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ARTISANAL AND SMALL-SCALE MINERS' SURVEY REPORT - 2016



Ulaanbaatar
2017



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ARTISANAL AND SMALL-SCALE MINERS' SURVEY REPORT - 2016

Ulaanbaatar
2017

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LIST OF ABBREVIATIONS

AFCYD	AUTHORITY FOR FAMILY, CHILD AND YOUTH DEVELOPMENT
ASM	ARTISANAL AND SMALL-SCALE MINING
ESD	ECONOMIC STATISTICS DEPARTMENT
GDT	GENERAL DEPARTMENT OF TAXATION
HSIGO	HEALTH AND SOCIAL INSURANCE GENERAL OFFICE
ITD	INFORMATION TECHNOLOGY DEPARTMENT
LWSO	LABOR AND WELFARE SERVICE OFFICE
MC	MONGOLIA CUSTOMS
MET	MINISTRY OF ENVIRONMENT AND TOURISM
MLSW	MINISTRY OF LABOR AND SOCIAL WELFARE
MMHI	MINISTRY OF MINING AND HEAVY INDUSTRY
MOE	MINISTRY OF ENERGY
MOF	MINISTRY OF FINANCE
MRPAM	MINERAL RESOURCES AND PETROLEUM AUTHORITY OF MONGOLIA
NSO	NATIONAL STATISTICAL OFFICE
SAM	SUSTAINABLE ARTISANAL MINING
SDC	SWISS AGENCY FOR DEVELOPMENT AND COOPERATION
SPSS	STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES

FOREWORD



The National Statistical Office of Mongolia, like other statistical offices in the world, has been taking an integrated approach and working step by step to include results of the informal sector activities into the national Gross Domestic Product (GDP) of the country.

According to the "National methodology for the estimation of the GDP and GNI" approved by Order 134 of the NSO Chairman on November 26, 2013, section on informal sector's calculation, a baseline survey of the informal sector is conducted every five years. In the mining sector, informal employment in ASM or artisanal and small-scale miners are part of the hidden economy. Within the framework of this methodology, for the second time we successfully managed a survey of artisanal and small-scale miners in the mining sector with the financial and technical support from Swiss Agency for Development and Cooperation.

The purpose of this Artisanal and Small-Scale Miners' (ASMRs) survey was to define the scope of ASM activities, to register the artisanal and small-scale miners, to identify their economic contribution and to reflect it into

national GDP accounts; to determine main challenges that ASMRs face and to inform policy makers; and to make a comparative analysis with previous ASM survey and to develop additional indicators as needed.

The main feature of this survey is that the collected baseline data presents the current state and demonstrate a real situation of artisanal and small-scale miners and provides insights on development trend of mining sector that plays a critical role in the economy of the country.

A total of 9.6 thousand persons participated in this survey and they represent 0.8 percent of economically active population and 7.5 percent of total unemployed persons by the end of 2016. The 73.5 percent of the total artisanal and small-scale miners, 65.4 percent of total income and 59.5 percent of total value-added cost was produced from the gold mining activities. It shows that the gold miners are the majority of miners in the ASM.

To promote the formalization of the ASM sector and to make ASM sector more responsible, the Government of Mongolia has amended the ASM regulation which was approved by the Government Resolution No 151 in 2017. The updated ASM regulation provides an enabling legal environment for artisanal and small-scale miners.

I believe that findings and results of artisanal and small-scale miners survey-2016 will inform ASM policy development further and decisions will be made based on survey findings and evidences.

The survey report consists of 10 main parts and appendixes which show the general results of the survey. Part one of the report contains management arrangements for conducting the survey, such as survey management and organizational arrangements, advocacy and data processing, part two contains general information of artisanal and small-

scale miners, part three contains information on employment and living conditions of the miners, part four contains information on children's rights, part five includes the needs of information, part six includes the occupational safety and health in ASM, part seven includes the contributions to local social development, part eight includes the assistance, support, problem and challenges, part nine includes the tools and equipment and part ten includes the actual mining activities of artisanal and small-scale miners. I would like to express

my sincere gratitude to the working team of Economic Statistics Department of NSO, who successfully managed and organized this survey: staffs of statistical offices in aimag, capital city and soums, bagh Governors, members of Federation of Mongolian Artisanal and Small-scale Miners, to members of the Steering committee for overall guidance and the experts of "Sustainable Artisanal Mining" project and the Swiss Agency for Development and Cooperation for the financial support and collaboration in conducting the survey.

CHAIR NATIONAL
STATISTICAL OFFICE



A.ARIUNZAYA



Sustainable Artisanal Mining (SAM) Project Phase 4 is being successfully implemented since 2015 jointly by the Ministry of Mining and Heavy Industry of Mongolia and Swiss Agency for Development and Cooperation of the Ministry of Foreign Affairs of Swiss Confederation. The goal of this phase is an economically sustainable, environmentally responsible and human rights-based artisanal small-scale mining sector in Mongolia benefiting from, and contributing to, global best practice regarding artisanal and small-scale mining.

The previous nationwide Artisanal and Small-scale Miners' Survey of 2012 conducted by the National Statistical Office of Mongolia in cooperation with SAM Project, identified the geographical locations of the ASM sites, demo-

graphic information and created a consolidated database of artisanal and small-scale miners regarding their economic contributions, challenges and problems faced. The database provided a comprehensive information for policy-makers and researchers.

In 2017, Government of Mongolia revised and updated the 2010 regulation on "Extraction of Minerals by Artisanal and Small-scale Mining". The 2012 Survey was instrumental in providing essential information for the policymakers to change and to improve this regulation.

We are confident that the new regulation will have positive impact on organization and formalization of artisanal and small-scale mining and encouraging miners operate and pay taxes in accordance with related laws and regulations, and thus allowing to accurately estimate the contributions of the artisanal and small-scale miners to the country's economy.

Since 2012, the ASM formalization process has intensified and the number of artisanal miners, who are officially registered and formalized their operations, increased and there have been number of positive changes at policy and implementation levels. Therefore, SAM Project supported the National Statistical Office to conduct this national survey on artisanal and small-scale miners in 2016 to assess the changes and progress in the ASM sector over the last five years, to identify the challenges and future trends, to update the baseline data of the previous survey and to make a comparative analysis.

We hope that this report will be reflected in annual report of the NSO and the ASM survey will be updated continually.

**PROJECT COORDINATOR SUSTAINABLE
ARTISANAL MINING PROJECT**



B. ALTANBAGANA

1

ARTISANAL AND SMALL-SCALE MINERS' SURVEY MANAGEMENT

"Artisanal and small-scale mining" means extraction of minerals in economically inefficient deposits for industrial mining method and derived from extraction and technological tailings.



1.1 SURVEY MANAGEMENT AND ORGANIZATIONAL ARRANGEMENTS

The working group was established with 17 officials from 10 organizations such as National Statistical Office, Sustainable Artisanal Mining project of Swiss Agency for Development and Co-operation, Ministry of Mining, Mineral Resources and Petroleum Authority, National Authority for Children, Ministry of Labor, General Agency of Social Insurance, Mongolia Customs, General Department of Taxation, Ministry of Environment and Tourism, Ministry of Labor and Social Welfare and General Agency for Social Welfare and Services (by former names) with the task to conduct the survey on artisanal and small-scale miners with a broad scope to monitor and evaluate the survey process, to provide with general management and methodological support and to report the survey results.

In addition, working groups in 17 aimags and the capital city were established with the task to carry out the survey in local areas, to inform the members of the working group with the survey progress and issues and to take necessary arrangements. Establishing the working groups in every level allowed to act immediately without delays and to solve the difficulties and other issues that came out.

The information confidentiality was provided under Paragraph 3, article 22 of "Statistical Law" of Mongolia; artisanal and small-scale miners were informed that the collected data would be used for policy making and evaluating the results. The survey followed the confidentiality article during data collection and processing at all the levels.

1.2 TRAINING AND ADVOCACY

conduct the survey successfully within the preparatory work two trainings were organized. First training was organized for the team leaders, who conduct the survey at the local level, and the second training was organized for the enumerators, who conduct the survey in the field:

- Training of trainers: training for team leaders of statistical divisions of the aimags and the capital city was organized on 21-25 September 2016 in Ulaanbaatar city
- Training for local enumerators was organized on 05-08 October 2016 in local areas.

The participants of the training were provided with the following information:

1. General organizational arrangement of survey;
2. Obligations of enumerators and supervisors, principles to follow and prohibited activities;
3. Classification and codes necessary to fill the questionnaire;
4. Instructions to fill the questionnaire;
5. Methodology to check the correctness
6. Maps and marking instructions;

3 types of the survey advocacy were used:

- TV and Radio broadcasting: the survey progress and its significance.
- Newspapers and internet sites: survey information, progress and its importance.
- The artisanal and small-scale miners' survey posters have been placed in the following areas:
 - i) Soum and bag's centers, shops, markets, pharmacies and car parking spaces
 - ii) ASM sites

1.3 SURVEY SCOPE AND DURATION

The survey involved PERSONS who directly or indirectly participate in the artisanal mining activities, such as registered and unregistered partnerships, cooperatives, business entities and artisanal and small-scale miners.

The scope and locations of artisanal and small-scale miners were identified based on the following information:

1. **Initial survey from statistical departments from aimags and capital city:** According to the tentative survey and locational clarifications conducted in December 2015 and August 2016, 4.0-10.0 thousand persons were identified as working in the artisanal and small-scale mining activity in aimags and capital city.
2. **Information provided by “Sustainable Artisanal Mining Project”, “Mongolian Artisanal and Small-scale Mining National Federation”:** all membership information of the ASM NGOs, cooperatives and partnerships.
3. **Information from the labor departments of aimags and districts of the Ministry of Labor and Social Welfare:** according to the information, 8.8 thousand persons work in the artisanal mining as of November 2015 and 3.8 thousand persons as of May 2016.

The first phase of the survey was conducted in 57 soums of 18 aimags and Nalaikh district from 10 October to 10 December 2016 and the second phase of the survey was conducted in 33 soums of 11 aimags in April 2017.

The trained and prepared enumerators, who participated in the local trainings, visited the ASM sites located in the territory of respective soums and surveyed the artisanal and small-scale miners according to the questionnaires. The enumerators visited the mining sites several times to collect the data to ensure to ASMs who were not present, are involved. The enumerators used the primary registration of artisanal and small-scale miners to involve them in the survey. The working teams of aimags and the capital city were instructed to cover all the artisanal and small-scale miners and miners list was verified against the primary registration.



1.4 CONCEPT, DEFINITION AND CLASSIFICATION

The following definitions and classifications were used in the survey on artisanal and small-scale miners:

Concepts	Definitions
EMPLOYMENT AND DEFINITIONS	
Artisanal and small-scale mining	According to the article 4.1.23 of the "Minerals Law" of Mongolia, "artisanal and small-scale mining" means mineral extraction activity of individuals organized in the form of unregistered partnerships as stated in 481.1, partnerships stated in Article 35 and cooperatives stated in 36.4 of the "Civil Law" of Mongolia working on economically inefficient deposits for industrial mining method and fields derived from industrial and technological tailings.
ASM partnership/cooperative	Group of persons who are organized in the form of unregistered partnerships as stated in 481.1, partnerships stated of Article 35 and cooperatives stated in 36.4 of the "Civil Law" of Mongolia and running their activities under the regulation of "Extraction of minerals by artisanal and small-scale mining".
Partnership/cooperative Leader/employer	Individual, who has a competency to provide group of PERSONS with the general management under the partnership/cooperative principles, to pay wages and earnings, to allocate incomes, to make a contract on behalf of the members and bear responsibilities.
Member of partnership/cooperative	Citizen, who meets the requirements, stated in 2.2.1 and 2.2.2 of regulation of "Extraction of minerals by artisanal and small-scale mining", and made a contract on collaboration with the purpose to extract minerals.
Informal artisanal miner	Citizen, who is not a member of any partnership, but exploits the minerals by artisanal and small-scale mining.
Utility workers in artisanal mining	Persons, who do not participate in actual artisanal and small-scale mining activity, but run a private business such as purchasing minerals, trading food and goods, running canteen and providing transportation services.
Unpaid family workers	Family members, who participate in artisanal and small-scale mining activity without any wages and earnings.
EDUCATION CLASSIFICATION AND DEFINITIONS	
Uneducated	Persons, who did not complete 4th grade of secondary school (up to 1975 and between 1997-2004), 3rd grade (between 1975-1996), 5th grade (since 2005) respectively. In other words, children, who are currently studying at 1-5 grade of secondary schools as well as PERSONS, who did not complete 3rd and 4th grade are considered uneducated.

