental and Social Assessment of the Mining Sector in Mongolia*.

there are more sustainable market opportunities through diversified a client base. Further, the preference in particular in Mandal to be self-employed has meant that there is a trend for starting new SMEs in the area. Research already suggests that the construction of the public road to Zuunkharaa has opened up new market opportunities and greater cash flow in the Project Area, however, the longterm cumulative impacts of road use must be jointly managed to protect human life and health through effective road safety measures. The Project has the opportunity to help stimulate new growth through its own direct purchases and provide support to *soum* Governments and the under- and unemployed to seek opportunities through social investments in human capital.

### **7.2.5 Cumulative Impact Conclusions**

Development of the Gatsuurt Project suggests that there will be both positive and negative cumulative effects in the Project Area, which link strongly to existing challenges in the area. These include challenging the maintenance of the traditional livelihoods and way of life in the context of modernisation and development; providing sufficient infrastructure services for what is an already changing population profile and social services that meet their changing needs; facilitating economic opportunities for the existing under- and unemployed population, particularly of young men with lower levels of education compared to women, and a general preference for self-employment rather than taking up salaried positions. The Project Area offers an existing and diverse range of businesses for seeking potential partnerships and benefits to enhance economic opportunities, however, the Project will have to work closely with the Bayangol and Mandal *soum* governments to ensure that in- and out-migration is monitored effectively, and that cumulative impacts are managed jointly. The Project will ensure that impacts to traditional livelihoods are addressed through ongoing engagement and social monitoring to gauge whether mitigation measures are acceptable to stakeholders. The Project is likely to contribute positively to local economic development, improve employment opportunities, and increase the human capital of the area.

## **8. SOCIAL MANAGEMENT FRAMEWORK**

### **8.1 INTRODUCTION**

The following chapter sets out an overview for the development of the Social Management Framework, which will be developed in full following Project approvals of the Gatsuurt Project by the GoM. Until such time, the Framework and Social Management Plan (SMP) has not been developed in its entirety. The SMP is to be established to assure that the mitigation measures proposed in the SIA are effectively implemented during the life of the project and are continually refined and modified as necessary on the basis of actual field conditions and circumstances which may not have been anticipated at the time of the SIA preparation, including appropriate adaptation of measures which have been applied by BGC in the construction, operation and closure of the Boroo Gold mine. The following framework covers the management system framework; organisational hierarchy of the CGM Government and Community Relations Team and integration into the existing CGM management framework.

### **8.2 MANAGEMENT SYSTEMS**

BGC have a Safety, Health and Environmental Management System (SHEMS) in place to manage current activities at the Boroo Gold Mine. Currently active for the Boroo Safety, Health and Environment aspects only, the SHEMS framework is proposed to be adapted and applied to the Gatsuurt Project to include the management of SHE and social aspects, commitments and Community Relations (CR) functions.

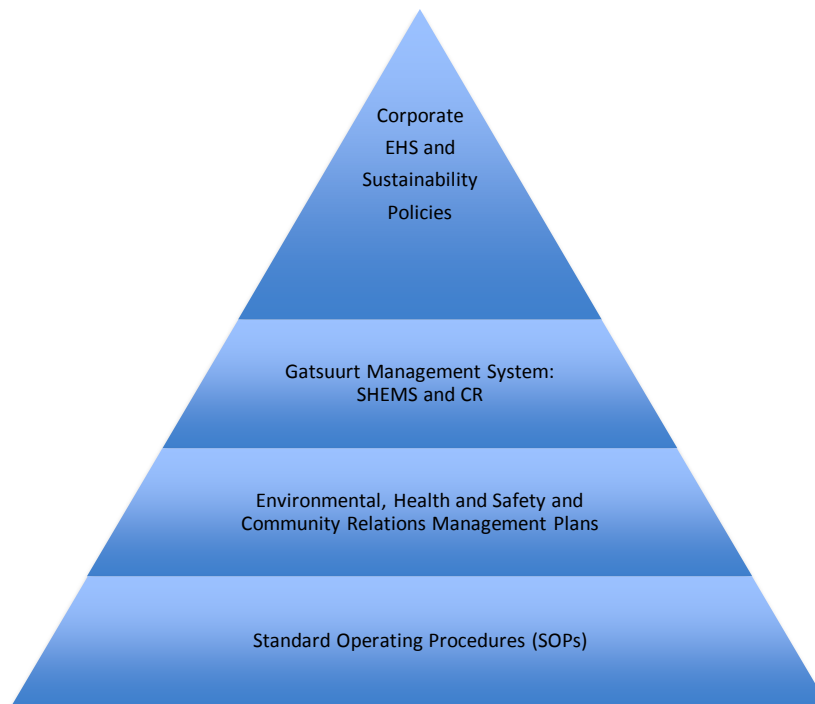
SHEMS fits into an existing hierarchy within Centerra, CGM and Gatsuurt Project policy and operational documents, as shown in Figure 8.1. The hierarchy demonstrates the relationship between corporate policy, and Project level implementation of environment and social sustainability policy and procedures.

At the highest level of the hierarchy, Centerra's corporate level commitments to SHE and Sustainability are specified through corporate policies (i.e. those specified in the Book of Standards, described earlier in Table 3.2), which then inform Gatsuurt Project level commitments in SHEMS.

The overarching environmental management program is captured by the annual Environmental Management Plan, and the social performance management program which will deliver of policy commitments through the annual Social Management Plans. A series of Standard Operating Procedures (SOPs) underlay the management plans and provide instructional description for key controls and monitoring methods.

The ESMS is subject to corporate audits undertaken by Centerra Gold and external audits for cyanide management components under the BGC signatory status for the ICMI Code.

**Figure 8.1 Hierarchy of Company Policies, Systems, Plans and Procedures**



The CGM ESMS (Worker Health and Safety Component) is certified to ISO14001, the leading international standard on environmental management. The principles of social protection applied through this system are:

- *Plan*, prior assessment of potential social impact;
- *Do*, implementing design and mitigation measures that seek to avoid, reduce or minimise potential impact;
- *Check*, monitoring performance and the efficacy of the mitigation measures that are implemented; and
- *Act*, auditing and tracking the implementation of corrective actions.

The Management system seeks to achieve continuous improvement in performance, through regularly assessing the social aspects and impacts of its activities. The key components of the management system are as follows:

1. Compliance;
2. Risk Assessment and Management;
3. Objective and Target Setting;
4. Organisation, Accountabilities and Responsibilities;
5. Competency and Training;
6. Communication & Consultation;

7. Management of Change;
8. Operational Control;
9. Emergency Preparedness;
10. Supplier & Contractor Management;
11. Monitoring & Evaluation;
12. Incident and Action Management;
13. Self-Audit;
14. Leadership, Governance and Collaboration; and
15. Management Review.

Ensuring consistency with ISO requirements will enable external verification of the system. CGM has components of a Management System in place into which the Gatsuurt Project documentation will be integrated, through updating, or where necessary, development, of Gatsuurt-specific ESMPs.

## **8.3 SOCIAL MANAGEMENT PLANS**

### **8.3.1 Overview**

Each management plan is based on a standard structure as set out below:

- Introduction;
- Scope;
- Roles & Responsibilities (including internal assurance and governance);
- Project Standards;
- Mitigation Measures & Management Controls;
- Monitoring & Evaluation, Audit & Reporting;
- Resources & Training; and
- Document control.

The list of ESMPs for the Gatsuurt Project cover health and safety management internally, environmental management and community relations management, and is indicated in Figure 8.2.



**Figure 8.2 Gatsuurt Management Plans by Functional Area**

Health and Safety Management	Environmental Management	Community Relations Management
Worker Health and Safety Emergency Response	Biodiversity Water Hazardous Materials Waste Acid Rock Drainage Air Quality Noise and Vibration Transport Mine Closure and Reclamation	Stakeholder Engagement Grievance Management Community Development Cultural Heritage Natural Resource Management Employment and Training Community Health, Safety and Security Procurement and Supply Chain

The key management plans, which have been developed under the existing Boroo Gold operations, include:

- Stakeholder Engagement Plan (2012, revised 2015);
- Community Donations Policy; and
- Grievance Management Procedure (2014).

The Stakeholder Engagement Plan has been updated alongside this Social Baseline and Impact Assessment.

### 8.3.2 Plan

Social Management Plans will largely be the responsibility of the Corporate and Public Relations Team within CGM, with particular cross-team work and responsibilities with areas including Environment, Procurement, Corporate, Security, and Human Resources. Some members of this team have existing responsibilities in the task of closure of the Boroo Gold mine, in particular, engagement with communities about closure options and actions. Recommencement of some positions will be dependent on the forward-looking development of Gatsuurt (e.g. Tunkhel *Bagh* CRO). The table below lists key staff involved in Corporate and Public Relations at CGM and the delineation of responsibilities in delivery of the Gatsuurt Project<sup>227</sup>:

<sup>227</sup> CGM Stakeholder Engagement Plan (2012).

