

FINAL REPORT

Improving the life of informal Gold miners in Zaamar Gold field

Prepared by
Mongolian Nature and Environment Consortium

Address: Erkhoo street, Sukhbaatar district,
11-r khoroolol Building 10/G
Ulaanbaatar
Mongolia

Tel: 976-11-354365
Email: mnec8@yahoo.com
Website: www.mnec.org.mn

Ulaanbaatar 2011

TABLE OF CONTENTS

PREFACE

LOCATION MAP

ACRONYMS

SUMMARY

1. OUTLINE OF THE EVALUATION STUDY

- 1.1. Project Background
- 1.2. Project Overview
- 1.3. Implementation Objectives and expected outcome
- 1.4. Scope of Work
- 1.5. Implementation Period

2. METHODOLOGY

- 2.1. Evaluation Question
- 2.2. Schedule of the Study

3. RESULTS

- 3.1. Project Implementation
 - Planned activity
 - Actual outputs
- 3.2. Impacts and achievements
- 3.3. Recommendation

ANNEX

PREFACE

Since 1990, following the collapse of the former Soviet Union and the beginning of Mongolia's period of economic transition, rapid growth of industrial outputs and exports has taken place within the mining sector. Gold mining industries in particular have expanded rapidly in the last fourteen years and now generates 70% of the country's total foreign currency. Although of great economic importance, it has created negative impacts that lead to destruction of the environment and consequently makes life more difficult for local people, especially herders who lose natural pasture land and water resources.

In the last seven years, the development of informal gold mining has become a new phenomenon. The main factors of informal gold mining developments are caused due to economic collapse of state-owned industry and a bankrupt agricultural system, subsequently insecure social security and reduction of income sources for people. At approximately the same time rural herder families had lost livestock due to "dzud", desertification, and land degradation resulting in the larger number of low income rural families that have joined the informal mining sector, and also includes students for the warmer months to obtain income for their tuition fees, accommodations, and living expenses for the forthcoming academic year of college. These unemployed people that have become informal gold mining workers are locally referred to as *Ninjas*.

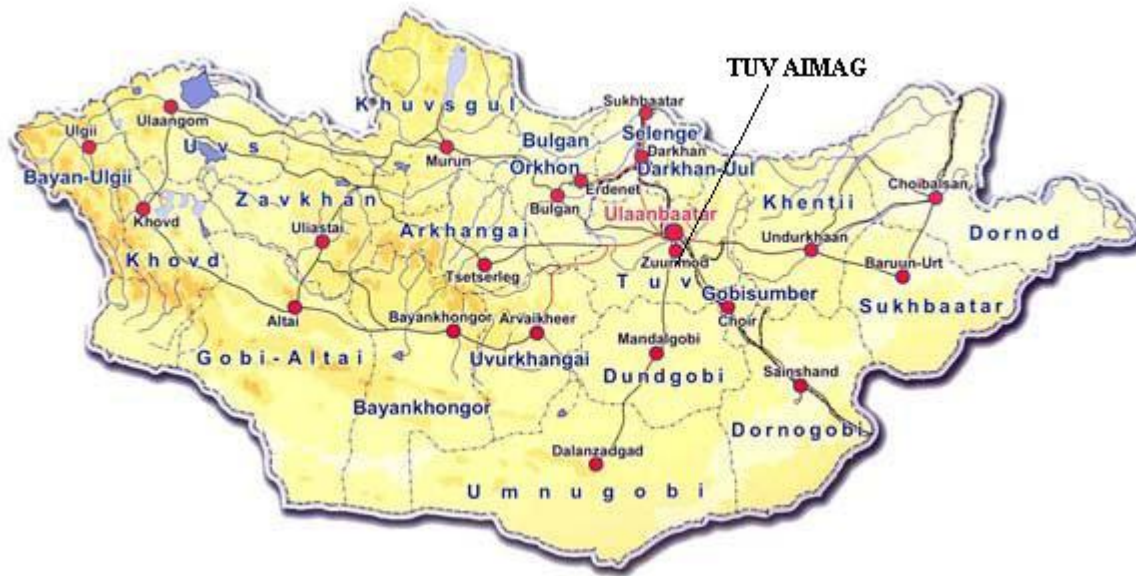
Now there exist approximately 100,000 informal miners in Mongolia and twenty percent of them belong to the targeted case study area "Zaamar". These miners (called Ninja) live illegally, often times in dangerous locations with little access to health services or schools for children. Numerous human rights violations are incurred against the miners and their families. Children do not attend school and are forced to participate in labour intensive activities. The miners work with little regard for themselves or the environment; often using cyanide or mercury in unsafe ways. When a mine no longer produces, it is left open as a permanent scar upon the land. We made comprehensive social economic survey in Zaamar area. On the base of results of socio-economic survey, we have organized further activities.

The main gold mining area is the Zaamar region, situated in the Tuul River valley, where there are approximately twenty gold mining sites at present. In the case of Zaamar, informal gold mining is creating environmental destruction, consequently making life difficult for the local people, especially herders, who must compete for pastureland and water resources. The water supplies are becoming increasingly polluted while the land is being negatively affected by gold mining activities. The polluted water resulting from the practice of 'gold washing' is being discharged as effluents into the land and water, causing severe localized environmental damage.