Primary	Persons, who completed 4th grade of secondary school (up to 1975 and between 1997-2004), 3rd grade (between 1975-1996), 5th grade (since 2004) have primary education.
Concepts	Definitions
Secondary	Persons who completed 7th grade (up to 1975 by old system), 8th grade (between 1975-2004), 9th grade (since 2005) and have certificates of graduation have secondary education
High	Persons, who completed 10th grade (till end of 2005), 11th grade (since 2006) by regular and/or evening classes and have certificates of graduation, have high education.
Technical and vocational	Persons, who completed Vocational training and production centers (former technical and vocational school- TVS) and who have professional certificates, have technical and vocational education.
Special vocational secondary	Persons, who completed foreign and/or domestic vocational schools (former technikum) and similar schools and have certificates and/or diplomas, have special vocational secondary education.
Higher	Persons, who completed foreign and domestic universities, institutes and/or colleges by regular, evening and/or correspondence courses, and who have diploma, bachelor, master and/or doctor degree and similar documents.
OCCUPATIONAL CLASSIFICATION AND DEFINITIONS	
Manager	Manager's main duties in Government, business entities and other organizations are to plan, manage, coordinate and evaluate internal activities and to develop policies and regulations and to monitor the implementation.
Specialist	Main duties are to use scientific and cultural theories, concepts, teach them systematically or to execute the combination of these activities at high professional level.
Office and service clerk	Executes the works to write protocols, type them, use computer and other stationary equipment, enter data, to work as a secretary, write and calculate digital information, to protocol production and transportation records, executes the works, related to library, cash transfer, post and communication, to make travel arrangements, to provide customers with information, and to schedule appointments.
Trade and service employee	Trade and service employee provides private and security services in tourism and housekeeping sectors, catering services, nursing PERSONS, firefighting, in retail and wholesale, selling goods in markets and shops.
Specialist for agriculture, forestry, fishery	Qualified specialist for agriculture, forestry and fishery executes the works to grow seeds, wheat, trees and animal fodder plants, collect wild berries, plants and fruit, protect, hunt, produce, use various products of animal-origin, fishing or fishing-crib for household food purposes, breed other water species.

Concepts	Definitions
Employee for production, construction, handicraft and related works and services	Employee for production, construction, handicraft and related works and services executes the works to erect buildings, take care, cast and erecting metal constructions, erecting automatic constructions, calibrate automatic tools and equipment, manufacture products to adjust, fix and print machines, mechanisms and equipment and manufacture food products, textiles, wooden and metal products, other goods, including handicrafts.
Operator of machines, mechanisms and equipment, erector	Executes the works to operate and control the mining equipment, metal processing, mineral, and ceramic, glass, wood, paper and chemical production and to assemble, operate and control the equipment for water treatment and electric power production.
Simple works, occupation	Executes the works to sell goods in public places, streets and squares and/or to households, to provide various services in the street, cleaning, laundry, ironing, home, hotel, office and other room cleaning, and window production, cleaning of buildings and facilities.
Military works, occupation	Military works and occupation includes all the works, executed by armed forces. Armed forces consist of servicemen and contracted employees. The servicemen include military headquarters, general and air attack defense military detachments, types, professional military and front technical units, divisions, military schools, training and science and research, economy and service organizations, soldiers and employees, working by labor contract.
DWELLING, ELECTRICITY AND WATER SOURCE CLASSIFICATION AND DEFINITIONS	
Ger	All kinds of Mongolian traditional ger and hut.
House	House includes a dwelling with one and/or more rooms, roof, outside wall and with a field detached from foundation to roof wall.
Tent	It includes all kinds of tents.
Hutting	It includes temporary dwelling, which was not built for living purpose or modified for persons to live in.
Hole dwelling	It includes temporary hole dwelling, which was not built for living purpose or modified for PERSONS to live in.
Other dwelling	All kinds of dwelling other than stated above.
Centralized system	If a dwelling uses electricity from state power and hydro power plant, then, the dwelling has centralized system. Sub-station, connected to the centralized power station is considered centralized.
Diesel station	It includes the dwellings, which are connected to local independent diesel stations and power network.
Renewable energy equipment	It includes the equipment, which produces electric power by accumulating solar and wind energy.

Small-scale electric generator	It includes small-scale generators or aero generators, which work on combustible and other materials with the purpose to provide the consumption of one or more households.
Concepts	Definitions
Centralized water distributing system	It includes the water system, which distributes water to houses, independent apartments and other public accommodations from state and local water supply centralized system.
Water distribution kiosk, connected to centralized system	It includes water distribution kiosks, which are connected to the centralized water supply system in cities, settlements and ger districts.
Protected well	It includes the wells, which are built according to drawings, pump water by generator or other equipment, have protective facilities and sanitary borders, protected from animals and livestock. It also includes drilled Abyssinian wells.
Protected spring	Protected springs are under special protection, decorated, fenced and protected from animals and livestock to enter in.
Distilled and bottled water	Water prepared by business entities under permission for drinking purpose. The water meets the standards and distilled.
Water distributing kiosk, not connected to centralized system	It includes distributing kiosks, to which related organizations and business entities carry water in special transportation vehicle.
Portable water	It includes the water, which is distributed directly to households by related organizations, business entities and individuals by car and/or carts.
Rivers, streams, lakes, unprotected wells, springs	It includes unprotected mining wells, springs and streams dug by citizens. It also includes river, lake, rain, snow and ditch-water.

1.5 THE SURVEY QUESTIONNAIRE AND ITS CONTENT

The questionnaire of this survey was developed based on the previous survey questionnaire considering the work features of artisanal and small-scale miners and users' needs and requirements. It includes 10 parts and 106 main indicators which show the current situation of artisanal and small-scale miners and instruction to fill the forms for the local enumerators.

When the first version of survey questionnaire was developed, a survey was conducted among the artisanal and small-scale miners in Nalaikh district of the capital city, artisanal and small-scale miners in hard rock mine in Tunkhel soum of Selenge aimag and artisanal and small-scale miners in placer mine in Zaamar soum of Tuv aimag, and the recommendations were incorporated.

Also, the feedback and recommendations were received from 18 statistical departments of aimags and capital city, "Sustainable Artisanal Mining Project" project, Ministry of Energy, Ministry of Environment and Tourism and Ministry of Labour and Social Welfare and have been reflected to the questionnaire form.

The questionnaire form was finalized, and it was discussed in the meeting of Methodology Standing Committee and Chairman Board of NSO. The questionnaire form and instructions were approved by the order No. A/20, dated September 19, 2016 of the Chairman of NSO.

The survey questionnaire has the following structure:

Part 1. Addresses part: 8 questions to collect the data on locations of the artisanal small-scale miners at the aimags, capital city, soum, district, bag, khoroo levels and by deposit;

Part 2. General information: 9 questions related to general information on age, sex, education, profession and family of the artisanal and small-scale miners;

Part 3. Employment: 17 questions related to actual artisanal mining activity, housing conditions, electricity and water sources and information of the employment;

Part 4. Children's rights: 10 questions on child labour, the type of participation and injuries in artisanal mining;

Part 5. Needs of information and source of information: 4 questions on source of information, internet and use of mobile phones by artisanal and small-scale miners;

Part 6. Information on occupational safety and health in artisanal mining: 8 questions about the accidents and the diseases incidence in artisanal and small-scale mining and availability of medical services;

Part 7. Contributions to local government: 8 questions about insurance of artisanal and small-scale miners, its type and coverage, changes in their life, and the contributions to the local government;

Part 8. Assistance, support and problems & challenges: 16 questions about the issues and difficulties that artisanal and small-scale miners face and how they were solved;

Part 9. Tools and equipment: 5 questions about tools, equipment and protective clothes used in artisanal mining activities;

Part 10. ASM operational information: 21 questions related the economic indicators such as income, expenses, taxes paid, deductions and fees (see the questionnaire form from Appendix 1).

1.6 DATA PROCESSING

1.6.1 Data entry and gathering step

ESD employees of NSO used software developed by IT staff for data policy tasks: data entry, revision and correction.

Working group of survey in aimags and the capital city conducted the survey and submitted the collected survey questionnaire forms to the NSO. NSO contracted PERSONS to enter the survey data and NSO's working team was responsible for data review and corrections.

CSPRO software was used for data entry and the data analysis was done using statistical analysis SPSS software. The files were created, containing sections of data storage of survey BUS-I form, all kinds of codes and contents used in program and the database was established on Microsoft Access program.

1.6.2 Data validation and editing step

Revisions on correlation of the indicators, included in the survey questionnaire, instructions were done, and the related corrections were made. For example, dependence and logical controls based on statistical analysis were made on completed forms of correlation of address, age, sex and registration number, correlation on education, job and occupation, employment, income and expense and related corrections were made.

1.6.3 Data quality monitoring

NSO focused on data quality at each step of data collection and processing and the officials from statistical divisions worked as a team on deposit sites. Also, members of NSO team worked in Selenge, Tuv and Umnugobi aimags in order to improve the survey coverage, to support the local works and to monitor the data accuracy.

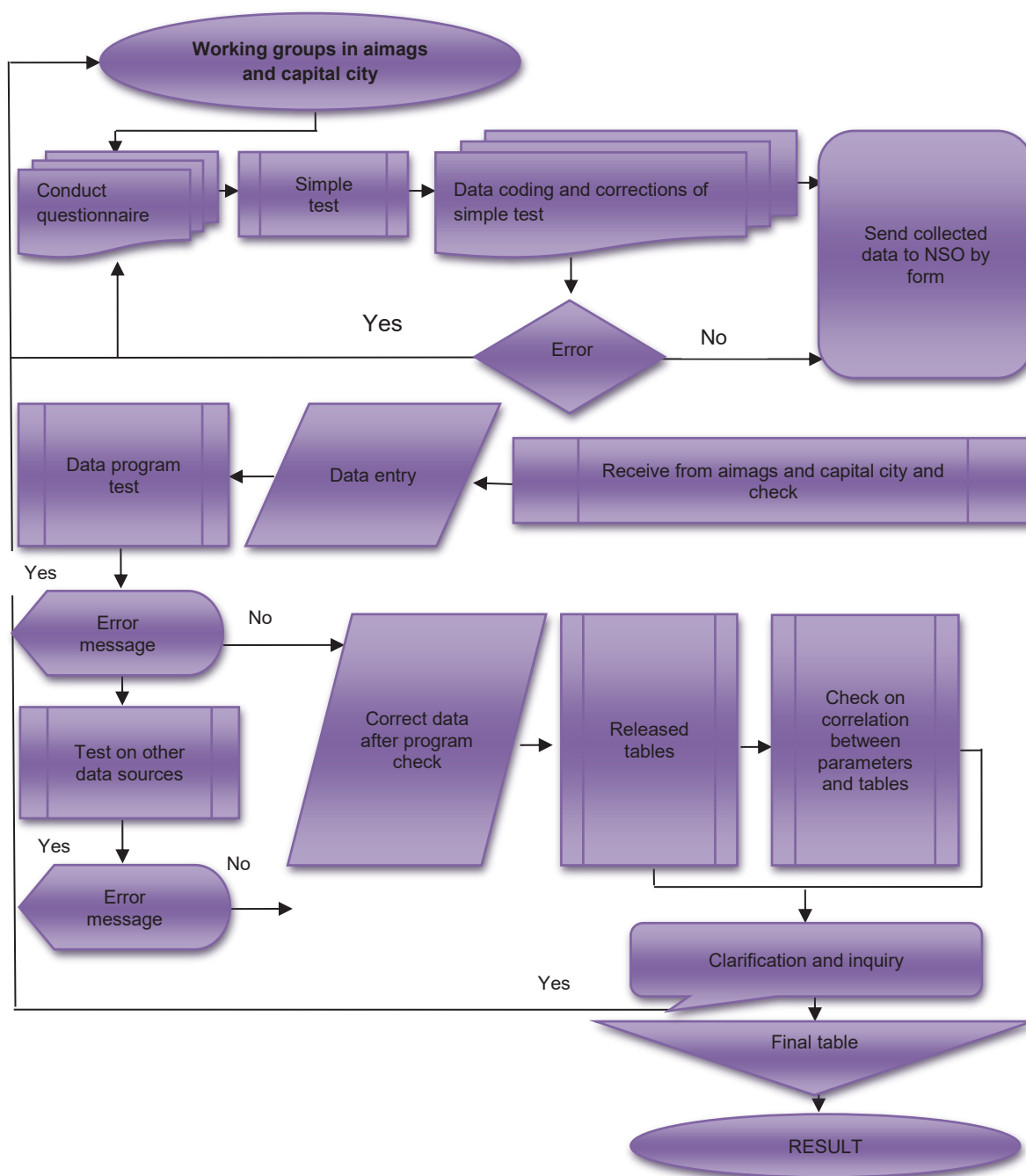
1.6.4 Preparation of result tables

More than 120 result tables were developed. Before finalizing the output tables, the results were compared with the related information on artisanal and small-scale miners of "Mineral Resource and Petroleum Authority"; information on gold sold to the treasure fund of Mongolia; information on gold, sampled by laboratory of State sampling inspection department of Standardization and Measurement Authority; information on taxes, paid by small-scale miners to National Tax Office; results of Social and Economic Survey of NSO; coal consumption of the citizens of Ulaanbaatar city; official statistics on workforce and employment data.