**Table 8.1 Roles and Responsibilities in SMP Implementation**

Position	Responsibilities
Director Government Relations	Manages Media Relations staff (2) Manages Community Relations staff (5) Manages Government Relations staff (1) Senior contact for State Government, <i>aimag</i> and <i>soum</i> officials
Director Supply Chain	Manages suppliers Develops supply chain relationships including with local suppliers
Media Relations Manager	Manages media relations Manages communication with stakeholders including information-related matters that are raised by stakeholders Develops key messages to be communicated to the media Ensures preparation of Joint Working Group (JWG) meeting minutes
Community Relations Manager	Manages <i>soum</i> -based Community Relations Officers (CRO) (3) Prepares agenda and drives follow up from JWG meetings Participates in JWG meetings Manages special CSR Projects implementation, documentation and reporting Conducts information, disclosure and consultation meetings within impacted communities Manages CSR-related studies Maintains Grievance mechanism Participates in JWG meetings
CRO Bayangol <i>soum</i>	Primary liaison with community leaders and members in Bayangol: Coordinates logistics for information and consultation meetings in Bayangol Maintains community diary to record community interactions about Company-related issues Submits monthly report on community diaries and CR activity in impacted areas Participates in JWG meetings
CRO Tunkhel <i>bagh</i> <sup>228</sup>	Primary liaison with community leaders and members in Tunkhel: coordinates logistics for information and consultation meetings Maintains community diary to record community interaction about Company related issues Submits monthly report on community diaries and CR activity in impacted areas Participates in JWG meetings
CRO Mandal <i>soum</i>	Primary liaison with community leaders and members in Mandal: Coordinates logistics for information and consultation meetings Maintains community diary to record community interaction about Company related issues Submits monthly report on community diaries and CR activity in impacted areas Participates in JWG meetings

### 8.3.3 Do

Training is a key component of the management system to ensure its successful implementation. The main training requirements are:

- Management briefings, to ensure a common understanding of roles, responsibilities and applicable standards by all those responsible for delivery of construction phase activity in a coordinated way;

<sup>228</sup> Role currently inactive; will be reinstated upon Project Approval and finalisation of agreement with the GoM.

- Induction training for staff and all contractors, to ensure that the whole workforce is aware of their responsibilities under the Code of Conduct, and
- Toolbox talks and awareness programs, to ensure the workforce understands key issues such as how to respond to queries or requests from the community.

#### **8.3.4 Check**

Monitoring and audits will enable the Project to track progress and evaluate whether the objectives of the Gatsurt Project are being met, according to the goals, objectives and timeframes specified in the Project's social commitments. Monitoring data will be collected to track key social performance indicators. At all stages of the Project, CGM and its contractors will be required to collect social data to inform an accurate picture of potential impacts on the workforce and surrounding communities in the Project Area, so that they can be managed and mitigated as effectively as possible in response to emerging trends over time.

Key performance indicators (KPIs) will be developed using the social baseline and the social impact assessment to identify parameters that will be monitored to gauge the project's social impact and performance over the life time of the Project. These KPIs will be incorporated as part of the social management plan and may require adjustment as the Project progresses, and will include social indicators such as:

- The number of community complaints received;
- Minutes from stakeholder meetings;
- Status of outstanding grievances raised; and
- The number of microfinance loans divested in the Project Area.

KPIs for all SMPs are yet to be developed.

At all phases of the Project, internal and external monitoring and auditing will be undertaken to measure social performance of the Project (CGM and its contractors) of implementation of the ESMS and effectiveness of mitigation measures in minimising social impacts and enhancing opportunities. The audit schedule will be responsive to commitments and consideration of audit findings or areas of concern. The Social Monitoring Plan (SMP) will document requirements for monitoring including:

- The relevant SMP;
- Responsibility for monitoring;
- Parameters; and
- Frequency.

#### **8.3.5 Act**

Any non-conformances arising from inspections and audits mentioned above would result in non-conformance reports and the development of a plan for corrective action. These will be used as tools to ensure any performance gaps are actioned for follow up, thereby providing for continuous improvement.

## **9. SUMMARY OF IMPACTS AND MITIGATION MEASURES**

The following Table 9.1 summarises the impacts and mitigation measures for the Gatsuurt Project, through all phases of construction, operations and closure.

**Table 9.1 Summary of Impacts and Mitigation Measures**

Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
<b>Employment (EBRD PR 1, 2)</b>					
Creation of direct and indirect employment opportunities for the life of the mine	Definite Direct positive Long term Intermediate range	-	<ul style="list-style-type: none"> <li>• Apply a fair and transparent recruitment process as applied at BGC.</li> <li>• Engage with local training partners that deliver curricula which will enable local students to better meet the needs of the Mongolian mining industry.</li> <li>• Provide updated materials to CROs to engage with communities including potential employees and training partners.</li> <li>• Apply policy prioritising local employment for direct employment, and to contractors to equally apply to their recruitment.</li> <li>• Work with training providers and government to secure local direct and indirect employees.</li> <li>• Continue provision of work readiness, vocational training or other up-skilling of local staff.</li> </ul>	<ul style="list-style-type: none"> <li>• Employment and Training MP</li> <li>• Employment Policy</li> <li>• Labour MP</li> </ul>	-
Induced job creation from service and supply jobs to meet demands from the resident workforce and the mine itself during construction and operations phases	Definite Direct positive Medium term Intermediate range	-	<ul style="list-style-type: none"> <li>• Invest in capacity building for local small businesses to improve their business opportunities.</li> <li>• Contracts to encourage sourcing of their goods and services locally.</li> <li>• Investigate local sourcing and procurement opportunities to promote sustainable small business development.</li> </ul>	<ul style="list-style-type: none"> <li>• Procurement MP</li> <li>• Community Development MP</li> <li>• Contractor MP</li> <li>• Contract terms</li> </ul>	-
Reduction in direct, indirect and induced employment during the closure phase	Definite Direct, high moderate negative Long term Intermediate range	Moderate	<ul style="list-style-type: none"> <li>• Apply BGC redundancy process to facilitate pathways to new work opportunities for redundant staff.</li> <li>• Support of the <i>soum</i> administrations in looking at alternate sources of employment / business development opportunities for redundant employees.</li> <li>• Deliver collective redundancy requirements as is provided for in the Collective Agreement.</li> <li>• Develop targeted support for vulnerable groups to minimise impacts of redundancy.</li> </ul>	<ul style="list-style-type: none"> <li>• Employment and Training MP</li> <li>• Community Development MP</li> </ul>	Minor
Risk that contracted mining and haulage contractors do not use local labour or follow Centerra labour practices	Possible Direct, high moderate Negative Long term Intermediate range	Moderate	<ul style="list-style-type: none"> <li>• Training Plan to be disclosed, which specifies local hire requirements.</li> <li>• Contracts specify clear requirements to be met for local hire specifications.</li> <li>• Contracts to require reporting by the contractor to CGM and to include periodic performance monitoring.</li> <li>• Contracts to include penalty clauses for breaches.</li> </ul>	<ul style="list-style-type: none"> <li>• Employment and Training MP</li> <li>• Contractor MP</li> </ul>	Minor
Risk of unmet community expectations for jobs due to lack of suitable candidates	Definite Direct negative Medium term Extensive range	Moderate	<ul style="list-style-type: none"> <li>• Define and implement local hiring preference policy through MPs.</li> <li>• Ensure eligibility for 'local hiring preference' through a specific timeframe of residency in the Project area.</li> <li>• Communicate employment estimates, timeframes and skills requirements clearly to the community on a continuous basis through CROs.</li> <li>• Invest in skills training to facilitate employment of local population through cooperation with training partners, to supplement on-the-job training. Engage with training providers on types of skills needed and timeframes to support skills requirements of the Project.</li> <li>• Consider current / former Boroo staff in supervisory roles (as appropriate), including for training of new employees.</li> </ul>	<ul style="list-style-type: none"> <li>• Employment and Training MP</li> <li>• Contractor MP</li> <li>• SMMP</li> </ul>	Moderate
<b>Labour and Working Conditions (EBRD PR 1, 2)</b>					
Potential inability to find a sufficiently skilled workforce	Direct Negative, high moderate Short term Extensive	Moderate	<ul style="list-style-type: none"> <li>• Clear delineation of tasks and responsibilities for maintaining stakeholder relationships and on workforce requirements and timeframes.</li> <li>• Ongoing provision of training for the existing Mongolian labour force at Boroo.</li> <li>• Potential for use of a contract miner workforce under the guidance of the experienced, existing, mining supervisory workforce (from BGC).</li> </ul>	<ul style="list-style-type: none"> <li>• Employment and Training MP</li> <li>• Contractor MP</li> <li>• Stakeholder Engagement Plan</li> </ul>	Minor

Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
			<ul style="list-style-type: none"> <li>Retraining the existing processing workforce to be able to operate new equipment (including the BIOX® plant).</li> <li>Use of an expatriate workforce for a term-limited period where a national workforce cannot be sourced.</li> <li>Require succession planning into employment contracts of staff in senior / management roles.</li> </ul>		
Potential for labour disputes	Direct Negative, high moderate Short term Extensive	Moderate	<ul style="list-style-type: none"> <li>Applying the BGC hiring policy across to the Gatsuurt activities, including local hiring prioritisation, through the Employment and Training MP.</li> <li>Ensuring all employment contracts are in place, monitored and enforced, including of indirect employees for consistency and equity across the Project.</li> <li>Implementing the standard BGC employment contract template for Gatsuurt employees for consistency in approach within the CGM workforce, assuming Gatsuurt employees will also be part of the existing union.</li> <li>Implementing the existing Boroo Employee Complaint Mechanism at Gatsuurt; Requiring compliance with, at minimum, the Labour Code requirements for all contractor workforces, and that a Collective Agreement must be in place with a number of provisions that go beyond compliance with the Labour Code. Employee standards review will be undertaken on regular basis to ensure compliance of EBRD PR2 requirements and labor code by all contractors.</li> <li>Development of a Contractor Management Plan as the mechanism for ensuring compliance with defined requirements.</li> </ul>	<ul style="list-style-type: none"> <li>Employment and Training MP</li> <li>Employment Policy</li> <li>Labour MP</li> <li>Contractor MP</li> </ul>	Minor
<b>National and Local Economic Investment (EBRD PR 1, 2)</b>					
Increase in local procurement opportunities in particular during operational phase	Definite Direct positive Medium term Intermediate range	-	<ul style="list-style-type: none"> <li>Implement the local procurement policy and management plan to guide management of local suppliers.</li> </ul>	<ul style="list-style-type: none"> <li>Procurement MP</li> <li>Community Development MP</li> </ul>	-
Localised inflation effects due to the impacts of the Project on the local economy	Definite Direct, high moderate negative Long term Intermediate range	Moderate	<ul style="list-style-type: none"> <li>Retain salary levels that are competitive in the employment market and consistent with existing BGC salaries.</li> <li>Conduct stakeholder engagement to design specific programming within the CDA initiatives to focus on identifying targeted options for local economic development; these can be piloted during the operational phase of the project, and scale up / increase as the mine moves into closure phase.</li> <li>Implement the Local Procurement Policy requirement of procurement from a mix of project-affected <i>soums</i>/<i>baghs</i>.</li> </ul>	<ul style="list-style-type: none"> <li>Employment MP</li> <li>Procurement MP</li> <li>Community Development MP</li> </ul>	Minor
Increased revenue to the State and <i>aimag</i> budgets through taxes, royalties and other payments, in particular during the construction and operational phases	Definite Direct positive Medium term Intermediate range	-	<ul style="list-style-type: none"> <li>Support capacity building initiatives which build the ability of governments to effectively and transparently manage increased tax revenues and increased demands for social and public services.</li> </ul>	<ul style="list-style-type: none"> <li>Community Development MP</li> </ul>	-
Decreased economic investments at the local level at the closure phase of the mine, leading to higher vulnerability in project-affected communities	Definite Direct, high moderate negative Long term Intermediate range	Moderate	<ul style="list-style-type: none"> <li>Develop a Community Development Management Plan to guide implementation of the CDA.</li> </ul>	<ul style="list-style-type: none"> <li>Community Development MP</li> </ul>	Minor
<b>Demography (EBRD PR 1)</b>					
Increase in speculative employment seekers creating pressure on services and localised potential social fracture	Definite Direct / Indirect, moderate negative Long term	Moderate	<ul style="list-style-type: none"> <li>Local employment priority where minimum requirements and experience are met.</li> <li>Stipulate a period of residency in the area in order to qualify as 'local' for the purposes of preferred local employment.</li> <li>Engagement with <i>soum</i> officials to minimise speculative migration by jobseekers to the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Employment MP</li> <li>Health and Safety MP</li> </ul>	Minor



Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
	Intermediate range		<ul style="list-style-type: none"> <li>Monitor demographic changes with the <i>soum</i> governments and any positive or negative impacts of in-migration.</li> <li>Liaison by the Project with Government to include any issues of law enforcement requirements and/or anti-social behaviour that may result due to the Project.</li> </ul>	<ul style="list-style-type: none"> <li>Community Development MP</li> </ul>	
<b>Land Use and Livelihoods (EBRD PR 1, 3)</b>					
Increased impacts to land and livelihoods from dust generated by Project use of the public road	Definite Direct, high moderate negative Long term Small range	Moderate	<ul style="list-style-type: none"> <li>Development of an Atmospheric Emissions Management Plan including: <ul style="list-style-type: none"> <li>Application of dust suppressant (magnesium chloride, as approved)</li> <li>Additional periodic road grading.</li> <li>Covering loads of trucks to prevent both release of dust off trucks and ore from falling off trucks.</li> </ul> </li> <li>Communications on volume and timing of haul truck movements as described in the Stakeholder Engagement Plan.</li> <li>Inclusion of pasture / cropping improvement measures within activities funded through the <i>Soum</i> Development Fund.</li> </ul>	<ul style="list-style-type: none"> <li>Atmospheric Emissions MP</li> <li>Stakeholder Engagement Plan</li> <li>Community Development MP</li> </ul>	Minor
Decreased potential for illegal forestry through increased visibility of forest users	Definite Direct positive Long term Small range	-	<ul style="list-style-type: none"> <li>CGM existing security force will regularly police the Gatsuurt area as per existing operations and evict any illegal loggers that are encountered.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder Engagement Plan</li> <li>Community Development MP</li> </ul>	-
Increased land disturbance and visual impact of Project activities	Definite Direct, high moderate negative Long term Small range	Minor	<ul style="list-style-type: none"> <li>Minimise areas of vegetation clearance to the areas required to accommodate the Project.</li> <li>Maintain screening of the area as far as practicable through the narrow valley at the eastern end of the Gatsuurt site.</li> <li>Prevent access through the Gatsuurt site by the public until post-closure (if at all).</li> <li>Extend existing borrow pits to the maximum extent possible before creating new borrow pits.</li> <li>Rehabilitate borrow pits on completion of extraction of borrow materials.</li> <li>Create seasonal jobs and revenue for local communities by engaging those from the Project area in offset tree planting activities that protect high value forest areas.</li> </ul>	<ul style="list-style-type: none"> <li>Health and Safety MP</li> <li>Mine Closure Plan</li> <li>Employment and Training MP</li> </ul>	Very Low
Increased opportunity for artisanal miners to re-establish activities in Gatsuurt following mine closure	Possible Direct, high moderate negative Long term Small range	Minor	<ul style="list-style-type: none"> <li>Development of a Mine Closure Plan, including social closure actions, through the Social Closure Working Group, which will be updated from a conceptual to a detailed plan through the Operations phase of the Project prior to detailed implementation at Closure.</li> <li>Promote ownership of the closure plan and post-closure land use to design closure landforms and land uses that match, or are sympathetic to, the pre-artisanal mining landscape.</li> </ul>	<ul style="list-style-type: none"> <li>Mine Closure Plan</li> <li>Stakeholder Engagement Plan</li> </ul>	Very Low
<b>Education</b>					
Increased pressure on education services from speculative in-migration	Probable Indirect, low moderate negative Long term Intermediate range	Moderate	<ul style="list-style-type: none"> <li>Updating the Training Plan to reflect current Gatsuurt specific requirements such as the detailed human resource requirements and timing for the life of the Project.</li> <li>Engagement with TVET institutions for sourcing the pipeline of existing construction and mining skills talent, and for provision of work-readiness training to high potential construction and operations staff, prioritising those from the Project area.</li> <li>Design and implement a scholarship programme to encourage the study of subjects of relevance to the Project needs, targeting high potential graduates from the Project area, weighted to Tunkhel <i>bagh</i>, for implementation in construction, operations and closure phases.</li> <li>Review the BGC recruitment policy to ensure consistency the Labour Code, Mongolian law and good industry practices.</li> <li>Map the training plan and skill needs of the Project with skill gaps in the Project area to enable design of appropriate responses to improve opportunities for prioritization of recruitment of the local workforce by the Project. This will include monitoring mechanisms with targets for employment of people from the Project area, including of women.</li> <li>Engage with schools, TVET providers and universities to support industry learning through the operations phase.</li> </ul>	<ul style="list-style-type: none"> <li>Employment and Training MP</li> <li>Community Development MP</li> <li>Contractor Management MP</li> <li>Stakeholder Engagement Plan</li> </ul>	Minor

Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
			<ul style="list-style-type: none"> <li>Conduct ongoing implementation and review of the Training Plan to ensure that Project needs are met and align with policy for prioritisation of local employment and targets set at the construction phase.</li> <li>Monitor effectiveness of workforce training delivery (in-house and third party) and implement any corrective actions as necessary.</li> </ul>		
<b>Health (EBRD PR 1, 4)</b>					
Increased pressure on health services from speculative in-migration	Probable Indirect, low moderate negative Long term Intermediate range	Moderate	<ul style="list-style-type: none"> <li>Ensure that all CGM employees and contractors are provided with adequate health care for work-related issues and injuries that is independent of the local health care system.</li> <li>Mitigate the potential pressure on health services resulting from in-migration through liaising with local health professionals to identify ways that the Project can provide sustainable, non-capital investments in the health services.</li> <li>Engage with the Government and Municipality in monitoring and improving the medical infrastructure and services.</li> </ul>	<ul style="list-style-type: none"> <li>Employment and Training MP</li> <li>Health and Safety MP</li> <li>Stakeholder Engagement Plan</li> <li>Community Development MP</li> </ul>	Minor
Increased risk to workers of accident, injury or fatality in working on a new mine site	Possible Direct, major negative Short term Extensive range	High	<p>Implementation of existing relevant measures from Boroo to Gatsuurt, including:</p> <ul style="list-style-type: none"> <li>Provision of induction, training and supervision in the first months of employment, for both staff and contractors, as well as periodic refresher training.</li> <li>Implementation of training procedures and verification of competency to become familiar with the site and its hazards, as well as the hazards within the task and site's method to complete the task</li> <li>Conduct risk assessments for new tasks, systems of work and plant</li> <li>Contractor management requirement of a minimum level of OHS to be met through the contract duration, with action/penalties in response to any breaches</li> <li>Implementation of prequalification / screening processes prior to contracting</li> <li>Contract Performance monitoring including of inductions, daily safety toolbox meetings, monthly contractor management meetings on safety</li> <li>MSDS in place for new materials, training for staff, including retraining and new training for BIOX® facility, with SOPs to be developed for the BIOX® facility</li> <li>Emergency response plan in place, with ongoing training should it need to be implemented.</li> </ul>	<ul style="list-style-type: none"> <li>Induction Plan</li> <li>Employment MP</li> <li>Worker Health and Safety MP</li> <li>Contractor MP</li> <li>H&amp;S Monitoring Plan</li> <li>Procedures, incl. Permit to Work etc.</li> </ul>	Moderate
Risk of unplanned emergency events impacting workers, emergency responders, Government agencies and communities in the Project Area	Unlikely Direct, major negative Short to medium term Small to intermediate range	High	<p>Implement the existing relevant measures from Boroo to Gatsuurt, including:</p> <ul style="list-style-type: none"> <li>Review the Crisis Management Plan and Emergency Response Plan, already in place by CGM, for relevance to the Gatsuurt context.</li> <li>Undertake engagement with emergency response organisations on emergency response issues.</li> <li>Continue application of the International Cyanide Management Code (ICMC) for the manufacture, transport and use of cyanide to ensure good international industry standards are applied and maintained in how the company procures, transports, stores, uses, disposes of cyanide.</li> </ul>	<ul style="list-style-type: none"> <li>Emergency MP</li> <li>Hazardous Materials MP</li> <li>Community, Health, Safety and Security MP</li> </ul>	Moderate
Threats to human health and safety of communities from access to mining facilities at Gatsuurt or processing facilities at Boroo	Probable Direct, major negative Long term Small range	High	<p>Implement the existing relevant measures from Boroo to Gatsuurt, which include:</p> <ul style="list-style-type: none"> <li>Exclusion of public from active mining areas to minimize impacts of blasting.</li> <li>Use of security personnel to ensure no unauthorized public access.</li> <li>Signage at all entrance/exist points and periodically on boundaries/fenced areas.</li> <li>Regular stakeholder engagement program to notify of key safety issues on, around and offsite.</li> <li>Outreach program to periodically bring visitors for site visits in a controlled and safe manner.</li> </ul>	<ul style="list-style-type: none"> <li>Health and Safety MP</li> <li>Stakeholder Engagement Plan</li> <li>Community, Health, Safety and Security MP</li> </ul>	Moderate
Increased risk of the spread of communicable diseases within the workforce and between the workforce and the community, including STIs	Probable Indirect, low moderate negative Long term Intermediate range	Moderate	<ul style="list-style-type: none"> <li>Ensure health screening is being conducted for employees and contractors before contracting workers and on a periodic basis throughout their employment/contract.</li> <li>As part of health and safety induction for workers, provide awareness training on STIs and other communicable disease prevention. Provide this training on an ongoing basis.</li> </ul>	<ul style="list-style-type: none"> <li>Health and Safety MP</li> <li>Employment MP</li> </ul>	Minor

Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
			<ul style="list-style-type: none"> <li>Work in collaboration with the onsite Project medical team to ensure that such awareness and education training is appropriately provided to both direct employees and contractors.</li> <li>Identify opportunities to support local public health campaigns that focus on prevention of communicable diseases and STIs.</li> <li>Strict enforcement of a policy of no prostitution around the camps, and immediate dismissal of any workers found to be using prostitutes.</li> </ul>		
Risk of road accidents, incidents or fatalities on the public road between Gatsuurt and Boroo site, between Project and public road users	Definite Direct, Major Negative Intermediate scale Long term	High	<ul style="list-style-type: none"> <li>Development and implementation of a Traffic Management Plan, effective for direct and indirect employees, comprising strategies to manage vehicles and equipment during the execution of all phases of the Project.</li> <li>Minimise the potential for speed-related accidents / interactions between Project and public traffic by retaining the gravel road for the duration of the Project.</li> <li>Design and implementation of specific road engineering controls to minimise the potential for incidents.</li> <li>Implement existing Boroo project driver controls minimise the potential for incidents.</li> <li>Apply reasonable efforts to work with the Government of Mongolia to minimise potential incidents,, including developing and implementing road safety/traffic safety campaigns.</li> <li>Engagement with the community to minimise potential incidents</li> </ul>	<ul style="list-style-type: none"> <li>Community Traffic MP</li> <li>Stakeholder Engagement Plan</li> <li>Health and Safety MP</li> </ul>	Moderate
Risk of antisocial behaviour or social fracture induced by Project activities in the Project Area, including between and within communities and the Project workforce	Likely Direct and indirect High moderate negative Intermediate range Long term	Moderate	<ul style="list-style-type: none"> <li>Implement and provide training in the Code of Conduct specific to security personnel, which outlines appropriate conduct, engagement and appropriate use of force, and audits of the application of the Voluntary Principles.</li> <li>Continue stakeholder engagement efforts to ensure that all potentially affected stakeholders know how to contact the company and to file grievances (in accordance with the Grievance Procedure).</li> <li>Provide Workforce accommodation on site to minimise interactions with local communities while working.</li> <li>Minimising the potential for speculative job-seekers/ economic opportunity seekers (as per Demography) thereby limiting potential for conflict with residents.</li> <li>Implement the Camp Rules for employees and contractors mitigating interactions offsite with communities and training to ensure respectful and appropriate behaviours are understood and practiced at all times.</li> <li>Implementation of security staffing practices as per arrangements that have been in place at Boroo.</li> </ul>	<ul style="list-style-type: none"> <li>Employment MP</li> <li>Health and Safety MP</li> <li>Stakeholder Engagement Plan</li> </ul>	Minor
Strengthened and sustainable community development initiatives implemented in partnership between the Project and key stakeholders	Positive Direct Long term High moderate Intermediate range	-	<ul style="list-style-type: none"> <li>Development of improved economic opportunities for community members who are adversely impacted by the Project according to an agreed development plan.</li> <li>Regularly review and update the Stakeholder Engagement Plan (SEP) as attached to this SIA to provide for ongoing project communications and consultation.</li> <li>Induction of all employees (including nationals, locals and expatriates) to manage expectations on camp requirements (including work behaviours, camp living requirements).</li> <li>Sustainable community development projects developed in partnership with local government, civil society and community members, to ensure their relevance and ownership of implementation and outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>Community Development MP</li> <li>Stakeholder Engagement Plan</li> </ul>	-
<b>Cultural Heritage (EBRD PR 1, 8)</b>					
Risk of theft of or damage to archaeological heritage in the Project Area	Direct and indirect Unlikely – possible High moderate negative Intermediate range Long term	Moderate	<ul style="list-style-type: none"> <li>Provide accommodation for the workforce at Boroo to limit accessibility by employees and contractors to heritage resources.</li> <li>Interference with cultural heritage sites by employees and contractors prohibited by the employee and contractor Code of Conduct.</li> <li>Minimise published detail about known heritage resources to prevent theft or damage to sites, unless based on the advice of cultural heritage experts.</li> </ul>	<ul style="list-style-type: none"> <li>Cultural Heritage MP</li> <li>Employment MP</li> </ul>	Minor

Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
			<ul style="list-style-type: none"> <li>Implement the Chance Find procedure, including cessation of work in the vicinity of potential significant finds and notification of relevant authorities.</li> </ul>		
Risk of disruption to locally important cultural heritage practices	Direct and indirect Possible High moderate negative Intermediate range Long term	Moderate	<ul style="list-style-type: none"> <li>Induction program to include cultural awareness training for all employees and contractors, developed with input from native expert citizens, to decrease likelihood of damage and disrespect to local heritage practices and sites.</li> <li>Avoid sourcing construction materials from locally sacred sites.</li> <li>Ensure that the public's access to cultural heritage sites continues to be unimpeded by the Project's use of the Gatsuurt haul road throughout the Project life.</li> <li>Consult with the Mongolian Academy of Sciences Institute of Archaeology prior to any disturbance of cultural heritage sites noted in 2015 study.</li> <li>Implementation of stakeholder engagement and grievance processes.</li> <li>Development and implementation of a pastureland strategy.</li> <li>Collaboration and partnership with <i>soum</i> governments and community groups to support local cultural events and conserve and reinforce local traditions and culture.</li> </ul>	<ul style="list-style-type: none"> <li>Cultural Heritage MP</li> <li>Employment MP</li> </ul>	Minor

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# SUSTAINABILITY

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## **APPENDIX A**

### **BASELINE STUDY SUPPLEMENTARY DOCUMENTATION**

## BASELINE STUDY METHODOLOGY

### BASELINE SCOPE

This scope of this Social Baseline Study of the Gatsuurt Project is delineated as follows:

- **Population and Demographic information:** key population measures including total population and population growth rates, population structure (age composition and gender balance), ethnicity and language, levels of literacy, education and migration trends;
- **Governance and Social Structures:** Governance arrangements at the national, regional and local levels;
- **Economy, Employment and Livelihoods:** National and local economy, the overall workforce, employment, labour and working conditions at the national, provincial and local levels;
- **Land Use:** land use, land use rights, use of grazing and agricultural land and water resources at the national, regional and local levels;
- **Transport and social infrastructure:** road, air and rail transport, power and energy, water supply, waste management facilities, sanitation provisions, education and communication facilities;
- **Community Health, Safety and Security:** key health data including patterns of morbidity and mortality, the incidence of communicable and non-communicable diseases, maternal and child health, nutrition and diet, health services provision, health insurance, and community security and safety; and
- **Cultural Heritage:** tangible cultural heritage including archaeology, palaeontology and intangible heritage.

### Study Area

This Social Baseline Study sets out the “study area” or “Project Area” for the Project based on current information. The Project Area has been defined as the area in which a direct or indirect impact on the socio-economic or cultural environment might occur. This includes Selenge *aimag's soums* of Mandal and Bayangol, with a particular focus on Tunkhel *bagh*.

**Table A1 Project Area**

Settlement	Type	Population	Distance to Gatsuurt site	Distance to Boroo site
Baruunkharaa	Bayangol <i>soum</i> centre	5,594 (1,675 households)	76.4 km by improved road	32.8 km by improved and paved road
Zuunkharaa	Mandal <i>soum</i> centre	25,693 (7,382 households)	39.2 km by improved road	49.4 km by improved road
Tunkhel <i>bagh</i>	<i>Bagh</i> centre of Mandal <i>soum</i>	3,234 (923 households)	Approx. 70 km by improved dirt road (via Zuunkharaa) / 18km via unimproved track (via Balj river)	Approx 90 km by improved dirt road (via Zuunkharaa)

Settlement	Type	Population	Distance to Gatsuurt site	Distance to Boroo site
Rural herder households	Seasonally nomadic and semi-settled households	49 (18 households)	Various (<1 to 100+km)	Various (<1 to 100+km)

## Baseline Scoping

Baseline scoping included a review of available public and internal documents concerning the Project and Project Area. In addition, consultation with key internal stakeholders was conducted, both in Ulaanbaatar at the Centerra head office and through consultation with key Company and Lender representatives on site to verify the initial document review, assess the Project Area, and conduct some initial public consultation. Key outputs of the baseline scoping phase included a Stakeholder Engagement and Data Gathering Plan to inform the Social Baseline Study Fieldwork (which encompassed a detailed plan for the execution of the Study), and agreement on the areas defined in Table A1 as the Project Area.

## DATA COLLECTION METHODS AND INSTRUMENTS

Both quantitative and qualitative research methods were applied in the completion of data collection for the Social Baseline Study. A combination of the following methods was employed:

- **Documentation review and secondary data:** Existing socio-economic development documents both at national, regional and local level, including census reports, annual and mid-term progress reports of Government agencies and offices, and other related reports and research studies were used. See Appendix A (References) for a list of secondary data sources consulted.
- **Key informant interviews:** An interview guide (included in Appendix B) was employed in face-to-face interviews with key informants. Key informant interviews were conducted with 32 individuals.
- **Household questionnaire:** A semi-structured questionnaire was used for data collection from 400 selected households (see Appendix B which includes the Household Questionnaire used).
- **Focus Group Discussion:** 13 focus group discussions were conducted comprising 7-10 people per focus group (see Appendix B which includes the FGD interview guide and Appendix C for List of Participants in KIIs and FGDs).

## Baseline Sampling

A Stakeholder Engagement and Data Gathering Plan was developed by Sustainability for the completion of the Social Baseline Study on behalf of Centerra. Data gathering for the Social Baseline Study was based on a number of requirements. The requirements for primary data gathering relate to qualitative and quantitative sampling, both of which are discussed in further detail below.

### *Sampling Methodology of Quantitative Research*

Quantitative surveys establish baseline data for key social parameters that can later be used as indicators to measure social impacts, and enables empirical measurement of Project impacts and evaluation of progress to mitigate impacts or progress sustainable development activities.

Quantitative methods, in the form of a household survey, were employed in the Gatsuurt Project Social Baseline Study to generate data on:

- Household composition and demography;
- Livelihoods and occupations;
- Levels of education and skills;
- Sources and amounts of household income;
- Household expenditure;
- Household structures, land and other assets;
- Access to health, education and other services;
- Health indicators; and
- General trends and attitudes,

For quantitative sampling, participating households were selected based on the Location of *bagh*, and the proportion of the *bagh* population in the total *soum* population.

Once the number of households to be surveyed in the *bagh* had been determined (sample population), participating households were selected randomly from this sample population.

#### **Population:**

The sample frame was based on the 2012 population and household data of the National Statistical Office of Mongolia.

The sample survey was conducted in Mandal (including Tunkhel *bagh*) and Bayangol *soums* of Selenge *aimag*. All households of these *soums* were the sample population, so based on the 2012 data, the total sample population was 9,057.

**Table A2 Quantitative Sampling Methodology**

<i>Soum</i>	Number of Households	Population
Mandal <i>soum</i>	7,382	25,693
Bayangol <i>soum</i>	1,675	5,594

It was determined that 1% of urban households and 10% of rural households of the sample would provide an optimum representation in the study population. In addition it was determined that all households located close to the Project side and alongside the haul road between the Gatsuurt Project site and the Boroo Project site were to be surveyed.

A standard error of 0.05 percentage points and 95% of confidence level was accepted.

In order to encounter clustering effect and to minimise non-sampling error the study defined an *actual sample size as 389 households*.

### Sample Frame:

Applying the location and population proportion criteria, *baghs* were selected for the sample frame as follows:

- Mandal *soum* (urban) and Tunkhel and Kherkh *baghs* (rural); and
- Bayangol *soum* (urban) and Gonir *bagh* (rural).

The breakdown of total households covered in the survey is provided in Table A3 and describes the resulting sample frame for the quantitative survey.