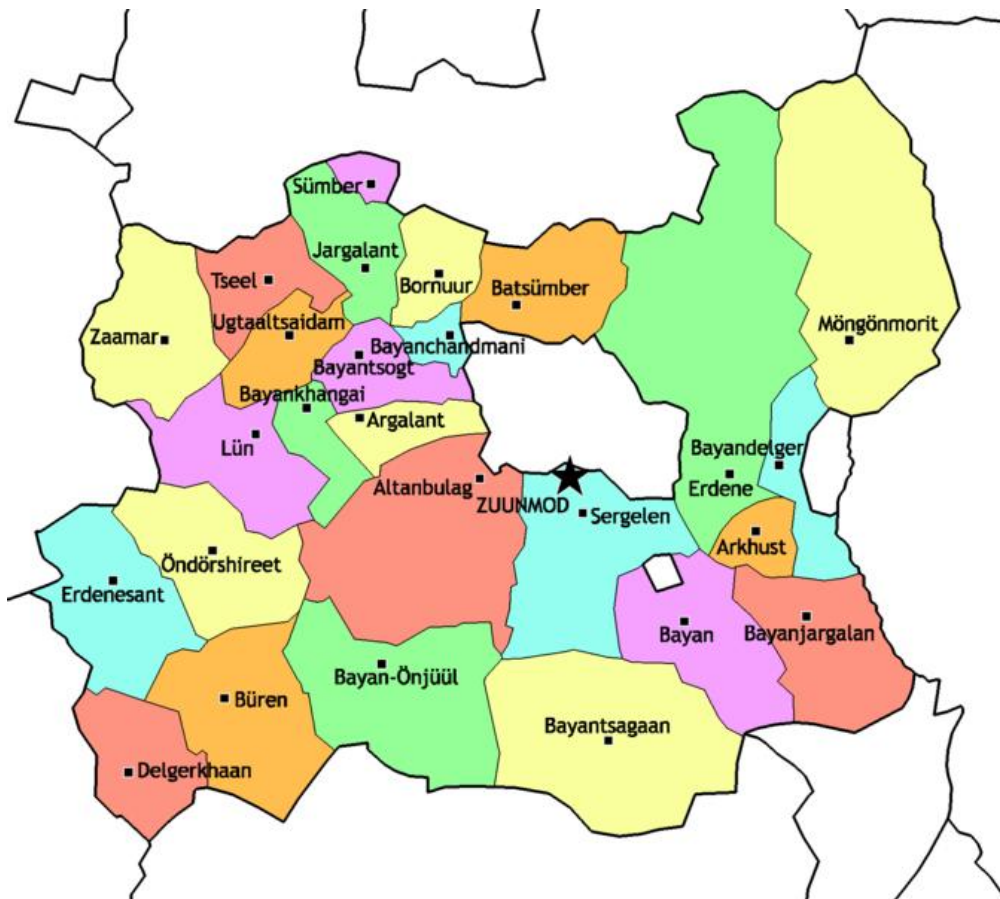
There is an overlap of regulations regarding land rights and usage that causes conflict between miners and the native community of herders. Although the Mongolian government has passed a number of different laws for controlling pollution in gold mining areas, the major enforcement agency (the State specialized inspection agency under the Prime Minister's office of Mongolia) has experienced difficulty in implementing the pollution control measures effectively. In addition, there are currently no mining-specific EIA procedures.

Considering these facts, an appropriate strategy is needed for sustainable mining development and behavior. Comprehensive gold mining development is an extensive economic and social undertaking. Poverty alleviation is a long term and arduous task. The governments at all levels should give priority to these two tasks and ensure their implementation through enhanced leadership and the introduction of a leading official responsibility system

LOCATION MAP



Tuv aimag's map



Zaamar sumiin zurag



Box 1: Brief about the Zaamar

The total land area of Zaamar soum is **281,207** ha with 58 thousand head of livestock. The population of the soum is counted as registered and non-registered. The registered population is **5,428** including the unregistered people it becomes more than **10,000**. The main income sources of the soum population are livestock herding and agriculture, such as produce and crop planting. Annually they plant vegetables on **22** ha and crops on **430** ha areas and collect **500** tonnes of hay and fodder for livestock. A smaller number of people are employed as public servants such as schoolteachers, health care doctors, and soum administration (governor, finance and police). There are **679** households with livestock, and **710** families in Zaamar without livestock. The total number of households in extremely poor condition is **55** and poor families are **86**.

ACRONYMS

<i>Aimag</i>	Province
Soum	<i>District</i>
Bag	<i>Sub-district</i>
Placer	<i>Placer gold deposits containing gold derived from weathered lode deposits that are transported by hydrological processes and concentrated by gravity unusually in depressions or pockets of sand and gravel bars where water flow is reduced. Placer deposits may be located near or on the surface in an unconsolidated form, or may be buried under rock debris and possibly even cemented back into a 'hardrock' form.</i>
<i>Hardrock</i>	Mining done by drilling, blasting, and removing layers of rock to extract gold. Commonly uses cyanide in the processing phase.
<i>Mercury amalgamation</i>	In this gold processing method milled gold-bearing ore is mixed with liquid mercury. The gold forms an amalgam with the mercury, which is then separated from the waste ore. The gold is recovered from mercury using one of several possible methods including: heating the amalgam, during which the mercury is volatilized leaving behind the concentrated gold as a precipitate; or using a filtration or acid chemical reaction method.
<i>Dzud</i>	<i>Severe snow storm occurs in winter and hardens snow cover that creates an extended deep freeze in which animals can not graze.</i>
MNET	Ministry of Nature, Environment and Tourism
SPSS	The Statistical Package for Social Survey
ISSA	Integrated System for Survey Analysis

SUMMARY

Drought, snow storms and pasture degradation have undermined rural herders' livelihood and they have turned to be engaged in artisanal mining and they are called *ninja*, a Japanese term referring to medieval snipers.

Zaamar goldfield is located in Tuul river which is flow to Selenge River basin that flow to globally important Baigal lake, Russia. The Gold raining companies in Zaamar Gold field are using late technology, many gold is keeping in used mining. So, ninjas are washing the used ore and polluted water. There are living and working 20,000 ninjas. Of the 20,000 , 49% are woman and and 10 % are children. They work in harsh conditions without land entitlement and health insurance, and are exposed to toxic chemicals such as mercury and cyanide.