General report was prepared based on the survey output tables, introduced to the working group's meeting and the related decision was released after the discussion. Economic Statistics Department of NSO performed the works to make an analysis of survey information and to prepare the main reports.

The works to make an analysis on survey information and to prepare the main reports were organized by following steps.

Figure 1. Scheme of data collection and processing



2

GENERAL INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS

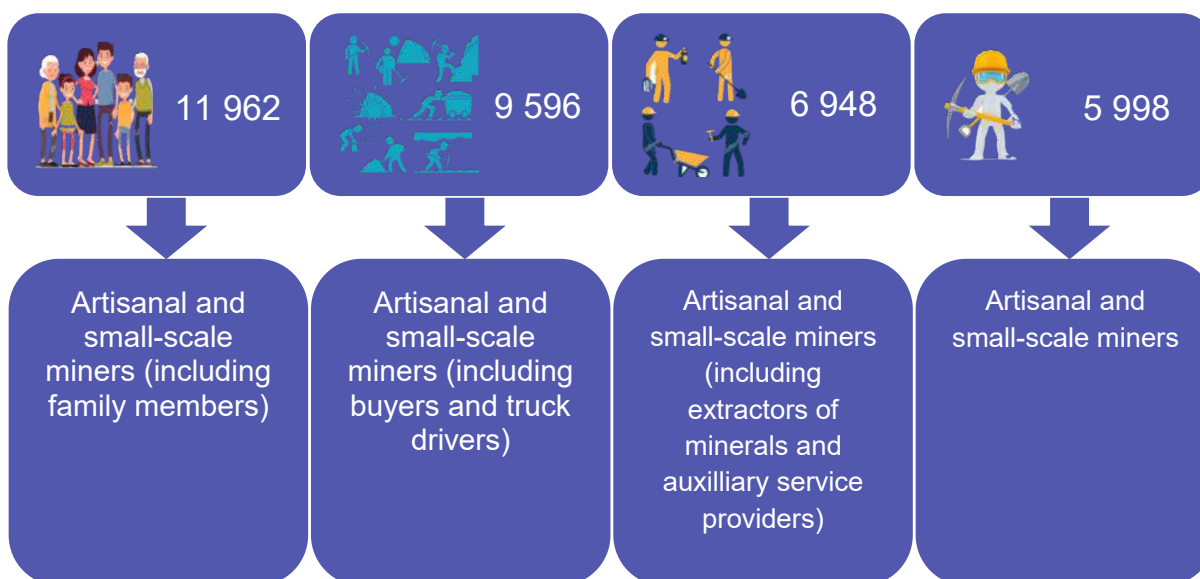
The Artisanal and Small-scale Miners Survey-2016 involved total of 9.6 thousand persons working in artisanal and small-scale mining.

PART TWO. GENERAL INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS

Aimag and city populations specially artisanal small-scale miners' density and development largely depend on the varied size of Mongolia's aimag and the capital city and different locations in different geographic regions, uneven distribution of natural resources throughout countryside and extreme climatic conditions.

2.1. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS

According to the ASM Survey-2016, out of a total of 11962 persons who are directly and indirectly involved in ASM activities, 9596 are involved in ASM activity and covered under this Survey and 2366 are their family members



4.5 thousand persons or 37.6 percent of total persons involved in the ASM and their family members are located in Western region, 4.2 thousand or 35.2 percent in Central region, 1.7 thousand or 14.9 percent in Khangai region, 1.3 thousand or 10.6 percent in Ulaanbaatar city and 0.2 thousand or 1.7 percent in Eastern region.

Table 1. Number of persons involved in ASM, by region

Region	TOTAL	Survey persons	Family members
TOTAL	11 962	9 596	2 366
Western region	4 503	3 597	906
Khangai region	1 780	1 300	480
Central region	4 209	3 312	897
Eastern region	203	171	32
Ulaanbaatar	1 267	1 216	51

Out of total of 9.6 thousand surveyed persons involved in ASM, 3.6 thousand or 37.5 percent is in Western region, 1.3 thousand or 13.5 percent in Khangai region, 3.3 thousand or 34.5 percent in Central region, 0.2 thousand or 1.8 percent in Eastern region and 1.2 thousand or 12.7 percent in Ulaanbaatar city.

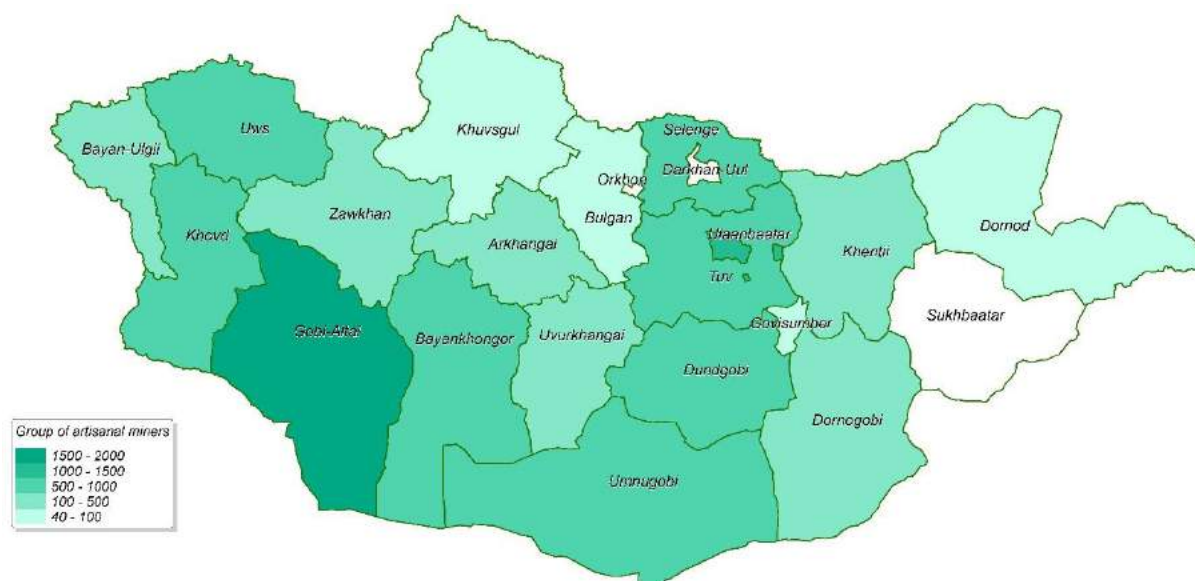
2.3 thousand or 24.0 percent of total persons involved in the survey, are female and this number decreased by 1.6 thousand or 41.2 percent compared with the previous survey findings.

Persons involved in the ASM are in 18 aimags, except Sukhbaatar, Darkhan-Uul and Orkhon aimags and in one district of the capital city. Out of total, 1674 or 17.4 percent are working in Gobi-Altai aimag, 1216 or 12.7 percent in Ulaanbaatar city, 998 or 10.4 percent in Umnugobi aimag, 898 or 9.4 percent in Selenge aimag, 821 or 8.6 percent in Khovd aimag, 745 or 7.8 percent in Bayankhongor aimag and 657 or 6.8 percent in Tuv aimag which represent 73.0 percent of the persons who participated in the survey and the rest 27.0 percent are in other aimags.

Table 2. Number of persons involved in ASM, by region and sex

Region	2012	Female	2016	Female
TOTAL	13 375	3 915	9 596	2 301
Western region	3 380	1 010	3 597	857
Khangai region	3 967	1 355	1 300	380
Central region	4 403	1 295	3 312	879
Western region	365	87	171	39
Ulaanbaatar	1 260	168	1 216	146

Figure 2. Number of persons involved in ASM, by number groups of artisanal and small-scale miners, aimags and capital city



The figure demonstrates the number of persons involved in ASM by geographical locations: 332 sites of 113 mineral deposits in 97 soums of 18 aimags and one district of the capital city.

2.2 NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, BY ADMINISTRATION UNITS



ARTISANAL AND SMALL-SCALE MINERS' SURVEY-2016

Table 3. Number of involved in the ASM, by aimag, the capital city and administration

Administration (Main administration)

Aimag and capital city (Operation field)	AR	BU	BKH	BU	GO	DO	DD	DU	ZA	UV	UM	SU	SE	TU	UV	KHO	KHU	KHE	DA	OR	GS	UB
AR	126		2							1												
BU		137																				
BKH			736			2					2			1								4
BU				39						1												3
GO		1	24		18				4	1				1	1	5			2	3		29
DO						83	1	1		1						1	1				1	3
DD							50															
DU								576			1							1				4
ZA									396							1						4
UV	1									281												2
UM			2			1		2		2	985							2				4
SE									2		1		51	2			2		4	1		6
TU	16		1				2		9		1			370			5	1	2	11		22
UV	3								2						530	1			1	1		1
KHO																540						
KHU																	99					
KHE						5												104	1		1	10
GS																					60	
UB	12		4			2	4	2	3	8		3		25	4	9	17	6	12	6		1077

According to the table, the persons involved in ASM in Bayan-Ulgii, Dornod, Khovd, Khuvsgul and Gobisumber aimags are all local citizens, whereas in Selenge aimag, 73.9 percent of total artisanal and small-scale miners are local citizens, 8.7 percent are citizens of Ulaanbaatar city and rest 17.4 percent are citizens of other aimags. 20.2 percent of total persons operating in Gobi-Altai aimag are local citizens, 32.6 percent are citizens of Ulaanbaatar city and remaining 47.2 percent are citizens of other aimags. 74.0-99.0 percent of the artisanal and small-scale miners working in other aimags are all local citizens, except for Sukhbaatar, Darkhan-Uul and Orkhon aimags.

2.3 AGE AND SEX OF ARTISANAL AND SMALL-SCALE MINERS

By age group, 2.0 percent of the persons involved in ASM are between 10-19 years old, 22.5 percent are 20-29, 32.1 percent are 30-39, 27.7 percent are 40-49, and the rest 15.7 percent are 50 and up years old. Thus, it can be concluded that the majority of the persons involved in ASM are economically active population of 20-54 years old. This also indicates a shortage of available workplaces in local regions. The table below shows detailed indicators on sex and age groups of the persons involved in ASM.

Table 4. Number of persons involved in ASM, by age group and sex

Age group	2012	2016	
		Male	Female
TOTAL	13 375	3 915	9 596
10-14	236	111	6
15-17	329	102	30
18-19	363	108	152
20-24	1 765	419	759
25-29	2 011	475	1 396
30-34	2 090	560	1 519
35-39	2 013	602	1 565
40-44	1 787	616	1 461
45-49	1 439	491	1 199
50-54	844	291	896
55-59	355	100	429
60-64	94	22	134
65-69	37	14	41
70 +	12	4	9

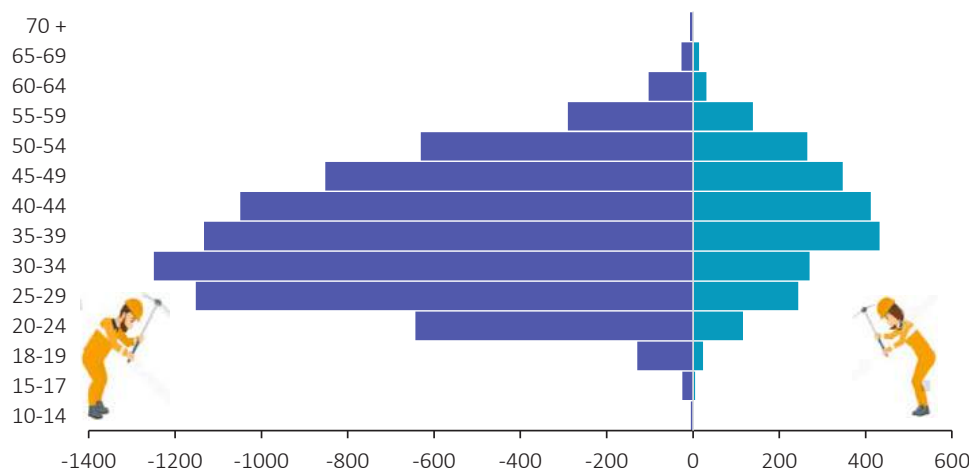
According to the table, of the total persons involved in ASM, 76.0 percent are male, and 24.0 percent are female, the sex ratio is 32 females versus 100 males. And by age group, 18 females versus 100 males for age group of 18-24, while 44 women versus 100 men for age group of 50-59.

Looking at the age group of the females, 1.3 percent of them are between 10-19 years old, 15.6 percent are 20-29, 30.5 percent are 30-39, 33.0 percent are 40-49, and the rest 19.6 percent are 50 and more years old.