**Table A3 Sample Frame of the Quantitative Survey**

Location	Designation	Households	Population	Sample size		Total (Actual)
				1%	10%	
Selenge <i>aimag</i>						
Mandal <i>soum</i>		7,382	25,693			
	Urban	5,211	18,448	52		56
	Rural	2,171	7,245			
	Tunkhel <i>bagh</i>	923	3,234		92	93
	Kherkh <i>bagh</i>	903	3,029		90	94
Bayangol <i>soum</i>		1,675	5,594			
	Urban	1,089		11		121
	Rural	586			59	
	Gonir <i>bagh</i>	503	1,558		50	
Households near the Project					35	36
<b>Total Household Questionnaires (Actual)</b>						400

### Sampling Methodology of Qualitative Research

Qualitative interview methods were used to provide insight into community social institutions and organisations, decision-making and leadership. Qualitative surveys are effective in obtaining descriptive information about: household livelihood options, social differentiation, ethnic minorities, conflict, and the role of women, key resources, and local perceptions about a project. They are also effective in verifying quantitative data. A variety of qualitative techniques were used for the Social Baseline Study:

- **Focus Group Discussions:** for understanding issues within a community, for example, with women, young people, social or cultural organisations, minority groups);
- **Key Informant Interviews:** for understanding detailed or complex information from a knowledgeable source;
- **Case Studies:** for capturing detail from Focus Group Discussions and Key Informant Interviews.

The type of information gathered using qualitative methods included:

- Quality of life of the population;
- Important and relevant characteristics of social differentiation;



- Key social institutions and customary decision-making structures;
- Characteristics of social organisation;
- Natural resource management and land use;
- Relevant cultural sites;
- Livelihood systems;
- Social mobility and division of labour;
- Perceptions of development in the area;
- Perceptions of sustainable development opportunities; and
- Perceived project impacts and mitigation options.

For qualitative sampling, the survey size was determined based on the topics or themes of interest in the survey in the relevant geographic area, and the potential pool of key informants and participants relevant to the themes.

**Table A4 Sample Frame of the Qualitative Survey**

<i>aimag / suum</i>	Method of data collection	Sampling unit	Sample Size (Planned)	Sample Size (Actual)
Selenge <i>aimag</i>	Interview with key informants (KIIs)	1. Governor and CRK Speaker; Representatives from the Departments of: 2. CRK Members 3. Office of the Governor 4. Police 5. Tax 6. Environment 7. Social Welfare 8. Labour 9. Land, Construction and Urban Development 10. Education 11. Infrastructure, Road, Transport 12. Agriculture and SMEs 13. Hospital 14. River Basin Authority and River Basin Committee	12 KIIs	14 KIIs
Mandal <i>suum</i>	Interview with key informants (KIIs) - <i>suum centre, and Tunkhel bagh</i>	1. Governor; 2. Head of Government Office; 3. CRK Representatives x 2. Officers for: 4. Environment Inspector, Environment Policy, and Land Registration 5. Tax 6. Social Worker; 7. Social Development Policy 8. Labour 9. Education, Culture and Children 10. Agriculture 11. Hospital	12 KIIs	12 KIIs
	Focus group discussions (FGDs)	1. Road users (Government, Herders, Community reps) 2. SMEs (Suum Development Fund, Business/Community reps) 3. Agriculture (Government, Community reps)	10 FGDs	9 FGDs

<i>aimag / soum</i>	<b>Method of data collection</b>	<b>Sampling unit</b>	<b>Sample Size (Planned)</b>	<b>Sample Size (Actual)</b>
	<i>Soum centre, and Tunkhel bagh</i>	4. Forestry (Forest User Groups reps) 5. Artisanal Mining (formal ASM group reps) 6. Herders		
Bayangol <i>soum</i>	Interview with key informants (KIIs)	1. Governor; Head of Government Office; and Head of CRK, and Officers for: 2. Environment Inspector, Environment Policy, and Land Registration 3. Tax 4. Social Worker, and Social Development Policy 5. Labour 6. Education, Culture and Children 7. Agriculture 8. Hospital	8 KIIs	8 KIIs
	Focus group discussions (FGDs)	1. SMEs (Soum Development Fund, Business/Community reps) 2. Agriculture (Government, Community reps) 3. Herders	3 FGDs	4 FGDs
Total number of Qualitative FGDs and KIIs			45	47

## Preparation and Testing

The field team was provided with induction training prior to commencing the field research. Key to the pre-fieldwork training was ensuring the team's familiarity with safety measures and the Communications Protocol (see Appendix C), which provided direction on common responses to questions from community members, and guidance on effective communications in the field.

Furthermore, testing of the Household Questionnaire and was conducted in the field prior to commencement of the formal survey program. Testing was completed in conjunction with assessment and training of the survey team in conducting the study. The Household Questionnaire used was based on similar questionnaires used by Sustainability for similar projects and thus there was a high level of confidence in the integrity of the Questionnaire and the data generated.

## Rationale for Differences between the Planned and Actual Survey Samples

Originally 389 households were planned to be surveyed using the Household Questionnaire. The actual number of households surveyed was 400. The discrepancy can be explained by the field team choosing to conduct additional surveys due to completing the planned number with time to spare.

The number of planned versus actual KIIs was not significantly different (45 planned and 47 actual). The difference can be explained by the prevailing circumstances and availability of participants during the research period.

## Difficulties Encountered During the Collection of Baseline Data

Any methodology used to collect baseline data has its own limitation, either due to data availability / accuracy or due to the techniques applied. A number of difficulties and limitations were encountered in the conduct of the social baseline study:

- Recent (2014) and high quality census data<sup>229</sup> for Mandal *soum* was available, however, this was not matched in Bayangol *soum*, which had not conducted a census recently and does not have a dedicated *soum* Statistics Officer. The census data from Mandal *soum* was an excellent secondary data source, facilitating easy comparisons with the data gathered during the household survey. Having similar data for Bayangol *soum* would have facilitated the ability to conduct more in-depth comparisons both between the *soums*, and with the household data gathered for Bayangol.
- The household survey data is representative of households located within the defined Project Area. Every effort has been made in the text of this Report to distinguish the information obtained from household survey data, from secondary data, and from data obtained from KIIs and FGDs.
- At the *aimag* (Selenge), the field team had difficulty in obtaining secondary data due to much of the available data being classed by authorities as “confidential”. Adequate and current secondary data was able to be sourced online, so authorities’ reluctance to provide the data in person was effectively mitigated.
- The field team encountered resistance on behalf of Government officials to participate in KIIs and FGDs and to discuss the Gatsuurt Project. With elections scheduled for 2016, local officials proved reluctant to express their opinions or talk freely, due to the perception that this might compromise their political aspirations (especially given the “politicking” at the national and local levels around the Gatsuurt Project). To a large extent this was effectively overcome through assurances of confidentiality and impartiality by the field team.

## METHODS OF DATA ANALYSIS

Data analysis took different forms depending upon the nature of the information being analysed. Themes developed from the household survey interviews and were triangulated with information provided by key informants and from focus group discussions.

Moreover, the secondary data and information from the *aimag* and *soum* level were analysed and presented to support the information collected during the field visits.

SPSS 11.5 statistical software package was employed to process and analyse the primary data of the study. The key results were compiled and explored using a descriptive statistical method.

## QUALITY CONTROL

The objectives of data quality control are to collect data that:

1. accurately reflects the reality of the population;

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<sup>229</sup> Socio-economic Bulletin of Mandal Soum. 2014. (Mongolian language only).

2. represents the entire target population.

Key to achieving the above in the context of data gathering to establish the social baseline was minimising sampling and non-sampling error. As explained above, the sampling methodology employed for this study was robust, with a representative sample of the target population surveyed and quality controlled by a Demographer. With respect to non-sampling error, including measurement error, selection bias, and non-responses, a number of strategies were employed to avoid this. The primary strategy was in comprehensive preparation (see section 2.2.2 Preparation and Testing), including the development of a detailed Stakeholder Engagement and Data Collection Plan which included interview guides for KIIs and FGDs. The Household Questionnaire, and KII and FGD Guides were also subject to multiple reviews by Sustainability's local consultations to ensure that questions were locally appropriate and understandable. Moreover, the Household Questionnaire and KII and FGD guides utilised were based on successful questionnaires conducted for similar scopes of work in similar settings by Sustainability in Mongolia.