Goal of project was to improve the socio economic conditions of the in-formal gold miners living in Zaamar soum by pilot actions capable of being self-sustaining and widespread replication.

The socio-economic condition, health and basic social services of Ninjas were studied using the descriptive approach, and working conditions and occupational safety were studied through observation and were based on relevant available statistical data. The environment condition of Ninja's living and working places were studied using through environment screening process. A safe legal environment al issues for miners and requirements of their training needs identified on based of results of meeting with individual people who are informally engaged in gold mining activities and their families, at the time of conducting the survey. Health and environment status of Ninja Miners improved by providing training on health and education, for proper use and storage of toxic chemicals and for sustainable mining practices. Supported Ninja Miners and their families by providing a safe legal environment to work and live. Assist Ninja Miners for establishing a community based NGO for in-formal miners and start up its operation.

All these studies were done by national consultants recruited by the MNEC.

1. OUTLINE OF THE EVALUATION STUDY

1.1 Project background

Zaamar goldfield is located in Tuul river which is flow to Selenge River basin that flow to globally important Baigal lake, Russia. The Gold raining companies in Zaamar Gold field are using late technology, many gold is keeping in used mining. So, ninjas is washng the used ore and polluted water. There are living and working 20,000 ninjas. Of the 20,000 , 49% are woman and and 10 % are children. This illegal mining, called Ninja mining, is quickly growing and Ninja miners have created more employment on their own than the government or business can provide. The Ninja's do not want to migrate to the cities where they would join the ranks of the poor, unemployed slum dwellers. In Ninja mining they are able to provide for themselves and for their families.

However, this comes at a great cost. The miners are subject to great dangers working in abandoned or newly dug pits that can collapse or contain other hidden dangers. Miners frequently use cyanide or mercury that is acquired illegally without knowing how to properly use, maintain, or store such chemicals. Many miners are poisoned or burned because of this. Because the miners are living and working in illegal settlements, they are subject to human-rights abuses from the military, police, and private security forces and families do not have access to health or educational facilities. The switch to informal gold mining has been rapid, and the ninjas have created more employment by their own efforts than have the combined efforts of Government, international donors and private enterprise. The Ninja Mining Report indicated that informal gold mining is now the large cash-generating activity in rural Mongolia and is very efficient at permitting rural households to enter the cash-based market economy.

Serious problems exist. Main problem of ninja mining in *Zaamar* gold fields

are:

- the informal miners are disorganized and lack any voice;
- widespread human rights abuses by police and private security forces;
- large numbers of ninjas are killed, maimed or poisoned each year when mining;
- substantial mercury poisoning amongst households of hard-rock ninjas;
- ninja children in ninja ger settlements have no education;;
- ninjas in ninja ger settlements have little or no access to medical services;
- severe environmental damage in many locations.

1.2 Project Overview

This project will work to improve the situation of the Ninja's and their families by working with the Mongolian Government to pass laws to support the miners allowing miners to hold title to the property they live on and the property they work on. This will afford them protection from the police and private security forces, legitimize their claims on the land, and ensure that Ninja mining is a legitimate form of economic development.

Secondly, this project will provide much needed trainings on health and environmental issues for the Ninja Miners. In providing health and environmental training for the miners we will ensure that they are living in a sustainable manner and are caring for the environment and their families the best they can. If miners know how to properly use and store their chemicals they will lessen their impact upon the land. If Ninja Miners are able to reclaim the land they work on it will be safe for children, livestock, and future generations and may even be used for other activities such as pastor or farming.

Through this project, the miners will be elevated to actual citizens in Mongolia

instead of this informal group that works under the radar. We will work to ensure the miners have a say in government and how they live. They will be better organized and use better practices to lessen i their impact on the environment.

1.3 Implementation objectives:

Project implementation objective is to improve the socioeconomic conditions of the informal gold miners in Zaamar by pilot actions capable of being self-sustaining and widespread replication.

1.4 Scope of work

Scope of work are :

- To conduct socio-economic and environment survey in Zaamar gold field area
- To provide legal status for the Ninja Miners and to legitimize their claim on land where they live and work.
- Provide training for Ninjas on health and educational issues and proper use of toxic chemicals and sustainable mining practices including rehabilitation land destroyed by Ninjas
- Establish Ninja community NGO and start up its operation

1.5 Implementation period : April 2009- May 2011 with possible extension

2 Methodology

The socio-economic condition, health and basic social services of Ninjas were studied using the the descriptive approach, and working conditions and occupational safety were studied through observation and were based on relevant available statistical data. The environment condition of Ninja's living and working places were studied using through environment screening process.

A safe legal environment al issues for miners and requirements of their training needs identified on based of results of meeting with individual people who are informally engaged in gold mining activities and their families, at the time of conducting the survey. by national consultants working in Zaamar gold field areas. All these studies were done by national consultants recruited by the MNEC.

2.1 Schedule of the study

With financial support of AFFED , consultant team conducted the survey by developing methodologies, collecting and processing data, analysing data, and producing report, covering the period between July 2009 and January 2010.

3 The results

Project Implementation

3.1 Planned activities and actual outputs

3.1.1 **Planned activity:** Conduct inception workshop on sustainable mining

3.1.1. **Actual output: Inception Workshop on sustainable mining community conducted.**

Two person from consortium had visit to the Zaamar soum and met with Governor of the Zaamar soum and discuss the project site and agreed to select Hailaast Bag where most gold mining companies are located. And there are living most illegal mining communities (Ninjas's households).