Table 5. Number of persons involved in the ASM, by region and age group

Region	TOTAL	10-14	15-17	18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 +
TOTAL	9 596	6	30	152	759	1 396	1 519	1 565	1 461	1 199	896	429	134	41	9
Western region	3 597	2	14	59	269	469	532	548	610	506	354	162	60	10	2
Khangai region	1 300	2	5	31	92	203	207	226	180	142	127	60	21	4	-
Central region	3 312	2	7	39	260	485	511	563	504	395	307	171	43	20	5
Eastern region	171	-	-	2	11	21	25	27	30	28	14	6	4	2	1
Ulaanbaatar	1 216	-	4	21	127	218	244	201	137	128	94	30	6	5	1

At the national level, 9 persons with age above 70 are involved in ASM, of which 5 are in Central region and 4 are in Western and Eastern regions and Ulaanbaatar city.

Figure 3. Age and sex pyramid of persons involved in ASM


Looking at age group with same interval of total persons involved ASM by sex, the result shows the number of males in all age levels is more than females which indicates that participation of men in artisanal and small-scale mining is higher than women's participation.

2.4 EDUCATIONAL LEVEL OF ARTISANAL AND SMALL-SCALE MINERS

The employment, income level and socio-economic status of the population very much depend on the level of education. In other words, an important factor to improve the living standard of the population is the educational level.

Table 6. Educational level of persons involved in ASM, by region

Region	TOTAL	Uneducation	Educated	Primary school	Secondary school	High school	Technical and vocational	Specialized secondary	Higher
TOTAL	9 596	215	9 381	1 020	3 523	3 441	485	289	623
Western region	3 597	81	3 516	446	1 309	1 245	143	120	253
Khangai region	1 300	39	1 261	246	526	373	52	18	46
Central region	3 312	63	3 249	253	1 320	1 150	164	113	249
Eastern region	171	1	170	14	37	90	12	6	11
Ulaanbaatar	1216	31	1 185	61	331	583	114	32	64

0.2 thousand or 2.2 percent of the total surveyed persons involved in ASM, are uneducated and 9.4 thousand or 97.8 percent are educated. Out of educated persons, 1.0 thousand or 10.9 percent have a primary education, 3.5 thousand or 37.6 percent have a secondary education, 3.4 thousand or 36.7 percent have a high education, 0.5 thousand or 5.2 percent have a technical and vocational education, 0.3 thousand or 3.1 percent have a special vocational education and 0.6 thousand or 6.6 percent have a higher education.

Table 7. Educational level of persons involved in ASM, by sex, in percent

Educational level	TOTAL		Male		Female	
	2012	2016	2012	2016	2012	2016
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Uneducation	4.1	2.2	4.2	2.4	4.0	1.6
Educated	95.9	97.8	95.8	97.6	96.0	98.4
Primary school	14.0	10.6	14.9	11.0	11.7	9.4
Secondary school	27.9	36.7	28.6	37.6	26.4	33.9
High school	40.4	35.9	39.3	35.4	42.8	37.4
Technical and vocational	6.8	5.1	7.3	5.2	5.3	4.7
Specialized secondary	2.6	3.0	2.0	2.5	4.3	4.7
Higher education	4.2	6.5	3.7	5.9	5.5	8.3

Compared with the results of previous survey, a share of educated persons involved in ASM increased by 1.9 points. Out of this, persons with primary education increased by 8.8 points, persons with specialized secondary education by 0.4 points and persons with higher education by 2.3 points, respectively.

2.5 OCCUPATION OF ARTISANAL AND SMALL-SCALE MINERS

According to the survey results, 5.4 thousand or 56.0 percent of the surveyed 9.6 thousands persons involved in ASM, have no professions, 1.4 thousand or 14.1 percent are machinery and equipment operators and assemblers, 0.9 thousand or 8.9 percent are workers in agriculture, forestry and fishing, 0.8 thousand or 8.0 percent are workers in production, construction, handicraft and related services, 0.7 thousand or 7.2 percent are specialists and 5.7 percent are trade and service workers, technicians, assistants, assistant specialists, clerks, casual workers and others.

It was observed that depending on work features and specifics, there is a difference in a job classification between male and female persons involved in ASM.

Table 8. Occupations of persons involved in ASM, by sex

Occupational classification	Total		Male		Female	
	2012	2016	2012	2016	2012	2016
TOTAL	13 375	9 596	9 460	7 295	3 915	2 301
Military service and occupation	3	7	3	7	-	-
Manager	10	35	7	24	3	11
Specialist	832	694	487	395	345	299
Technician, assistant, assistant specialist	86	166	55	129	31	37
Clerk and service worker	45	36	17	16	28	20
Trade and service worker	395	229	46	28	349	201
Qualified specialist in agriculture, forestry and fishing	883	853	579	622	304	231
Workers in production, construction, handicraft and related works and services	907	767	654	646	253	121
Operator and assembler of machineries and equipment	1 961	1 357	1 877	1 305	84	52
Casual work, occupation	56	76	51	53	5	23
No profession	8 197	5 376	5 684	4 070	2 513	1 306

Looking at the profession of surveyed persons involved in ASM by region, the results are as following: 38.1 percent in Western region, 32.7 percent in Central region, 15.8 percent in Khangai region, 10.9 percent in Ulaanbaatar, and 2.4 percent in Eastern region are those who have no profession, and of those who have professions of operators and assemblers of machineries and equipment, 44.1 percent are in Central region, 26.2 percent in Western region, 22.3 percent in Ulaanbaatar, 6.6 percent in Khangai region, and 0.8 percent in Eastern region.

Compared with the previous survey results, a share of the persons with professions of operators and assemblers of machineries and equipment decreased by 0.5 points, a share of the trade and service workers by 0.6 points and a share of the persons with no professions by 5.3 points and a share of the persons with other occupations increased by 0.1-2.3 points.

Table 9. Occupations of persons involved in ASM, by region

Region	TOTAL	Military service, occupation	Manager	Specialist	Technician and assistant/deputy specialist	Clerk and service worker	Trade and service worker	Qualified specialist in agriculture, forestry and fishing	Workers in production, construction, handicraft and related works and services	Operator of machines, mechanisms, equipment, assembler	Simple work, occupation	No profession
TOTAL	9 596	7	35	694	166	36	229	853	767	1 357	76	5 376
Western region	3 597	4	10	271	50	10	70	533	216	356	27	2 050
Khangai region	1 300	-	6	68	8	3	25	171	73	89	8	849
Central region	3 312	3	13	285	74	22	101	134	293	599	29	1 759
Eastern region	171	-	2	11	4	-	1	-	11	11	1	130
Ulaanbaatar	1 216	-	4	59	30	1	32	15	174	302	11	588

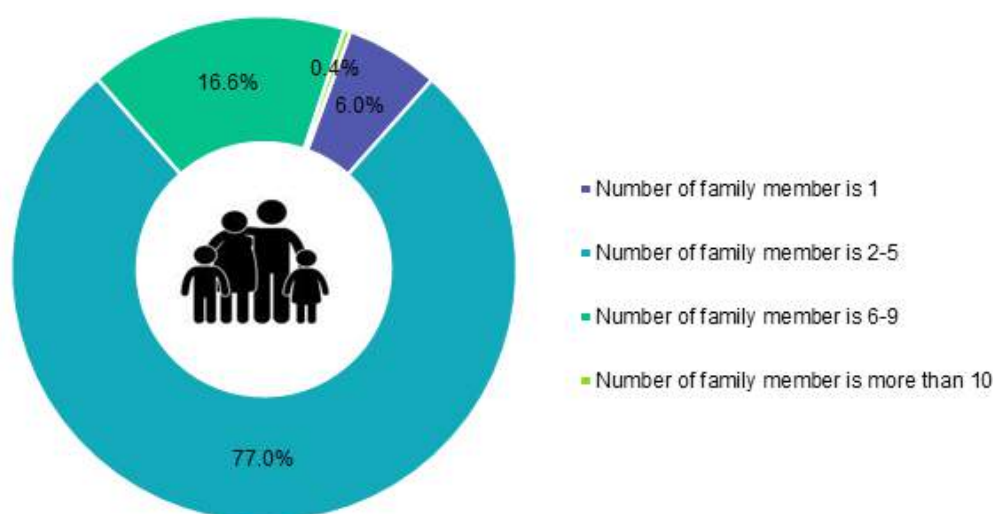
2.6 NUMBER OF FAMILY MEMBERS OF ARTISANAL AND SMALL-SCALE MINERS

In this section, family members of artisanal and small-scale miners are presented.

Table 10. Persons involved in ASM, by group of number of family members and percent

Region	TOTAL	1	2-5	6-9	10+
TOTAL	100.0	6.0	77.0	16.6	0.4
Western region	100.0	3.2	76.5	20.1	0.2
Khangai region	100.0	7.0	75.0	16.8	1.2
Central region	100.0	7.5	78.2	14.1	0.2
Eastern region	100.0	11.7	75.4	11.7	1.2
Ulaanbaatar	100.0	8.1	77.8	13.7	0.4

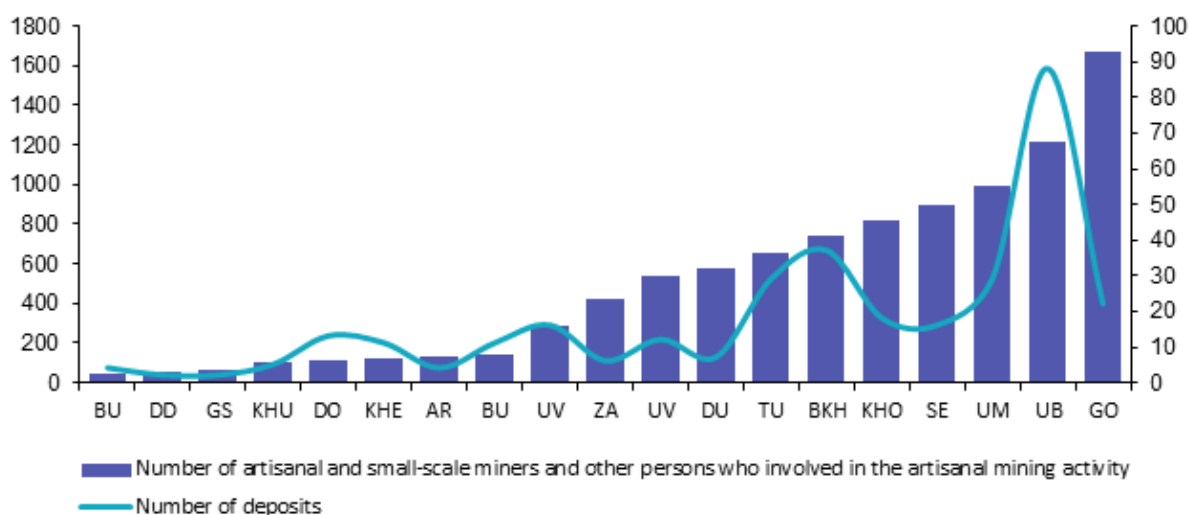
Looking at the number of family members of persons involved in ASM by region, 75.0-77.8 percent has 2-5 family members. The number of family members is highest in the Western region with higher by one person from national average. This can be attributed to the fact that an average family size in western region is the highest and higher than one person than the country average.

Figure 4. Share of number of family members of persons involved in ASM

The 77.0 percent of 9.6 thousand surveyed persons involved in ASM have 2-5 family members, 16.6 percent have 6-9 members, 6.0 percent have 1 member, 0.4 percent have 10 members or more, and average number of family member is 4.

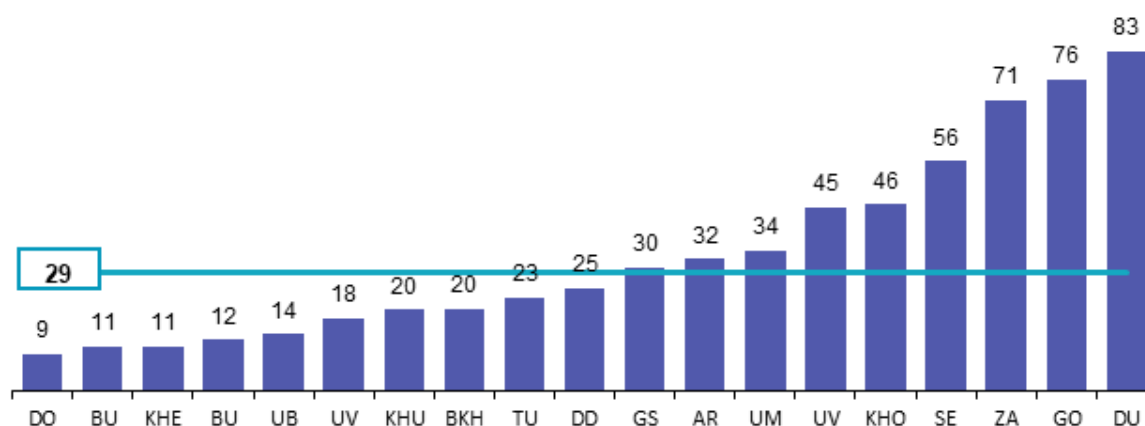
2.7 NUMBER OF ARTISANAL AND SMALL-SCALE MINING DEPOSITS

Artisanal and small-scale mining is conducted in total at 332 sites of 113 deposits (officially allocated lands), out of which, 205 or 61.7 percent are in 4 aimags and 1 district, specifically, 88 deposits are in Nalaikh district, 37 in Bayankhongor aimag, 29 in Tuv aimag, 29 in Umnugobi aimag and 22 in Gobi-Altai aimag.