Measurement error was minimised through the conduct of "field edits" (quick examination of completed data Household Questionnaires) for quality assurance and quality control purposes and to ensure that any emerging fieldwork deficiencies could be remedied before turning into major quality problems. Another key aspect of quality control was the inclusion of an experienced survey researcher, Dr Solongo Algaa, in the team. Dr Algaa is a Professor at the School of Science at the Mongolian National University and a Director at the PTRC. She provided pre-fieldwork quality and data coding checks of the Household Questionnaire, and conducted the data entry and processing into SPSS. Data quality was also further assured through the conduct of additional Household Questionnaire, over and above the planned number. This meant that any Household Questionnaires with errors (i.e. incomplete / improper interview procedure / technical problems, etc.) could be discarded, without compromising the Study. Fortunately, due to adequate preparation and research design, this did not prove to be an issue.

## **APPENDIX B**

### **GATSUURT PROJECT ASM APPENDIX**

## GATSUURT PROJECT – ASM APPENDIX

Date: 14/04/2016

### PURPOSE

The purpose of this Appendix is to provide additional baseline, impact assessment and management measures to address the emergent Artisanal and Small-scale Mining (ASM) issue at the Gatsuurt Project. This is provided as an Appendix as the issue in its current form did not exist when the baseline studies for the Gatsuurt Project were originally conducted in March – April 2015. The issue only manifested in September 2015 and therefore the decision was made to substantively address it on its own by further analyzing the context / baseline and the impacts thereof, and providing management measures and company commitments to effectively address the issue.

### BASELINE CONTEXT AND IMPACT ASSESSMENT

#### Artisanal & Small Scale Mining (ASM) Sector - Global Context

It is estimated that over fifteen million people worldwide are directly involved in Artisanal and Small-scale Mining (ASM) of gold. Many more, approximately one hundred million people, depend on ASM activities for their livelihood. ASM is a complex development problem for governments, mining companies, NGOs, aid agencies and donors across the globe. Different types and communities of ASM require different solutions. The challenges are social, economic, environmental and governance, and require a holistic response.

In many countries like Mongolia, decades of changes in policy and practice have failed to address the multitude and inter-related complexities at scale and over time. The number of artisanal miners is growing globally, largely in the absence of effective regulatory regimes, and are expressing their rights in the context of strengthening community voice in mining development. Many host governments are beginning to recognize the economic potential in their ASM sectors, and donors are looking again at the sector. Companies are also looking externally for how to deal with the complex social issues surrounding ASM in partnership with their stakeholders. The complexities require a unified approach that enables all actors to understand their roles and responsibilities in driving forward a shared vision for what could be a transformative sector.

#### The ASM Sector in Mongolia

In Mongolia, the World Bank and other organizations (such as the International Labour Office (ILO), Swiss Development Corporation (SDC) and the Geological Survey of Denmark and Greenland (GEUS)) have researched the drastic increase of ASM over last two decades. This research has concluded that change to market economy after the collapse of the Soviet system combined with severe weather conditions impacted the means of income for many rural Mongolians from herding to ASM. From almost zero in early 1990s there are now believed to be well over 140,000 ASM miners (known locally as Ninjas) in Mongolia and the



number is believed to be increasing with the majority (90%) prospecting and mining gold and the rest coal, fluorspar and other minerals. This represents around 5% of the population with a likely greater proportion indirectly dependent on this informal sector. The exact numbers of artisanal miners in the region of the Gatsuurt Project is difficult to estimate as many are migratory, while participate in ASM as a hobby or to supplement their incomes, and others are fulltime ASM miners.

A common perception of ASM among policy makers and the general public in Mongolia is that it is a “nuisance” to be stopped. Key to the perception is that ASM is viewed as a temporary phenomenon, rather than a permanent occupation providing viable alternatives for poverty reduction and rural livelihoods for a significant population of Mongolians. Artisanal miners have faced a host of challenges in Mongolia, including a lack of legal recognition, which meant many were unable to access basic social services. On ASM sites, occupational health and safety standards have been non-existent, and outbreaks of disease are a constant threat as a result of poor health standards (Sustainable Artisanal Mining Project, 2011).

Practices in the ASM community also pose risks to the environment as a consequence of the mercury and other chemicals often used in processing which pollute water, soil and air, and destroy the landscape. In April 2010 the formalization of the artisanal mining sector in Mongolia was achieved through a majority vote in Parliament. This legislation provides that artisanal miners are able to secure mining land and hence viable workplaces and a stable income. It also provides for better access to occupational safety, social welfare and health services (Sustainable Artisanal Mining Project, 2011).

However, in practice, the artisanal mining industry is still marginalized at a Government and societal level with respect to regulation, support, broad social acceptance and awareness (SAMP KII, 2014). Key among the current challenges to the sector is the difficulty in accessing land legally, even though this should now be effectively facilitated through the legalisation of the sector. The majority of the country’s land is reserved as either geological survey, mining and exploration licence area, or as a protected or proposed protected area. This is a key land use conflict in Mongolia generally, both currently and in the future. Artisanal miners are required, by the legal system created to govern the sector, to apply for land to conduct ASM activities, however on application they find that they are unable to gain access to the land as it is already designated for a particular or future use that precludes ASM.

This issue is likely to become more pronounced in the coming years as artisanal miners find themselves increasingly marginalised as they are unable to work within the regulatory system designed to legalise their activities.

Further, tripartite agreements between soum governments, commercial mining operators and formalised ASM partnerships are theoretically able by law to be established, thereby allowing the ASM partnership access to an agreed area of the commercial licence area for ASM activities. However, this requires a level of trust between all parties and a level of understanding of the liabilities associated with implementing such an agreement, both currently lacking.

It is clear from the above, that the ASM sector in Mongolia, while having unprecedented legal recognition, still faces major challenges with respect to the practical realization of the intent of the legislation.

ASM will continue to pose a major challenge to soum, aimag, and national level Governments, with respect to effective management of the sector for more sustainable outcomes. The resources available to effectively

govern the sector (i.e. not just mitigate the impacts of ASM, but address the drivers of ASM) are limited (especially given the downturn in the mining sector in Mongolia over recent years). Moreover, as a result of these challenges, the *Strategic Environmental and Social Assessment of the Mining Sector in Mongolia*<sup>230</sup> conducted in 2014 concluded that given the above mentioned challenges there is an increased potential for land use conflicts both with the Government of Mongolian and with the large scale mining sector (LSM).

In order to fully understand the ASM challenges currently facing BGC, it is necessary to further extrapolate the relationship between large scale mining and the ASM sector generally, and in Mongolia.

### **Relationship with the Large Scale Mining Sector**

In general, ASM, with low levels of capital investment and mechanization, is very different in nature to large scale mining (LSM). As already mentioned ASM is practiced in many forms and globally provides livelihoods to a significant population who otherwise may not be economically active. However, ASM is also often viewed to contribute to social conflict, human rights violations, environmental degradation, and commonly lacks adequate health and safety practices. ASM mining also often occurs in locations where there is no LSM activity and the LSM sector has an extremely limited ability to influence ASM activities. Where the two sectors do overlap the relations between the two are not always defined by conflict (such as in Ghana, Guinea, DR Congo, Papua New Guinea and Tanzania), but the nature and location of the mining.

ASM in this context may be operating on the LSM concession, with permission or without, may be part of a settled or resettled community, or an in-migration. This relationship can be viewed within the context of corporate-community relations, with ASM as an outsider or as an established community member.

ASM can also pose a security threat and risk to company operations and personnel. This can be caused by the criminal or armed group elements that may sometimes accompany ASM, operating with no health and safety, social and environmental guidelines. On the other hand, the ASM sector is rarely given the same voice and rights in a conversation with large scale mining operators, meaning their interests are often deprioritized, and established livelihoods undermined. Addressing this is not a mine issue alone. ASM is a government and societal issue requiring skills and competencies outside of the mining company.

This complex relationship and coexistence challenge between licensed LSM companies and the ASM sector is acknowledged by the likes of the *Internal Council on Mining & Metals (ICMM)*, *Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development* and the *World Bank/International Finance Corporation (IFC)* and many of the other key multi and bi-lateral donors. This is certainly not a problem that is unique to Mongolia or BGC nor is there a 'silver bullet' to solve it.

LSM companies can play a role in supporting and facilitating dialogue and engagement on ASM issues. The role of LSM companies will necessarily vary according to the local context. Some of the complex issues that LSM companies are faced with include defining responsibility for environmental liabilities caused by ASM; and reputational damage arising from an association with unacceptable ASM social practices – from child labour to human trafficking. National governments and other actors can create frameworks to help address these concerns and in turn facilitate engagement of the LSM sector in the improvement of the ASM sector.

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<sup>230</sup> Sustainability East Asia LLC. 2014. *Strategic Environmental and Social Assessment of the Mining Sector in Mongolia*. Study commissioned by the Mongolian Ministry of Mining in partnership with the World Bank.