Fig. 1. Khailaast Bag



Fig.2 Meeting with Governor of Khailaast Bag



Fig. 3. Meeting with Governor of Zaamar soum



Fig.4. Visit to Hospital of Khailaast Bag



Fig.5. Training for ninjas communities, Hailaast Bag



Fig.6. Training of teachers for school in Hailaast

The Inception workshop organized 2-4 June, 2009 in the Hailaast Bag. and introduced project goals and work plan for implementation project. Total 30 participants were participated in the above inception workshop. Ms. Ms. Gantsetseg, Hailaast Bag Governor opened inception workshop Workshop and noted that workshop contributes to sustainable mining development in Zaamar gold field.

The workshop discussed the implementation of the Project including: objectives, analysis of

issues, and identification of findings, conclusions and recommendations. In this workshop attended representatives of stakeholders such Mr. Dugarchignaadorj, chief of Bag's Parliament, M. Chuluunbat, Director of secondary school of Hailaast, D. Purevsuren, director of Local hospital and representatives of Ninja communities.

Ms. Oyun, member of Bag's Parliament was selected as project local coordinator. She is living in center of the Hailaast Bag.

The Ger information centre has been open that was fully operational serving ninjas in the project will commence activity in a ninja ger settlement. Health and environment training materials will be prepared and published. One set computer, LCD, tables and chairs, digital camera and purchased and installed in ger information centre.

Ger information centre was opened and it fully operational serving ninjas and project that commence activity in a Ninja's communities



Fig.8. The Ger Information center

3.1.2 Planned activity: Conduct socio-economic survey of the Hailast bag of the Zaamar soum

3.1.2. Actual output: National consultants were selected and conducted survey on socio-economic conditions of the Hailaast Bag of the Zaamar Soum.

The results of socio-economic survey are the below

Education . Of informal gold miners, 38.7 percent had incomplete secondary education, 26.1 percent had complete secondary education, 24.1 percent had vocational education, 3.6 percent had elementary education and 2.7 percent had no education. Education level of informal gold miners was a bit different by gender. Men with incomplete secondary education were similar and by 3 points with regard to complete secondary education. Of total informal gold miners involved in the survey, persons with higher education who do not work according to their profession account for 2 percent and women are higher than men by 5.48 points, according to gender.

Those between 35 and 44 years of age accounted for 31.25 percent, 45 and above constitute 25.00 percent of persons with vocational education, uneducated persons between 25 and 34 constitute 14.29 percent, and miners between 15 and 24 constitute 15.38 percent.

Informal gold miners who were engaged in other activities besides gold mining

accounted for less than those who engaged in no other activities by 45 points, and double employment in placer mining accounted for 27.03 percent. As for profession, most of miners 32.43 percent persons with vocational profession were relatively more than those with other professions were.

Working and living conditions. They live in non-permanent manner, residing in gers, tents and shelters like small wooden houses, in the place where they mine gold. It is possible to classify informal gold miners into mobile and sedentary, according to their manner of living. **“Mobile”** gold miners are people who live far from the center of a soum or particular mine, and come to work to the site for days, weeks and months. These include those who live in close proximity to the mines, work during the day and return home in the evening, miners from remote areas work there by renting gers or living in homes of acquaintances.



“Sedentary” gold miners include persons with their own gers and shelters who work and reside at a particular mine for more than 6 months.



As informal gold miners have work places and shelters at the same place, it can be viewed that they are under the influence of “additional” cause of illness and are affected by risk factors resulting from gold mining for 24 hours. In other words, due to the impact of dirt and noise during gold mining and activities of extracting and panning gold at home, the period, frequency and side-effects of those factors on human health might be higher.

Since informal gold miners have work place and shelter at one place and are subject to risk factors resulting from gold mining for 24 hours, they are affected by the influence of “additional” causes of illness.

Survey participants responded that worries and fears from being buried in a landslide, falling down and getting into accidents, were hardships and difficulties that concern them more than not having water, home and electricity. It shows that informal gold miners are subject to mental difficulties rather than basic human needs for shelter, food, and clothing.

Registration and civil registration. Migration is a one of the rights legislated by the Constitution of Mongolia and citizens of Mongolia have rights to freedom of movement within the country, freedom to choose the place of one’s residence, and freedom of choice when creating a living environment, engaging in social life and basic social care services. Mongolia regulates domestic migration issues through the Constitution of Mongolia, Law on Civil Registration, Law on Administrative and Territorial Units and Their Governing Bodies, Law on

Legal Issues of the Capital City and other related legal acts and documents.

The result of this survey illustrates migration, civil registration and difficulties related to registration of informal gold miners. Of informal gold miners in Hailaast Bag covered by the survey, 47.74 percent were local residents and 52.26 percent were migrants.

Civil registration documents are essential for informal gold miners to access basic social services. The existing surveys mentioned that informal gold miners face difficulties in accessing health and social services in the local area where they reside and work due to lack of documents and registration.

Of those involved in the survey, 45.95 percent have registration in the local area, where they are engaged in informal gold mining and 54.05 percent have no registration.

The majority of informal gold miners responded they have an ID card, half responded they have a health insurance card and 4.5 percent responded they have no documents to the question, “Do you have any civil registration document at the moment?”

The majority of respondents were native residents of the local area. However, 4.5 percent responded that they had no documents, which shows that there are many unregistered persons in the local area. This may be connected to the fact that many informal miners who are engaged in mining as a temporary job and are less likely to settle in that location, rather than a lack of attention by local administration to register these persons.

Difficulties in civil registration. During interviews, it was observed that informal gold miners, with their nomadic lifestyle, have less intent registration with local administration. When making clarification on reasons for not having civil registration, 29.51 percent responded there was no need to be registered and 14.75 percent responded that they did not know how to be registered. Of unregistered persons who think registration is essential, 25.00 percent have no migration documents, 5.00 percent have no ID cards and other documents, and 15.00 percent do not know where to get registered.



most of illegal miners are young people (25-34 years old) When asked about difficulties incurred during registration, 18.18 percent of informal gold miners who went to the local registration office responded that they have no migration documents, 18.18 percent are unable to afford the registration fee, and 45.45 percent do not know how to get registration. It illustrates that a lot of difficulties are caused by persons themselves during registration.