Figure 5. Numbers of persons involved ASM and deposits by aimag and the capital city

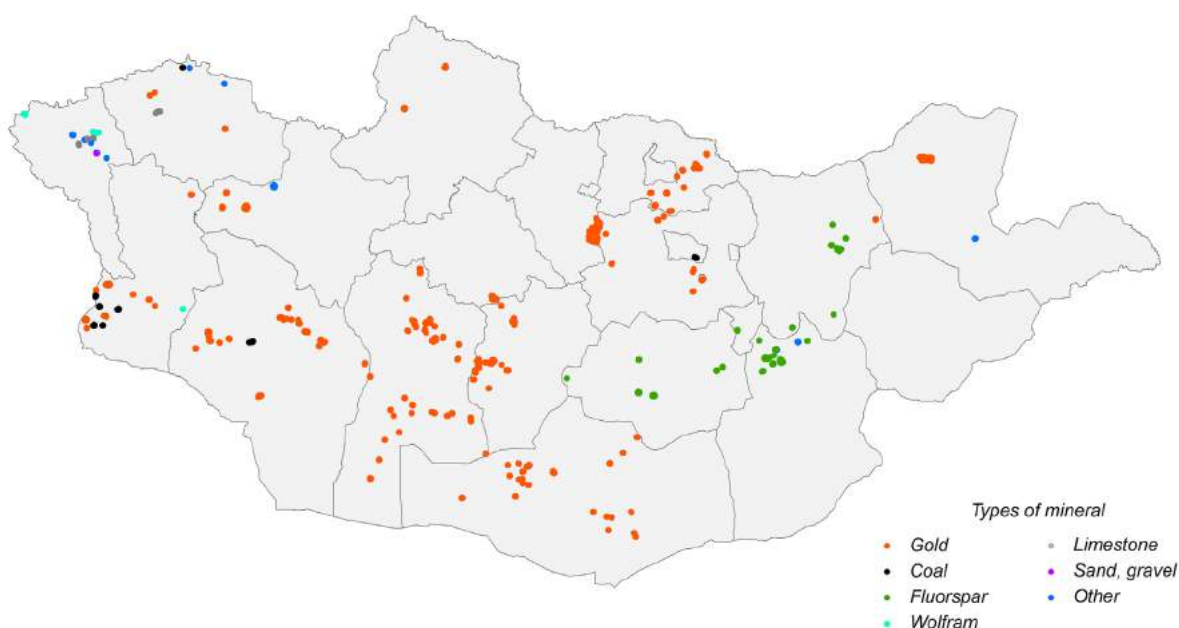
In above 4 aimags and 1 district with many deposits, 5.5 thousand persons are actively working in ASM, out of which 1.7 thousand or 17.4 percent are in Gobi-Altai aimag; 1.2 thousand or 12.7 percent in Nalaikh district; 1.0 thousand or 10.4 percent in Umnugobi aimag; 0.7 thousand or 7.8 percent in Bayankhongor aimag; 0.6 thousand or 6.8 percent in Tuv aimag.

Figure 6. Number of persons involved in ASM per deposit, by aimags and capital city



A national average number of persons involved in ASM per deposit is 29. Average numbers by aimags are 83 in Dundgobi aimag, 76 in Gobi-Altai aimag, 71 in Zavkhan aimag, 56 in Selenge aimag, 46 in Khovd aimag, 45 in Uvs aimag, 34 in Umnugobi aimag, 32 in Arkhangai aimag, 30 in Gobisumber aimag, and in other aimags, the average number is lower than the national average.

Figure 7. Locations of ASM deposits, by type of minerals and aimags and the capital city



Bayankhongor, Tuv, Uvs, Selenge and Khuvsgul aimags and Ulaanbaatar city with high number of gold and coal deposits, have a large number of persons involved in ASM. Whilst Eastern region's aimags with fluorspar and wolfram deposits have a lower number of artisanal and small-scale miners. It can be concluded that the density of persons involved in ASM directly depends on type of minerals

3

EMPLOYMENT STATUS OF ARTISANAL AND SMALL-SCALE MINERS

In total, 6.0 thousand artisanal and small-scale mining operators participated in the artisanal and small-scale miners' survey-2016.

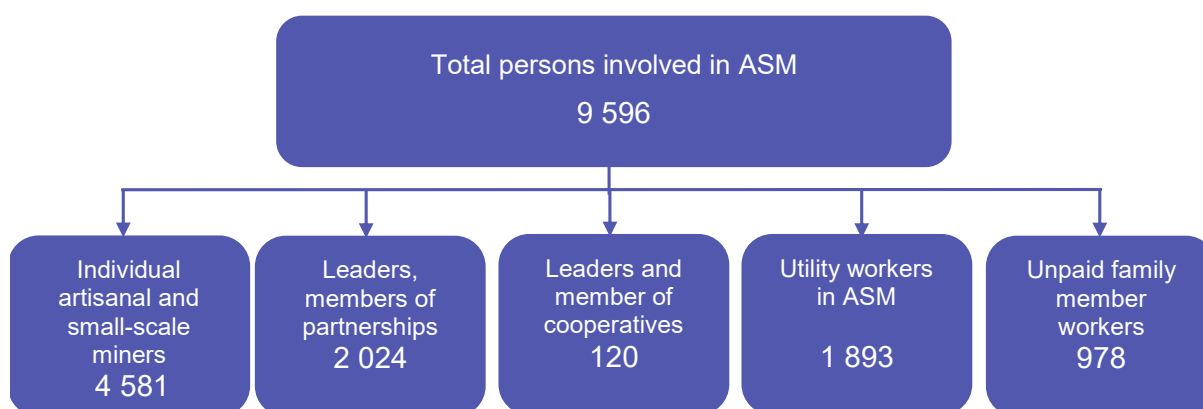
PART THREE. EMPLOYMENT STATUS OF ARTISANAL AND SMALL-SCALE MINERS

This part looks at artisanal and small-scale miners' employment status, occupation, years worked in ASM, their roles and responsibilities in artisanal mining, and reasons for working in ASM.

3.1 EMPLOYMENT STATUS OF ARTISANAL AND SMALL-SCALE MINERS

In total, 9.6 thousand persons involved in ASM activity participated in the 2016 survey, and this number compared with the previous survey, has decreased by 3.8 thousand or 28.3 percent. Out of total number of surveyed persons, 1.3 percent are leaders and members of ASM cooperatives, 10.1 percent are unpaid family member workers, 19.7 percent are utility workers in ASM, 21.1 percent are leaders and members of ASM partnerships and 47.8 percent are informal artisanal and small-scale miners.

FIGURE 8. Number of ASM and other persons who involved in the artisanal mining activity, by type of employment



According to the survey, 47.5 percent of total 2024 leaders and members of partnerships are in the Central region, 21.7 percent in Western region, 19.9 percent in Khangai region, and 5.9 percent in Eastern region, and rest 5.0 percent in Ulaanbaatar.

92.5 percent of the ASM cooperative leaders and members are in Central region, 6.7 percent in Western region and 0.8 percent in Khangai region.

Table 11. Employment status of persons involved ASM, by region

Region	TOTAL	Leaders/ members of partnerships	Leaders/ members of cooperatives	Individual artisanal and small-scale miners	Utility workers	Unpaid family workers
TOTAL	9 596	2 024	120	4 581	1 893	978
Western region	3 597	439	8	2 262	312	576
Khangai region	1 300	402	1	672	93	132
Central region	3 312	961	111	1 504	517	219
Eastern region	171	120	-	45	3	3
Ulaanbaatar	1 216	102	-	98	968	48

The 49.4 percent of total 4581 individual artisanal and small-scale miners are in Western region, 32.8 percent in Central region, 14.7 percent in Khangai region, 2.1 percent in Ulaanbaatar city and 1.0 percent in East region.

The 51.1 percent of total 1893 utility service workers are in Ulaanbaatar city, 27.3 percent in Central region, 16.5 percent in Western region, 4.9 percent in Khangai region and 0.2 percent in Eastern region.

The 58.9 percent of total 978 unpaid family member-workers are in Western region, 22.4 percent in Central region, 13.5 percent in Khangai region, 4.9 percent in Ulaanbaatar city and 0.3 percent in Eastern region, respectively.

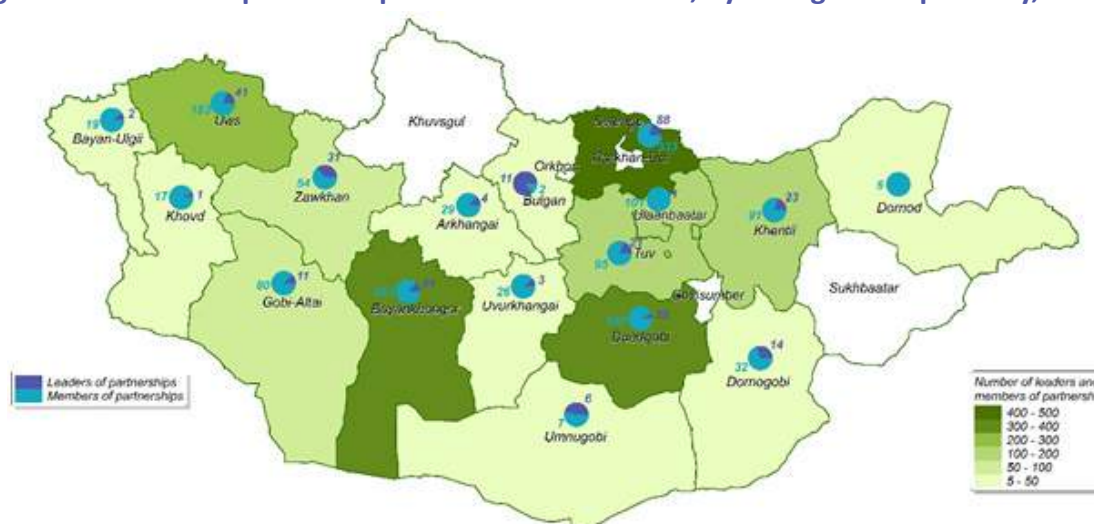
Table 12. Employment status of persons involved ASM, by roles in artisanal mining activity

Roles in artisanal mining	TOTAL	Leaders/ members of partnerships	Leaders/ members of cooperatives	Individual artisanal and small-scale miners	Utility workers	Unpaid family workers
TOTAL	9 596	2 024	120	4 581	1 893	978
Miners (extraction of minerals)	5 295	1 219	14	3 926	121	15
Utility workers in ASM	1 653	508	99	232	802	12
Mineral buyers	187	28	-	37	107	15
Traders of food and other goods	182	22	-	38	106	16
Canteen stewards	279	32	2	39	189	17
Truck drivers	498	41	2	47	380	28
Unpaid family workers	1 435	152	3	251	166	863
Investors	67	22	-	11	22	12

In terms of type of tasks performed, 5.3 thousand or 55.2 percent of total persons involved in ASM participate in actual mineral extraction, 1.7 thousand or 17.2 percent work in utility tasks in ASM, 1.4 thousand or 15.0 percent work as unpaid family member-workers, 0.5 thousand or 5.2 percent as truck drivers, 0.3 thousand or 2.9 percent as a canteen owners, 0.2 thousand or 1.9 percent as buyers of minerals, 0.2 thousand or 1.9 percent as a traders of food and other goods and 0.7 percent as investors, respectively.

Partnership leaders and members: 0.5 thousand or 5.2 percent of total persons involved ASM are partnership leaders or employers and 1.5 thousand or 15.9 percent are members of partnerships. Out of total persons organized into partnerships, 24.6 percent are partnership leaders/employers and 75.4 percent are partnership members.