Further to the above, the LSM industry (through the likes of the *World Gold Council*) can support access to markets for responsible ASM mining that is not linked to conflict and which demonstrates appropriate environmental, safety and labour practices. However, the LSM industry does not support Trespass and Illegal Mining (TIM) activities that are controlled by criminal elements or armed groups, or activities which are in and of themselves criminal. It is important that a distinction be made between TIM criminal activities as compared with traditional, artisanal livelihoods associated with mining (this distinction is important to note given the current Gatsuurt context described in further detail in the below sections). In the case of TIM criminal activities, the LSM sector has a responsibility to ensure that their own activities do not support such criminal activities or conflict. However, it is difficult for LSM companies to engage where Governments have yet to make commitments and take decisive action to eliminate criminal elements and armed group TIM activities. This is particularly so, in light of the Mongolian context where the ASM sector legislation is yet to be firmly established, and the precedent for effectively managing this type of activity within the scope of the revised legislation has not been tested with respect to Government response. The international development community, the large-scale mining industry, civil society and others all have a role to play in encouraging governments to make such commitments and enforce the rule of law. Where national and local governments have established firm commitments and taken steps to eliminate criminal elements and armed groups from TIM activities, LSM companies can play a role, especially where those activities are near LSM operations.

### **The Emergent Gatsuurt Situation**

It is important to emphasize that the recent (September 2015 to present) ASM activity around the Gatsuurt property is not a poverty driven livelihood strategy that is typical throughout the rest of Mongolia. Instead it can be more accurately described as TIM activity, as described above. All the recent incursions that have occurred at Gatsuurt appear to be premeditated criminal acts with miners gaining access to the site in large vehicle convoys, breaking through barricades and deliberately overcoming or ignoring other barriers and environmental and safety measures in place. Since September 2015, the illegal activity at Gatsuurt has escalated and BGC's security in cooperation with the Mongolian Police have undertaken some 28 operations during which over 5,000 intruders and more than 200 vehicles have been expelled from the area.



### Summary of Impacts

The intent is that TIMs will be excluded, as far as practically possible, from the Gatsuurt Mine Licence Area for the duration of construction and operations and it is likely that they will migrate elsewhere in Mongolia. The dynamic emergence of the TIM situation at Gatsuurt is representative of a highly mobile, and transient activity. However, the desired exclusion of this activity from Gatsuurt is unlikely to prevent similar activity in other locations including potentially in the open pits at the Boroo location.

In order to enforce exclusion of TIM at Gatsuurt, there is the risk that Project security (public and private) will come into conflict with TIMs if they attempt to continue their activities at the site. Security operations, in concert with relevant local authorities, to remove TIMs from the site have proceeded peaceably up to this point. During project construction and operations there will be a greater project personnel presence, including a slightly larger security contingent at the site. The Project recognizes that during construction and operations the attractiveness of the site for TIMs activity is likely to change (for example, due to the presence of an open pit and stockpiles) and will require ongoing vigilance and review. The attractiveness of Gatsuurt by the TIM sector may also be significantly impacted by external factors, such as the general

economic climate and status of other mines in the region. As such, the potential impact of TIMs is difficult to predict and will require ongoing vigilance. The mitigation measures proposed are very much focused on ongoing, proactive information gathering and analysis of TIM activities and updating of management measures as appropriate.

Potential Impact	Impact Characterisation	Potential unmitigated significance	Summary of Key Proposed Control, Mitigation and Enhancement Measures	Relevant Management Plans & Policies	Potential Residual Significance
<b>Land Use and Livelihoods, (EBRD PR 1, 3) (EBRD PR 1, 2)</b>					
Loss of access to the Gatsuurt Mine Licence Area by TIMs.	Definite Direct Negative Long-term Extensive range	Minor	<ul style="list-style-type: none"> <li>Enforce exclusion.</li> <li>Undertake information gathering and analysis and re-evaluate impacts and mitigation measures on the basis of results (see Company Commitments section below).</li> </ul>	<ul style="list-style-type: none"> <li>Strategic Action Plan</li> <li>Mutual Assistance Agreement</li> </ul>	Very Low
<b>Community Health, Safety and Security (EBRD PR 1, 4)</b>					
Risk of conflict between TIMs and Project Security	Possible Direct High moderate negative Long-term Intermediate range	Moderate	<ul style="list-style-type: none"> <li>Fully align with the Voluntary Principles on Security &amp; Human Rights (VPSHR), including implementing a Mutual Assistance Agreement with the Mongolian Police and specific internal security protocols.</li> <li>Develop a Strategic Action Plan with key partners and other Mongolian stakeholders (see Company Commitments section below for further detail).</li> </ul>	<ul style="list-style-type: none"> <li>Strategic Action Plan</li> <li>Mutual Assistance Agreement</li> </ul>	Minor



## COMPANY COMMITMENTS

### Management Measures

Despite the criminal intent, BGC's interactions with the intruders continues to remain non-confrontational and the Company's planned response strategies focus on fully aligning with the **Voluntary Principles on Security & Human Rights (VPSHR)**. BGC has tried to improve security around Gatsuurt including implementing a Mutual Assistance Agreement with the Mongolian Police and specific internal security protocols. However, it is acknowledged that these actions alone will not solve the TIM issues in the longer term.

Going forward BGC is focused on developing a Strategic Action Plan with key partners and other Mongolian stakeholders (to be determined). To this end, BGC has recently made amendments to the Deployment Agreement with the Police, as well as internal protocols/SoPs to ensure they are based on tested '*good practice*' (i.e. the VPSHR) and that human rights are respected and protected by all parties.

The proposed Strategic Action Plan will include focus on key areas including:

#### Information Gathering & Analysis:

- Conducting and updating the social/security risk assessment;
- Further identifying and understanding the core drivers and associated societal impacts of TIM activity;
- Assessing existing punitive measure options through liaison with the Police and judiciary; and
- Establishing information gathering network protocols with key stakeholders.

#### Communication & Awareness Raising:

- Developing and delivering a community-focused educational program to discourage intrusions and TIM activity (addressing the potential negative legal consequences of being complicit in illegal mining, as well as the associated environmental, health and safety risks/impacts);
- Continuing internal educational and awareness programs for all BGC employees regarding the risks of colluding with, or being involved with TIM related activity;
- Checking and reinforcing community awareness on the BGC grievance mechanism and ensuring that the Community Relations department is fully aware of what constitutes an allegation of a human rights abuse and how to report it internally.

#### Government & Civil Society Engagement:

- Engaging with the Mongolian Government through various levels to campaign and seek support/resources for the improvement of local public security (including an effective Community Policing Model);
- Encouraging all levels of Government through respective channels to help them accept and more effectively implement their obligations to improve the enforcement of existing laws related to Artisanal & Small Scale Mining (ASM), trespass and overall community security;
- Raising Government (and local media) awareness about the global challenge of formalizing ASM and the coexistence challenges with large scale mining operations;
- Assessing the potential to partner with ASM interested NGOs/Donors including the *International Labour Office (ILO)*, *Asia Foundation* and *Swiss Agency for Cooperation & Development* (Sustainable Artisanal Mining (SAM) Project).

#### Effective Deterrent:

- Reviewing and assessing the Security Department standard operating procedures, tactics, training, equipment and resources and rectify where necessary;
- Ensuring that the Mutual Assistance Agreement (MAA) with the Police is maintained, exercised and monitored;
- Conducting regular organized exercises, in collaboration local Governor, Police and emergency department to backfill the TIM excavations/shafts following a strict protocols;
- Assessing the options to strengthen the existing observation and recording methods (e.g. thermal cameras, CCTV coverage, photographs, security patrols, observation towers, etc.) as an early warning system and to gather potential evidence for prosecution;
- Ensuring a Perimeter Protection Plan is implemented to strengthen the demarcations of the licensed area clearly and visibly using fencing, other barriers and appropriate signage (establishing concentric circles of control and buffer zones).

#### **Security Response:**

- Ensuring that appropriate resources are available for personnel to effectively respond to possible threats including manpower, supervision, equipment – PPE, communications, and non-lethal options, etc.;
- Ensuring that appropriate training and levels of competency have been attained for personnel to effectively respond to possible threats including legal use of force, equipment use, field level risk assessment etc.;
- Defining what is considered a significant security incident and ensure it is reported internally (and externally to the Police) and dealt with accordingly (and also review the Emergency Response Plan in accordance with such incidents).;
- Ensuring the continuation of embedding international human rights principles, specifically those enshrined in the VPSHR, in all security related processes and actions;
- Ensuring human rights training is provided for all BGC personnel including Government security forces deployed for intervention.