When asking informal gold miners who are interested in getting registration and went to registration office, why they do not have migration documents, they responded that they did not know such documents were necessary, have lost them or answered it took too much time to get them.

Difficulties incurred by the registration office for migrants include impolite communication of officers (27.27 percent), too many documents required for registration or too much bureaucracy (18.18 percent) and no possibilities to meet registration officers (36.36 percent).

According to the above results, informal gold miners do not prepare related documents necessary for registration due to lack of information on registration process. On the other hand, the communication culture and registration stages cause difficulties during civil registration procedures.

Employment and income. Informal gold miners in selected Hailaast Bag, were involved in the survey and this group of people refers to an active economic population and work force that engage in informal gold mining with purposes of earning income.

When asked about reasons for getting involved in informal gold mining, 31.53 percent of miners responded their reason was to pay their children's tuition, 34.23 percent to get apartments, 26.13 percent to pay debts, 27.93 percent to find treatment money and 63.06 percent to improve their livelihood.



In addition, half of those surveyed answered they engaged in informal gold mining because they had no other source of income. This might be connected to scarcity of work places and having no profession.

Labor productivity is a product and service created during a unit period and productivity of gold mining per day depends on many things, including the yield of site, skill, experience, age, and gender of persons.

As for productivity of informal gold miners by age of respondents involved in the survey, the productivity of those aged between 25 and 34 was relatively higher than that of others or 3.0-5.0gr gold a day. Labor productivity of men per day was more than that of women by 1-2 points. Mining for informal gold miners yields an average of up to 0.65 gr (approx. MNT5.500) of gold per day, and finding nothing is not unusual.

According to the responses of survey participants, of whom 51.85 percent engaged in gold mining in one place, 38.27 percent in 2 to 3 places and 9.88 percent in more than 4 places, half percent of miners can be viewed as “specialized” miners who work in several places.

These miners can operate as micro-mines with official organization in the future, since their income per day depends upon employment period, skills, and experiences.

Selling gold and accumulation. In connection with the rapid increase in the number of gold miners, the Mongol Bank started to purchase gold from individuals starting in 2002. There are some issues related to selling and storing gold. Survey respondents reported that they sell extracted gold to ger shops in the area (37.84 percent) or to Mongolian citizens (61.26 percent). They sell extracted gold mostly to local “gold exchangers”, those who collect gold relatively low rate by visiting gold miners everyday. Sometimes, they barter gold for goods and alcohol. It would be possible to eradicate risky problems that gold miners encounter and it would be positive for informal gold miners if a “mobile bank”, one that purchases gold at the current rate, were to operate.

The reason for not accumulating or saving gold may be due to small amounts of income, since they (86.48 percent) re-mine used soil and lack specific equipment for panning gold or, in other words, use ordinary tools such as pan, sieve, and shovel. As for informal gold miners with cash accumulation, 60.00 percent of them save their accumulation in banks, 33.33 percent send it to other homes, 6.66 percent lends it to others, and 6.66 percent saves it with them.

Miners responded that difficulties related to saving gold and cash include stealing, robbery and lack of possibilities to transfer money.

When asked, “What is the best way to sell gold?” 19.81 percent of informal gold miners involved in the survey responded that a mobile bank should operate and 63.96 percent responded that gold exchangers should be brought to mining sites.

When asked whether informal gold miners took out any loans for particular purposes since their engagement in mining gold, 16.21 percent responded that they received loans equal to 500,000 MNT to 2,000,000 MNT and 83.78 percent, they got no loan.

Labor equipment and schedule. Gold miners involved in the survey, dominantly dig holes, remove soil, sieve, and pan the soil for gold. According to the work assignment of the gold miners in accordance with their sex, males are more likely to crush stones (1.37 percent), to blast (2.74 percent), and dig. Females generally remove soil (71.5 percent), fetch water (34.21 percent).

The results of survey shows that 15-44 year-old-males work 1.7-3 hours a day but 15-25 and 40-50 year-old females work 3-5 hours a day.

Informal gold miners mostly use hand equipment such as shovel (96.40 percent), bag (64.86 percent), container (76.58 percent), bucket (40.54 percent), crowbar (50.45 percent), and spud (39.64 percent) dedicated for physical works.



After observing the equipment, it was seen that shovels and crowbars are blunt, and the containers and bags do not meet basic work requirements. This is related to the lack of equipment.

Illegal miners are starting to work place

Some miners with more financial abilities use sieves (36.94 percent), mills (7.21 percent), fans (23.42 percent), and water pistols (6.31 percent) in order to reduce the work load. In order to reduce their works and increase the productivity, it is necessary help the miners and provide them with opportunities to choose suitable equipment.

Personal protective equipment and its usage /PPE/. During the survey, protective equipment and working clothes of the informal gold miners in accordance with their work assignments were observed. Generally, they do not use special uniform or personal equipment. They work in their daily casual clothes and do not use gloves, mask, or oxygen masks.

Almost none use masks, even when the area was dusty with loose soil. The most common

protective equipment of informal gold miners is gloves, fastening strip, and mask. The most useful protective equipment is safety rope, overalls, mask, protective glasses, and appropriate footwear.

When asked about the difficulties in protective equipment usage, 30.63 percent answered expensiveness, 43.24 percent lack of protective equipment, 10.81 percent cannot find a place to buy protective equipment, 9.91 percent do not know which clothes to use, and 6.31 percent cannot make choice.