Figure 9. Number of partnership leaders and members, by aimag and capital city, and type



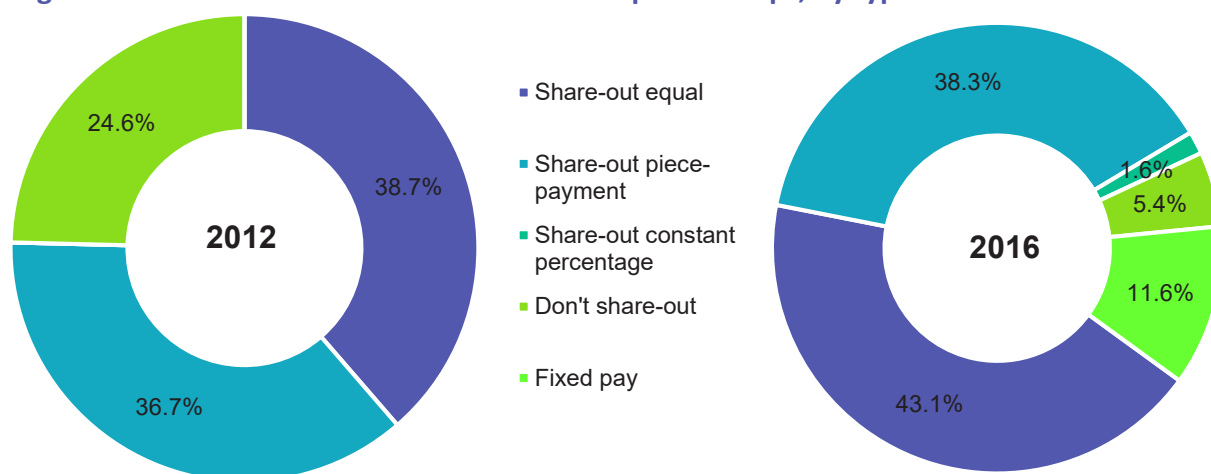
The number of leaders and members of partnerships increased by 94 persons or 4.9 percent compared with the previous survey. 1.5 thousand or 74.5 percent of the partnership leaders, members are male and 0.5 thousand or 25.5 percent are female. The share of male leaders, members of partnerships decreased by 1.8 points and share of female increased by 1.8 points compared with the previous survey.

Table 13. Number of leaders and members of partnerships, by age group and sex

Age group	Total		Male		Female	
	2012	2016	2012	2016	2012	2016
TOTAL	1 930	2 024	1 471	1 507	459	517
15-17	11	2	11	2	-	-
18-19	40	24	30	21	10	3
20-24	256	142	228	127	28	15
25-29	324	259	274	216	50	43
30-34	338	305	266	248	72	57
35-39	327	303	240	218	87	85
40-44	250	359	168	249	82	110
45-49	196	301	134	205	62	96
50-54	116	194	72	134	44	60
55-59	54	88	35	53	19	35
60-64	9	30	6	21	3	9
65-69	7	13	5	9	2	4
70 +	2	4	2	4	-	-

In terms of age group, the number of leaders and members of partnerships aged 15-39 decreased, whereas the number of leaders and members of partnerships aged above 40 increased. This indicates that more senior persons prefer to be work in partnership arrangement.

Figure 10. Number of leaders and members of partnerships, by type of income distribution



According to the Figure 10 on income distribution of partnerships, 872 or 43.1 percent distribute the income from artisanal and small-scale mining to members equally, 776 or 38.3 percent distribute as a payment for a single work done, 234 or 11.6 percent paid with fixed amount, 109 or 5.4 percent do not distribute the income and 33 or 1.6 percent distribute as fixed percentage of income. 73.4 percent of the partnership leaders and members are members of ASM NGOs.

Compared to the previous survey results, a share of persons belonging to partnerships which distribute their income equally, increased by 4.4 points and a share of persons belonging to partnerships which distribute their income as a payment for a work done increased by 1.6 points, a share of persons belonging to partnerships which do not distribute income, decreased by 19.2 points.

Table 14. Number of leaders and members of partnerships, by type of income distributions and regions

Region	TOTAL	Income distribution equal	Income distribution as per work done	Income distribution as fixed share of income	Fixed pay	No income distribution
TOTAL	2 024	872	776	33	234	109
Western region	439	361	56	1	2	19
Khangai region	402	94	167	11	117	13
Central region	961	404	356	16	114	71
Eastern region	120	7	106	5	1	1
Ulaanbaatar	102	6	91	-	-	5

According to the income distribution of partnerships by regions, 46.3 percent of partnerships in Central region, 41.4 percent in Western region and 10.8 percent in Khangai region distribute their income to members equally.

Individual artisanal and small-scale miners: 4.6 thousand or 47.7 percent of total persons involved in ASM are individual artisanal and small-scale miners, out of which 4.0 thousand or 86.3 percent are male and 0.6 thousand or 13.7 percent are female.

Utility workers in ASM and unpaid family member-workers: In total, 1.9 thousand of utility workers in ASM participated in the survey, of which 76.7 percent are male, 23.3 percent are women, 81.9 percent completed a secondary education and 18.1 percent completed technical and vocational education. On the other hand, 0.7 thousand or 67.3 percent of the 1.0 thousand unpaid family member-workers are women and 84.9 percent completed a secondary education.

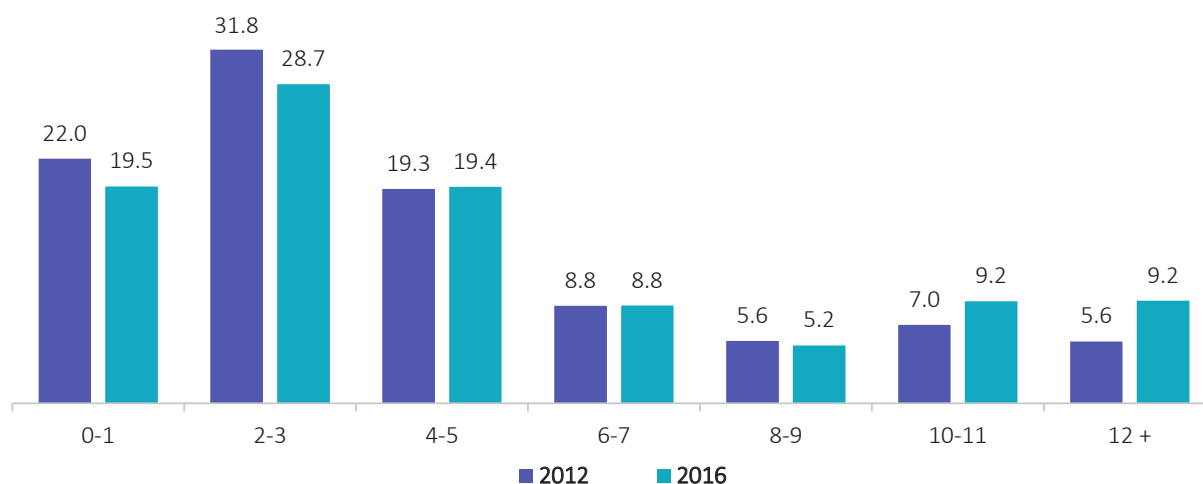
3.2 NUMBER OF YEARS WORKED AND REASONS FOR WORKING IN ARTISANAL AND SMALL-SCALE MINING

According to the survey, 1.4 thousand or 19.5 percent of total artisanal and small-scale miners worked up to one year in ASM, 2.0 thousand or 28.7 percent worked for 2-3 years, 1.4 thousand or 19.4 percent worked for 4-5 years, 0.6 thousand or 8.8 percent worked for 6-7 years, 0.4 thousand or 5.2 percent worked for 8-9 years, 0.6 thousand or 9.2 percent worked for 10-11 years, and 0.6 thousand or 9.2 percent worked for 12 and more years.

The majority of the artisanal and small-scale miners, 3.3 thousand or 48.2 percent worked up to 3 years. This number indicate that these persons are recently involved in artisanal and small-scale mining and are working for the last 3 years.

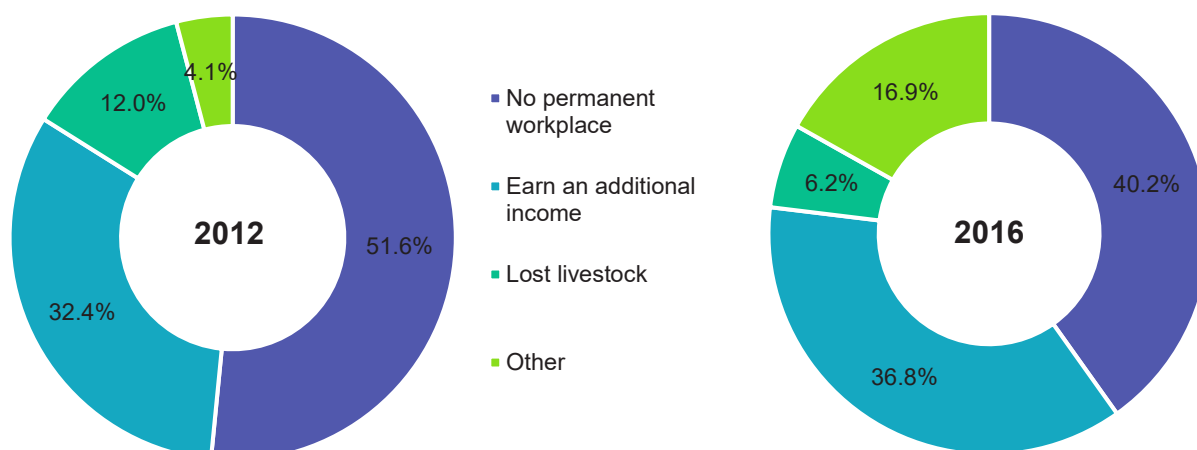
Compared with the previous survey, the share of persons who worked up to 1 year decreased by 2.5 points, persons worked for 2-3 years by 3.1 points and persons worked 8-9 years by 0.4 points, but the share of persons who worked for 4-5 years increased by 0.2 points, persons worked for 10-11 years increased by 2.2 points and persons worked for 12 and more years increased by 3.6 points.

Figure 11. Number of artisanal and small-scale miners, group of working years in ASM, in percentage



There are 158 persons with a profession of operators and assemblers of machineries and equipment who worked up to 1 year, 197 persons who worked for 2-3 years, 187 persons for 4-5 years, 121 persons for 6-7 years, 64 persons for 8-9 years, 144 persons for 10-11 years, and 125 persons worked for 12 and more years in artisanal and small-scale mining.

Figure 12. Artisanal and small-scale miners, by reasons for working in ASM, in percentage



Reasons for working in ASM are as follows: 40.2 percent of total artisanal and small-scale miners have no permanent workplaces, 36.8 percent to earn an additional income for, 6.2 percent due to loss of livestock, 16.9 percent to start up own business and other purposes.

For the reasons for working in ASM by regions, a table below shows that 39.3 percent of the artisanal and small-scale miners in Western region are in the artisanal mining because of no permanent workplaces, 38.4 percent to earn an additional income, 15.2 percent for other reasons and 7.1 percent due to loss of livestock.

Table 15. Artisanal and small-scale miners, by reasons for working in ASM, in overlapping number

Region	TOTAL	No permanent workplace	Loss of livestock	Earn an additional income	Other
TOTAL	9 589	3 851	595	3 526	1 617
Western region	3 630	1 428	257	1 395	550
Khangai region	1 419	526	130	527	236
Central region	3 416	1 310	178	1 362	566
Eastern region	199	83	10	82	24
Ulaanbaatar	925	504	20	160	241

For Central region, 39.9 percent of the artisanal and small-scale miners operate the artisanal mining to earn an additional income, 38.3 percent because of no permanent workplaces, 16.6 percent for other reasons and 5.2 percent because of loss of their livestock.

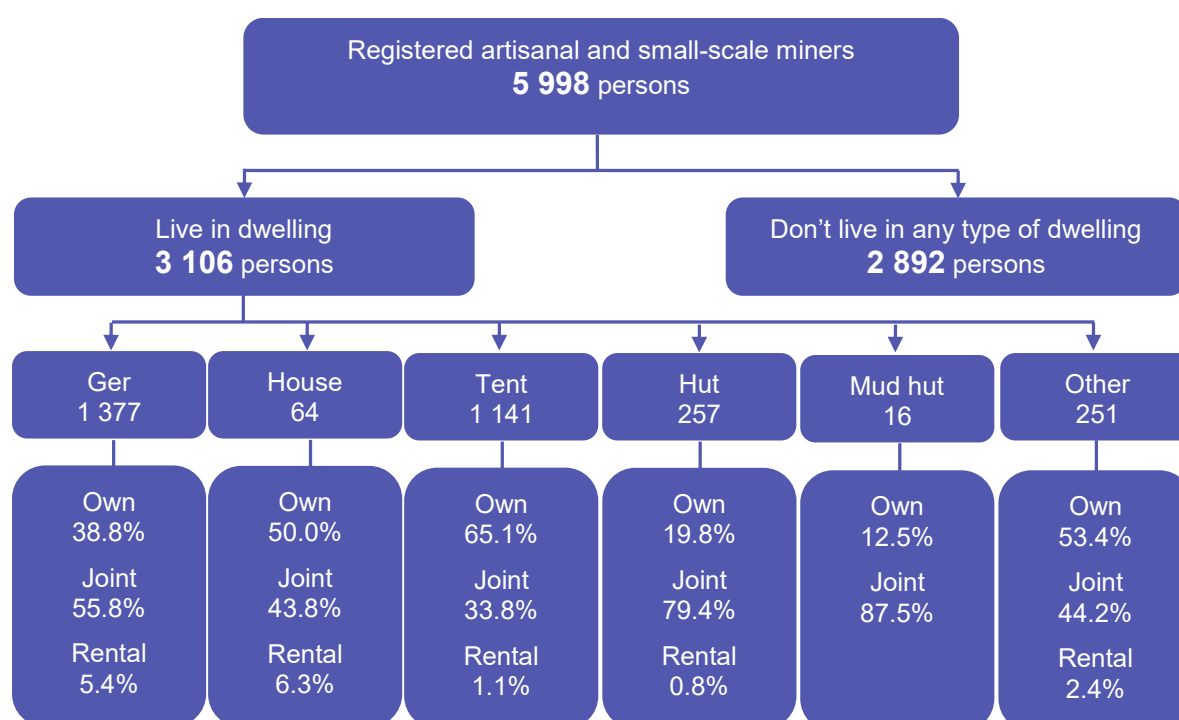
For Ulaanbaatar city, 54.5 percent of the artisanal and small-scale miners operate the artisanal mining because of no permanent workplaces, 26.1 percent for other reasons, 17.3 percent to earn an additional income, and 2.2 percent because of loss of their livestock.