Informal gold miners do not have enough knowledge on the usage of protective equipment. Therefore, it is necessary to conduct training on the importance of protective equipment, the purchase of and permanent usage of protective equipment, to give methodology instruction, and hygienic labor assistance.

Work and rest regime of informal gold miners. The 5th provision of the Law on Labor of Mongolia states that weekly working hours are up to 40 hours, and a normal working day should last up to 8 hours. Working hours of informal gold miners vary depending on gold mine and seasons. If the gold mine is enormous or temperature is warm /during the summer/, miners often work for more than 11 hours per day.

Working hours, break time, weekends vary depending on gold scarcity and season. They have no standard work schedule. The sound and noise level, dust and vibration in the workplaces of informal gold miners exceed the acceptable level. It shows that informal gold miners risk suffering from respirator problems caused by dusts, and deafness and hearing impairment caused by noise. Higher vibration during stone crush and milling causes problems for their bones, muscles, and organs. Due to lack of toilets, sinks, domestic and industrial wastewater disposal facilities that meet hygiene requirements, miners dispose wastewater straight into the soil, increasing soil pollution and causing infectious diseases in the area of mass inhabitation.



Informal gold miners work an average of 10 hours per work day and their work hours, breaks and weekends depend on gold yield, seasonal conditions and the weather. They do not follow any work and rest regime.

The police stopped Ninja's work.

Access to health services. Whether or not informal gold miners had civil registration, the majority of them reported having access to medical professionals and a minority to friends when they were ill. It shows that soum and local hospitals render health services to informal gold miners without considering civil registration and they have access to physicians at nearby soum and aimag hospitals when needed.

With reference to fetching heavy soil, working in holes under forced and limited situation, feeling cold and breathing dust, 48.64 percent of informal gold miners reported back pain, 19.81 percent reported being cold, 24.32 percent reported rheumatism and 24.32 percent experience eye irritation.

Men were involved in 2-4 times more accidents than women. They usually got injured when

digging holes, sifting soil and panning gold. Those who work both day and night generally have a high risk of accident and injury. During interviews, men responded that they fall down and are hit by a bag of soil because of torn ropes since those ropes are not for reinforcement purposes and are usable for only 8 to 10 days.

As for accident causes related to labor conditions, those related to being covered with soil account for 55.55 percent, rope breakage accounts for 18.51 percent and falling into holes accounts for 55.55 percent.

It is believed that the main barrier to access to medical services is the remoteness of informal miners from health care organizations. Many have lost their lives due to wasted time in travelling to obtain emergency services as a result of their work conditions and activities.

When informal miners asked for help from soum hospitals, emergency services often do not come in time. On the other hand, it is difficult for medical staff to render health care services to them since they have no address and indefinite locations.

Informal gold miners purchase medicine and drugs from drugstores in soum centres (64.47 percent), ger shops (17.12 percent), individuals (13.51 percent) and 4.50 percent of them use what they have. It shows that 40.79 percent of them buy medicine and drugs from places without reliable guarantees.

The insurance coverage of the participants was 58.56 percent. However, generally more women were covered than men, with a gender breakdown of 78.57 percent women and 50.94 percent men reporting insurance coverage. Of those covered by health insurance, 59.18 percent responded that they paid an insurance fee last year. It is unlikely that the rest were covered by insurance since they did not pay insurance fees.

The reasons informal gold miners were not covered by health insurance are as follows:

- 36.59 percent responded they could not afford the fee;
- 31.71 percent had no official employment;
- 9.76 percent had no registration or documents;
- and 9.76 percent do not know.

Due to a lack of organization as entities and social insurance, informal gold miners have no access to benefits and compensations.

Reliable drug services, examination and diagnosis, special check-ups, professional consultation and training on preventing accidents and injuries, control and healing activities, and reproductive health care and services are essential for informal gold miners.

Access of informal gold miners to social care services. According to the survey results, 20.0 percent responded that they receive any pension and benefit, whereas 80.0 percent get nothing. Of informal gold miners receiving pensions and benefits, 55.0 percent were residents of the local area where they engage in mining activities.

Of informal gold miners who have monthly income below 150,000 MNT, 14.41 percent earn income below the government approved minimum wage. Social insurance fee payment depends upon income amount and social insurance coverage of those with average monthly income of 70,000 to 149,000 MNT was more than that of other groups.

Of survey respondents, 63.06 percent reported that social insurance is important for receiving a pension, 27.93 percent for benefits, and 20.72 percent for getting accident insurance.

Most of the elderly who participated in the survey received their pension from their local residential areas, whilst others could not receive their pension due to fewer employment periods in public organizations, insufficiency of the payment of social insurance premiums and lack of registration. It can be viewed, therefore, that there is an ignorance of the significance of insurance, ways of paying premiums and voluntary insurance.

Informal gold miners' needs for social insurance. Although informal gold miners had insufficient knowledge on social welfare, pensions and benefits, the survey was continued by explaining to them about these issues during the interviews. With regard to social insurance, there is a need for accident insurance (40.38 percent), unemployment insurance (50.00 percent), and life insurance (40.38 percent). Also, some of them named health insurance, pension, and benefit insurances as well. With reference to the response of half percent of informal gold miners that accident insurance was essential, the significance of such insurance was clarified.

When asked what social care services they need, 9.01 percent responded that they need retirement services, 4.50 percent need child care services, 15.32 percent need services for extreme poverty, and 0.90 percent need services for disabled people.

Informal gold miners do not have access to social services due to failure to meet the requirements for social services coverage because of lack of registration in the local area and having no civil documents. Also, they were unable to pay social insurance premiums for more than 20 years or who could not meet the conditions for having access to pensions when they reached retirement age, account for a large percent of the uninsured

3.1.3 Planned activity: Conduct environmental survey in Hailaaast bag of Zaamar soum

3.1.3. Actual output: The National consultants hired and environment survey has been conducted.

The results of the Survey are below:

Water quality:

The Zaamar area is in a semi-arid region with an average precipitation of 260 mm/year. The mining operations are on the banks of Tuul River that drain into the Orkhon and Selenge Rivers, and eventually drain into Lake Baikal. The panning by several thousand people in a water body has significant negative impacts on the aquatic ecosystem and water quality, even in such a large river as the Tuul. The placer mining operations can be a potential threat to Lake Baikal. During the dredging and washing process, clay and silt sized particles are suspended, producing turbid, brown waters. Direct release of the turbid water to the Tuul River is not allowed due to the risk of negative impacts on aquatic life and drinking water quality. The river has relatively high background turbidity and water monitoring is taken periodically in these areas but no actions are implemented to reduce turbid water release. The impacts on aquatic and terrestrial life in the area are not known.

Land use and Reclamation:

The area of the Zaamar mining district is known as a fertile grazing area, most likely due to the significant water resources. Both mining and animal husbandry are the main occupation in

the area. Although major mining companies have reclaimed certain areas, many areas are left un-reclaimed. Un-reclaimed areas are inhospitable for animal husbandry and have geologically unstable slopes. In addition, non-grass weeds were found to flourish in un-reclaimed areas further rendering the area inhospitable for animal husbandry. Some of the reclaimed areas have been destroyed by the informal miners by creating large holes that are left without being filled. In general, the “place to mine” by informal miners causes the least environmental impact, as the chosen location is generally, but not always, on land that an official mining company has failed to promptly rehabilitate.

Informal miner’s camps can cause major environment and health impacts if the chosen sites are near to the Tuul River or on the grasslands which are used as pasture for herders and agricultural farming. On other hand, if the informal miner’s camps are created inside old mined areas, then the environmental and health impacts are much reduced. The land has also been degraded due to roads created for transport of soil with gold, to water places for washing.

Air quality and Monitoring:

Dust from mined areas and haulage roads, which may occasionally reduce air quality, is not yet considered to be a major environmental problem in Zaamar.

Biodiversity and Wildlife Impact:

- Globally significant and endemic wild life species are at risk of local extinction from Zaamar Gold mining.
- Release of muddy water negatively effects the habitat of Siberian Sturgeon (*Acipenser baeri baicalensis*) and Taimen (*Hucho taimen*).
- Wild animals are misplaced, and flora and fauna are destroyed.

Traditional Livelihoods and Livestock Impact:

- *Grasslands along the whole valley of Zaamar area have been destroyed or damaged.*
- Livestock access to rivers and streams for drinking or cooling is difficult due to the physical barriers posed by waste mounds, pits, mine camps, river diversion channels etc.;
- Some traditional wintering sites for herders and livestock have been destroyed;
- Some traditional watering places have been destroyed due to drying up and/or the streams becoming very muddy with suspended sediment;
- Livestock in some areas is threatened by toxic mercury poisoning due to historical use of mercury in mining and by mercury being re-mined illegally by ninjas – and in a few instances used illegally by placer mining companies;
- Livestock are often trapped, injured or killed by falling into exploration pits left open, or in mud when drinking from tailings ponds.

3.1.4 Planned activity: Improve of legal status for illegal miners in Zaamar

3.1.4. Actual output: Improved of legal status for illegal miners in Zaamar

We have drafted (with relevant government agencies) the justification, legal requirements and on base of which we have drafted for amendments to the minerals law in order to improve the legal status for illegal miners that was submitted to the Government for

approval.

Justification: In Mongolia, exploration and exploitation licenses are issued to the legal entities that are established and pay their taxes in accordance with relevant legislative acts of Mongolia and the State administrative organization in charge of geology and mining oversees the performances and implementation of their actions. However, there are negative and positive social impacts raised due to unregulated artisanal and small scale mining (ASM) operations in the country. For instance, on one side, artisanal miners in the country illegally enter and extract minerals from licensed areas and do not accept and follow up the legal requirements from local inspection agencies. This phenomenon is quite popular among ASM communities in the country. Due to failure of adherence of occupational health and safety rules there are numerous adverse impacts and risks e.g. accidents causing injuries and deaths, increasing crimes, environmental degradation, ecological imbalance, and downfall in livelihoods of local communities.

On other hand, as artisanal mining is emerged and engaged in, a number of local communities are provided with income generation sources and opportunities to improve their purchasing capacities. As a result, more favorable conditions to engage in micro business activities are created and positive impacts e.g. increasing transportation, consumption of commodities and employment opportunities are found. Additionally, the people have good understanding on labour values and gain experiences and skills.

Thus, the State needs to regulate the relations raised from ASM operations within the legal and regulatory framework in order to ensure adequate livelihood sources, security and social protection, and identify environmental protection approach.

Legal Requirements: The legal and regulatory environment for use of natural resources is already set up in Mongolia. For instance, there are laws, regulations, and standards on prospecting, exploration, mining, supervision over the utilizations, and restoration. However, there is still a gap in law enforcement due to poor interlinks and interrelations. This gap in law enforcement results in illegal extraction of minerals and avoidance from responsibilities and accountabilities of artisanal miners. Thus, it needs to clearly state the rights and obligations of local administrative and self-governing organizations as well as government organizations in order to regulate informal artisanal mining operations within the legal and regulatory framework.

Draft Amendments to the Minerals Law: its general structure, relations to be regulated, and a scope of work

The relations with respect to prospecting, exploration, and mining of minerals in Mongolia are regulated by the Minerals Law. The draft amendments to the Minerals Law include the regulation of relations raised from extraction or exploitation of minerals by artisanal and small scale miners from small scale mines without licenses in the land specifically identified by the State and local administrative organizations. The amendments states that “Small Scale Mining” means mining operations undertaken by unregistered partnerships established as stated in a sub-part of 481 of Civil Code;” and partnership operations shall be regulated by a regulation.