3.3 DWELLING, ELECTRICITY SUPPLY AND DRINKING WATER SOURCE

This part discusses the types of dwellings, where the artisanal and small-scale miners stay during their mining activities, dwelling ownership, source of drinking water and electricity. The information about utility workers in ASM and unpaid family member-workers are not included here.

Type of dwelling of artisanal and small-scale miners: 3.1 thousand or 51.8 percent of the total artisanal and small-scale miners, who participated in the survey, answered that they live in dwelling at the deposit sites, but the rest 2.9 thousand or 48.2 percent answered that they do not stay in any kind of dwelling during artisanal and small-scale mining activities.

Figure 13. Type of dwellings of artisanal mining operators, by type of ownership



The 44.3 percent of the persons who live in dwellings, live in gers, 36.7 percent live in tents, 8.3 percent live in huts, 8.1 percent live in other types of dwellings, 2.1 percent live in houses and 0.5 percent live in mud huts. It can be concluded that more than 50 percent of the persons live in dwellings that not suitable for living.

According to ownership of the dwelling, 1496 persons or 48.2 percent of total respondents have own dwelling, 1511 persons or 48.6 percent have dwelling of joint ownership, but 99 persons or 3.2 percent live in rental dwelling. Of which, 38.8 percent of the 1377 artisanal and small-scale miners live in own gers, 55.8 percent live in gers of joint ownership and 5.4 percent live in rental gers; while the 65.1 percent of the 1141 miners live in own tents, 33.8 percent live in tents of joint ownership, and 1.1 percent live in rental tents.

The 35.7 percent of the own dwellings are gers, 2.1 percent are houses, 49.7 percent are tents, 3.4 percent are huts, 0.1 percent are mud huts, and 9.0 percent of other type of dwellings; while the 50.8 percent of jointly owned dwellings are gers, 1.9 percent are houses, 25.5 percent are tents, 13.5 percent are huts, 0.9 percent are mud huts, and 7.3 percent of other type of dwellings. As well, the 75.8 percent of rental dwellings are gers, 4.0 percent are houses, 12.1 percent are tents, 2.0 percent are huts and 6.1 percent of other types of dwellings.

Table 16. Type of dwelling of artisanal and small-scale miners, by region

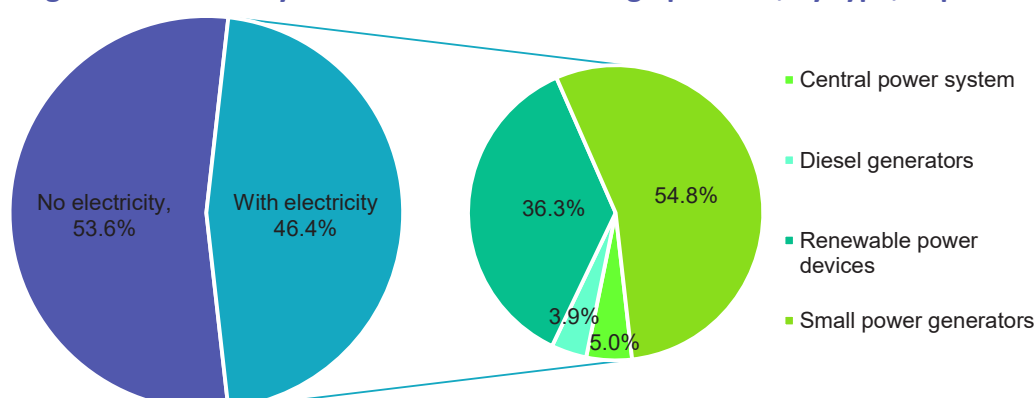
Region	TOTAL	Ger	House	Tent	Hut	Mud hut	Other
TOTAL	3 106	1 377	64	1 141	257	16	251
Western region	1 303	515	17	625	83	12	51
Khangai region	527	364	7	106	18	-	32
Central region	1 132	399	32	378	154	3	166
Eastern region	107	71	2	32	1	1	-
Ulaanbaatar	37	28	6	-	1	-	2

Electricity source of artisanal and small-scale miners: This part determines the source of electricity of the dwellings in the area, where the artisanal and small-scale miners run their activities. Source of electricity is one of the main indicators for the artisanal and small-scale miners to work and live comfortably and therefore, the source of electricity of the area, where the artisanal and small-scale miners run their activities, was classified as central power system, diesel generator, renewable power devices, small power generator, no electricity source.

More than half of the artisanal and small-scale miners participated in the survey, or 53.6 percent of artisanal and small-scale miners exploit minerals in places with no electricity source.

In these conditions, 54.8 percent of the artisanal and small-scale miners use the electricity from small power generator and 36.3 percent use the electricity from renewable energy devices. On the other hand, 5.0 percent use electricity from central power system and rest 3.9 percent are connected to diesel generators.

Figure 14. Electricity source of artisanal mining operators, by type, in percent



Electricity use of artisanal and small-scale miners by type of minerals: 16.6 percent are fluor spar miners, 46.9 percent are coal miners, 52.6 percent are gemstone miners, 54.0 percent of wolfram miners and 57.2 percent of gold miners live in places with no electricity source.

47.4 percent of gemstone miners, 28.0 percent of wolfram miners and 27.0 percent of gold miners use small power generator, whereas 53.1 percent of coal miners connect to the central power system.

59.4 percent of fluor spar miners use renewable energy devices to generate electricity.

68.5 percent of the artisanal and small-scale miners in Western region, 30.9 percent of the artisanal and small-scale miners in Khangai region, 48.0 percent of the artisanal and small-scale miners in Central region and 59.8 percent of the artisanal and small-scale miners in Eastern region live in places with no electricity source.

Drinking water source of artisanal small-scale miners: This part discusses about drinking water sources in the areas where the artisanal and small-scale miners extract the minerals.

The majority of the survey participants or 2197 persons or 36.6 percent use water from rivers, lakes, unprotected wells, streams and springs for drinking.

3150 artisanal and small-scale miners or 52.5 percent use the drinking water from portable water and the 314 persons or 5.2 percent use the water from protected wells. The rest 5.7 percent use the drinking water from protected streams, springs, bottled water and other sources.

Artisanal and small-scale miners who use water from other resources: 107 persons or 1.8 percent use the water from protected streams and springs, 151 persons or 2.5 percent use bottled water, 65 persons or 1.1 percent use water from water stations connected to central water supply system, and 14 persons or 0.2 percent use water from water station not connected to central water system.

Table 17. Drinking water source of artisanal and small-scale miners by region, in percentage

Region	TOTAL	Water station connected to central water supply system	Protected well	Protected springs	Refined bottled water	Water station not connected to central water supply system	Tanker trucks	Unprotected well, springs, river, stream, lake, pond
TOTAL	100.0	1.1	5.2	1.8	2.5	0.2	52.5	36.6
Western region	100.0	0.5	2.7	2.4	0.1	0.2	57.6	36.6
Khangai region	100.0	0.9	15.1	2.6	0.4	0.1	40.4	40.5
Central region	100.0	1.7	3.7	1.0	6.4	0.4	48.1	38.7
Eastern region	100.0	4.3	14.0	0.6	0.6	-	55.5	25.0
Ulaanbaatar	100.0	0.6	-	-	0.6	0.6	98.2	-

Tanker truck is the drinking water source for 98.2 percent of artisanal and small-scale miners in Ulaanbaatar city, 57.6 percent in Western region, 55.5 percent in Eastern region, 48.1 percent in Central region and 40.4 percent in Khangai region. While the 40.5 percent of artisanal mining operators in Khangai region, 38.7 percent in Central region, 36.6 percent in Western region and 25.0 percent in Eastern region use water from rivers, lakes, unprotected wells, streams and springs.

The table below demonstrates that the drinking water source of artisanal and small-scale miners by type of minerals, is as following: 50.2 percent of gold miners use water from tanker trucks, 39.8 percent from rivers, lakes, unprotected wells, streams and springs and rest 10.0 percent from other sources such as protected wells, springs, refined bottled water, water station connected and not connected to central water supply system.

Table 18. Drinking water source of artisanal and small-scale miners by type of minerals, in percentage

Region	Total	Water station connected to central water supply system	Protected well	Protected springs	Bottled water	Water station not connected to central water supply system	Tanker trucks	Unprotected well, springs, river, stream, lake, pond
TOTAL	100.0	1.1	5.2	1.8	2.5	0.2	52.5	36.6
Gold	100.0	1.0	5.6	2.1	1.1	0.2	50.2	39.8
Coal	100.0	0.7	-	-	0.7	0.7	82.8	14.9
Spar	100.0	1.7	3.4	0.3	14.0	0.1	78.3	2.2
Wolfram	100.0	1.3	-	3.2	-	-	14.6	80.9
Limestone	100.0	-	53.3	-	-	-	46.7	-
Gemstone	100.0	-	-	-	-	-	20.5	79.5
Other	100.0	-	11.3	-	-	1.0	19.6	68.0

Whereas, 82.8 percent of coal miners use water from tanker trucks and 14.9 percent from rivers, lakes, unprotected wells, streams and springs, 78.3 percent of fluor spar miners use water from tanker trucks and 14.0 percent use the bottled water and 53.3 percent of limestone miners use water from protected wells and rest 46.7 percent from tanker trucks.

4

KNOWLEDGE OF ARTISANAL AND SCALE MINERS ABOUT CHILDREN'S RIGHTS

61.8 percent of total 188 children, who involved in the artisanal and small-scale mining activities, are under 18 years old. They work during the seasonal school holiday and engaged in hauling the water, carrying rocks and earth.

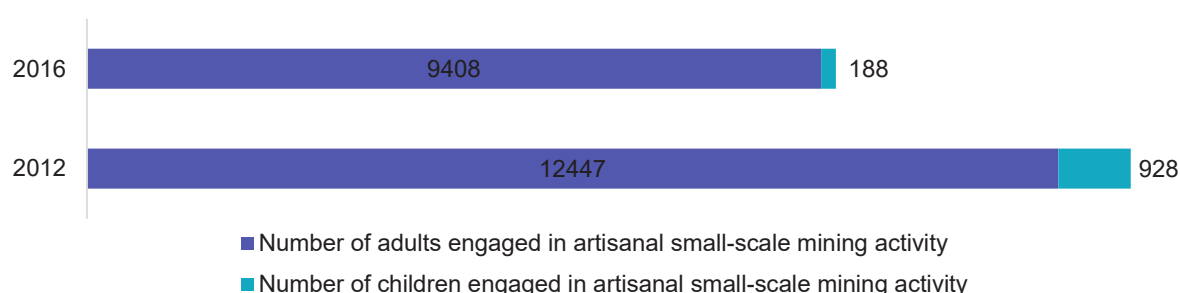
PART FOUR. KNOWLEDGE OF THE ARTISANAL AND SMALL-SCALE MINERS ABOUT CHILDREN'S RIGHTS

This part looks at the children involved in artisanal and small-scale mining: their rights, role, injuries during work.

4.1 KNOWLEDGE OF ARTISANAL AND SMALL-SCALE MINERS ABOUT CHILDREN'S RIGHTS

The result of the 2012's survey indicated that 13375 persons involved in the artisanal and small-scale mining, and out of this number, 928 or 7.0 percent were 10-18 years old. According to the 2016 survey, 9596 persons are engaged in artisanal and small-scale mining, out of which 188 or 2.0 percent are 10-18 years old.

Figure 15. Number of children involved in ASM



In terms of the knowledge level of the artisanal and small-scale miners about children's rights, 2408 or 34.7 percent of them said that they have a good knowledge, 3395 or 48.9 percent answered that they have some knowledge, 645 or 9.3 percent said that they have a little knowledge and 500 or 7.2 percent said that they don't know about it.