The amendments include a clause on allocation and issuance of Areas from the land proposed for taking for local special needs to ASM partnerships based on the assessments made by the State administration in charge of geology and mining whether the proposed land is entirely or partially overlapped with the land, where prospecting, exploration and utilization of minerals are restricted or prohibited, or the land that is taken for special needs and reserved areas, as well as the licensed areas as stated in Article 16.1.10 of Land Law.

As the amendments are made to the laws, more favourable conditions will be set up to regulate

the relations raised from artisanal and small scale mining operations, to ensure adequate implementation and monitoring, to support local development and budgets, to improve livelihood options and to use natural resources on sustainable ways.

Draft amendments to the Minerals Laws have 5 articles, Article 1 is about the rights of local administrative organizations to allocate and issue Areas for extraction of minerals from small scale mines based on the assessments by the State administrative organizations in charge of geology and mining; 5 clauses regarding the liabilities to be imposed to violators of the regulations to be followed this law; Article 2: to add or put “in case other than small scale mining” prior to “without a valid license” in sub-part 3 of Article 7 of the Minerals Law; Article 3 “3.2. Relations raised from small scale mining operations shall be regulated by a regulation on Small Scale Mining;” Article 4. “11.1.22” shall be re-numbered as “11.1.23” of sub-part 2 of Article 11 of the Minerals Law; and Article 5 states the effective date of this law.

Expected Socio-Economic and Legal Impacts of amendments if that approved by the Government

As the draft amendments are approved, it will provide opportunities to reduce the existing socio-economic impacts of illegal artisanal mining in the country.

Socio-economic impacts:

- informal artisanal miners will be registered with their residential areas and provided with accesses to health and social insurance and health and social welfare services;
- Illegal trade of minerals extracted by artisanal miners will be restricted and illegal actions or crimes will be reduced;
- Artisanal miners will be provided with adequate working conditions as they adhere and follow up occupational health and safety rules and instructions;

Economic impacts:

- artisanal and small scale mining will be legalized and artisanal miners will be provided with secured employment opportunities and income generation sources and consequently their livelihood will be improved;
- Employment opportunities will be increased and the number of illegal operators will be reduced; these factors will make contributions in creation of employment that is stated in the Government Action Plan;
- Artisanal and small scale miners will make contributions in rural development and generation of more incomes to local budget.
- Improve of legal status for illegal miners in Zaamar

3.1.4 Planned activity: Improve health and environment status of Ninjas by providing training on health and education, proper use of toxic chemicals and sustainable mining practices and training on rehabilitation land destroyed by Ninjas

3.1.4. Actual outputs: Organized trainings for Ninja miners and their families common health issues, infectious diseases, and basic first-aid and provide training on mining practices and the use of toxic chemicals such as mercury and cyanide. 1,300 ninjas has trained on gain awareness of good technology and minimizing impacts and proper use of toxic chemical substances. 40 ninjas received training on methods and technology for rehabilitation.

Totally, 50 miners and their families participated in public awareness campaign and

training. banners on use of chemical toxic such as mercury and cyanide and labour safety activities in information center of Goldfield. We developed CD for the life support guidelines that was distributed to Ninja communities and stakeholder of Hailaast Bag and Zaamar mining area.



The Zaamar goldfield is located in Tuul river which is flow to Selege River basin that flow to globally important Baigal lake, Russia. Also, Gold mining companies in Zaamar Gold field are using late technology, many gold is keeping in used mining. So, ninjas is washing the used ore and polluted water.

This illegal mining, called Ninja mining, is quickly growing.

The miners are subject to great dangers working in abandoned or newly dug pits that can collapse or contain other hidden dangers. The miners are living and working in illegal settlements, they are subject to human-rights abuses from the military, police, and private security forces and families do not have access to health or educational facilities. Therefore, we published the basic life support guidelines prepared by American Heart Association and translated Mongolian Heart Association. We believe this guidelines will serve as good reference material for medical doctors/ workers of hospital and illegal miners.

3.1.5 Planned activity: Establish Ninja community NGO and start up its operation

3.1.5 Output of 4: Established Ninja community NGO and started up its operation Results of outputs of 4

- 6 of Ninjas selected for the board. Trained members of board in basic business management and environment conservation.
- The Ninja community NGO legally registered with Ministry of Justice.



Fig. Training the management committee members of NGO in basic business management, and additional training in geology, environment protection legislation



Fig. Computer, books and education materials and relevant laws and procedures, hand out to board members



Fig. Official certificate for the newly established NGO registered by Ministry of Justice

Impacts and achievement

- Survey was conducted on the livelihood of artisanal miners' household and the local environment.
- Training sessions were conducted on artisanal miners regarding the safety measures and proper mining methods to prevent accidents and exposure to toxic chemicals.
- Mining law amendment was drafted and introduced in the parliament. It was adopted in July 2010 and recognized the rights and obligations of artisanal miners.
- Artisanal miners and their communities are organised to promote safe, environmentally sound and sustainable mining.
- Provided training on alternative livelihoods and scholarship for youth.
- Developed a database on local wildlife, environment and sustainable mining.

Future challenges

- Compliance monitoring and enforcement measures need to be strengthened on safety measures and management of toxic chemicals.
- Mechanisms need to be build to reduce detrimental environmental impacts caused by excavated soils.
- Measures need to be enhanced to treat effluent and waste water that emanate form washing soils.
- Multi-stakeholder dialogues need to be facilitated on environmental management and mineral resources and ensure long term equity and sustainability.
- Benefit sharing mechanisms need to be pursued among miners and local non-mining communities.

Attachments

Report prepared by Mongolian Nature and Environment Consortium