Table 19. Knowledge level of artisanal and small-scale miners about children's rights, by region

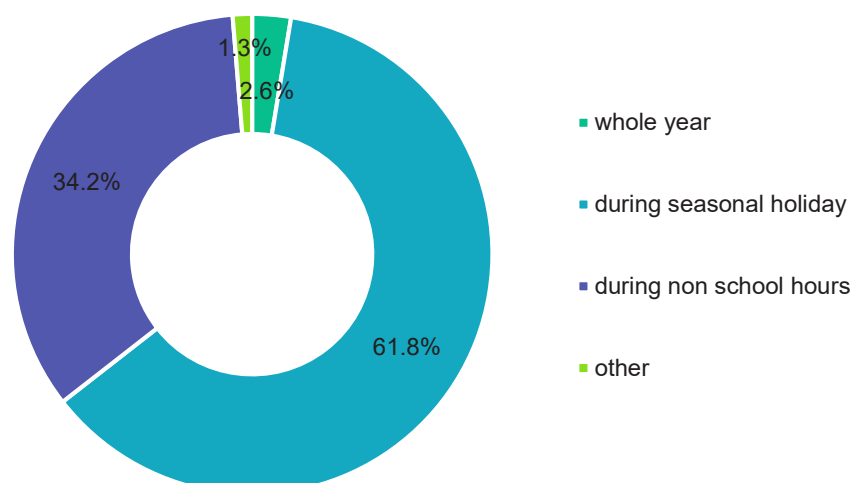
Region	TOTAL	Good	Average	Weak	Don't know
TOTAL	6 948	2 408	3 395	645	500
Western region	2 614	880	1 264	283	187
Khangai region	963	310	437	115	101
Central region	2 440	864	1 173	213	190
Eastern region	164	62	84	9	9
Ulaanbaatar	767	292	437	25	13

38.1 percent of artisanal and small-scale miners in Ulaanbaatar city, 37.8 percent in Eastern region, 35.4 percent in the Central region, 33.7 percent in Western region and 32.2 percent in Khangai region answered that they have a good knowledge regarding the children's rights. But the 57.0 percent in Ulaanbaatar city, 51.2 percent in Eastern region, 48.4 percent in Western region, 48.1 percent in Central region and 45.4 percent in Khangai region answered they have some knowledge on children's rights.

4.2 PARTICIPATION OF CHILDREN (UP TO 18 YEARS OLD) IN ARTISANAL AND SMALL-SCALE MINING ACTIVITY

61.8 percent of surveyed children participated in artisanal and small-scale mining activity during their school holidays, 34.2 percent during non-school hours, and 2.6 percent throughout year.

Figure 16. Number of children working in ASM, by type time period, in percentage



The majority or 51.1 percent of children involved in ASM engaged in hauling water, carrying rocks and dirt, 28.7 percent in digging holes, 8.5 percent in gold and stone washing work, 4.3 percent in stone crushing work, 7.4 percent are involved in other auxiliary activities.

Table 20. Type of work children do in ASM, by region and in percent

Region	TOTAL	Digging holes	Hauling water, rocks and dirt	Crushing stone	Washing gold and stones	Other
TOTAL	100.0	28.7	51.1	4.3	8.5	7.4
Western region	100.0	34.8	47.0	4.5	6.1	7.6
Khangai region	100.0	-	61.5	-	30.8	7.7
Central region	100.0	26.7	60.0	6.7	-	6.7

According to the table above, 47.0 percent of children involved in hauling the water, carrying rocks and earth and 34.8 percent in digging holes are in Western region, while in Khangai region 61.5 percent of children are involved in hauling the water, carrying rocks and earth and 30.8 percent in gold and stone washing work. In Central region, 60.0 percent of children are involved in hauling water, carrying rocks and dirt and 26.7 percent in digging holes.

The 66.7 percent of children involved in ASM activities had a light injury, 23.1 percent had injury of arms, legs, 5.1 percent had brain, back and spinal cord injury and 5.2 percent were poisoned by toxic substances and had eyesight and hearing injuries.

Table 21. Type of injuries of children involved in ASM, by region, in percentage

Region	TOTAL	Light injury	Pillar injury (arms, legs)	Eyesight and hearing injury	Brain, back and spinal cord injury	Toxic substance poisoning
Total	100.0	66.7	23.1	2.6	5.1	2.6
Western region	100.0	64.3	21.4	7.1	7.1	-
Khangai region	100.0	50.0	50.0	-	-	-
Central region	100.0	71.4	19.0	-	4.8	4.8

In Western region, 64.3 percent of the children involved in artisanal mining activities had a light injury, 21.4 percent had injuries of arms and legs, and 14.2 percent were poisoned by toxic substances and had eyesight, hearing injuries, and brain, back and spinal cord injury. Whereas, 50.0 percent of the children involved in artisanal mining activities had a light injury and 50.0 percent had injuries of arms, legs in Khangai region. In Central region, 71.4 percent of the children involved in artisanal mining activities had a light injury, 19.0 percent had injuries of arms, legs and 9.6 percent had brain, back and spinal cord injuries and were poisoned by toxic substances.

5

INFORMATION NEEDS AND SOURCE OF INFORMATION

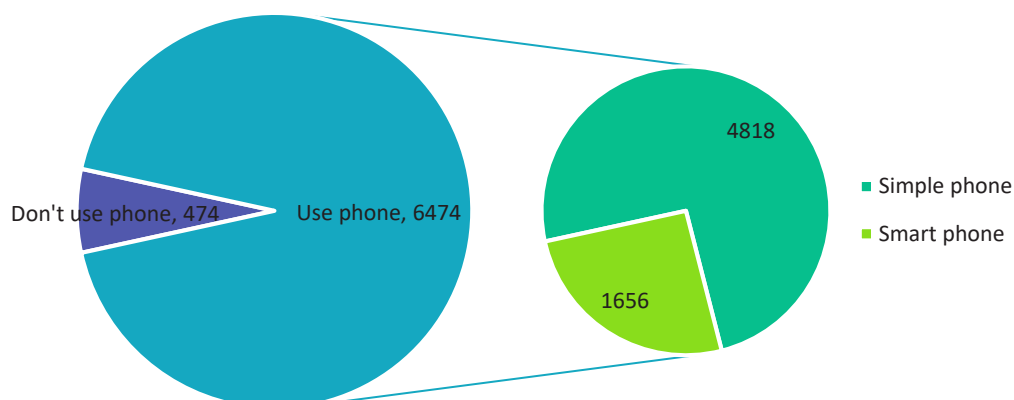
Information on social welfare, services and occupational health and safety (OHS). 23% of the surveyed artisanal and small-scale miners identified these as the most important things for artisanal and small-scale miners

PART FIVE. INFORMATION NEEDS OF ARTISANAL AND SMALL-SCALE MINERS AND SOURCES OF INFORMATION

5.1 USAGE OF MOBILE PHONES BY ARTISANAL AND SMALL-SCALE MINERS

93.2 percent or 6474 artisanal and small-scale miners, including the truck drivers, use mobile phones. Out of this 74.4 percent or 4818 artisanal and small-scale miners use regular mobile phones and 25.6 percent, or 1656 artisanal and small-scale miners use smart phones.

Figure 17. Mobile phone usage by ASM, by type of phones



87.2 percent or 5643 artisanal and small-scale miners who use mobile phones are men, and 831 or 12.8 percent are women. 75.2 percent of male artisanal and small-scale miners use simple mobile phones, 24.8 percent use smartphones. 69.2 percent of female artisanal and small-scale miners use simple mobile phones and 30.8 percent use smartphones.

Table 22. Usage of mobile phones by ASM, by age group and sex

Age group	TOTAL			Simple phone			Smart phone		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
TOTAL	6474	5643	831	4818	4243	575	1656	1400	256
10-14	1	1	-	1	1	-	-	-	-
15-17	13	13	-	5	5	-	8	8	-
18-19	81	73	8	41	35	6	40	38	2
20-24	465	431	34	260	240	20	205	191	14
25-29	980	898	82	619	575	44	361	323	38
30-34	1107	1009	98	764	707	57	343	302	41
35-39	1054	906	148	787	684	103	267	222	45
40-44	1002	858	144	803	711	92	199	147	52
45-49	809	679	130	684	582	102	125	97	28
50-54	577	472	105	505	424	81	72	48	24
55-59	269	205	64	244	189	55	25	16	9
60-64	88	73	15	79	67	12	9	6	3
65-69	23	20	3	22	19	3	1	1	-
70 +	5	5	-	4	4	-	1	1	-

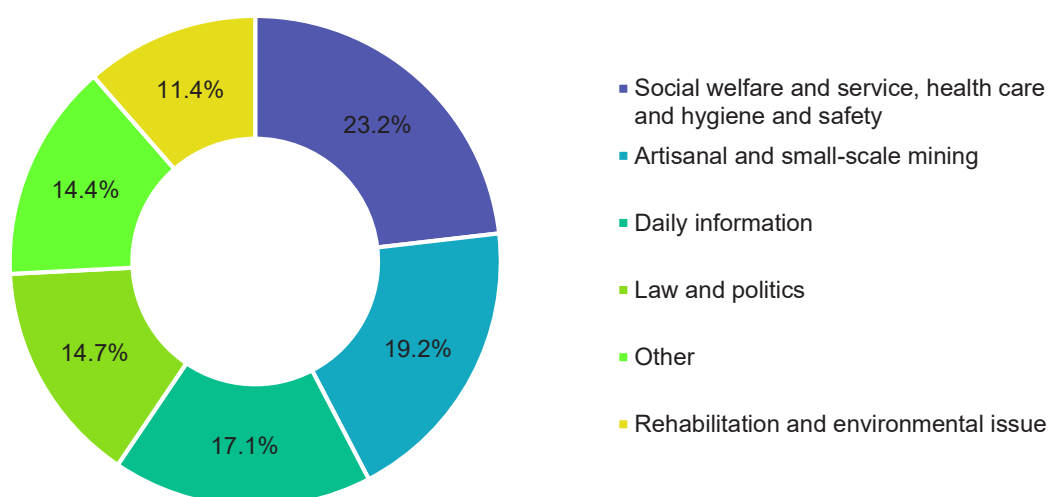
By age group, 17.9 percent of the male artisanal and small-scale miners using mobile phones are aged between 30-34 years old, 16.1 percent are between 35-39 years old and 15.9 percent are between 25-29 years old. Whilst, 17.8 percent of the female artisanal and small-scale miners who use mobile phone are aged between 35-39 years old, 17.3 percent are between 40-44 years old and 15.6 percent are between 45-49 years old.

5.2 INFORMATION NEEDS OF ARTISANAL AND SMALL-SCALE MINERS AND SOURCES OF INFORMATION

It is common for artisanal and small-scale miners to cause damage to themselves and/or to the environment due to lack of information related to legalization and rules.

In overlapping numbers, the 23.2 percent of the total artisanal and small-scale miners responded that they need information on social welfare, health, hygiene and safety, 19.2 percent need information on artisanal and small-scale mining operation, 17.1 percent need information on daily news, 14.7 percent need information on ASM legal environment, 11.4 percent need information on ASM rehabilitation and environmental issues, and 14.4 percent need information on other issues (such as politics, education, culture, science, and family).

Figure 18. Types of information that ASM need the most, in percentage, overlapping number



The survey results show that the most needed information for artisanal and small-scale miners are artisanal and small-scale mining operation, legal environment, regulation and environmental issues.

In terms of information sources, 42.5 percent of total artisanal and small-scale miners obtain information from television, 16.0 percent from other persons, 10.5 percent from meetings, 8.9 percent using mobile phones, 7.5 percent from internet and social media, 6.2 percent from newspapers and magazines, 3.8 percent from radio, 2.5 percent from printed materials, 2.0 percent from the bulletin board and 0.2 percent from other sources.

Table 23. Sources of information, by region in overlapping numbers

Region	TOTAL	TV	Radio	Internet, social media (facebook, twitter etc)	Mobile phone	Other people	Newsletter	Newspaper and magazine	Printed materials	Meeting	Other
TOTAL	100.0	42.5	3.8	7.5	8.9	16.0	2.0	6.2	2.5	10.5	0.2
Western region	100.0	42.3	5.4	4.1	7.4	17.5	2.1	5.6	2.6	12.7	0.1
Khangai region	100.0	48.1	1.6	6.6	7.9	14.6	1.5	5.7	1.2	12.8	-
Central region	100.0	39.0	3.1	9.8	11.4	15.2	1.4	6.6	3.0	10.1	0.3
Eastern region	100.0	31.7	3.3	8.3	3.3	16.4	8.1	18.8	2.6	7.1	0.2
Ulaanbaatar	100.0	53.5	2.7	11.7	7.9	14.5	3.1	3.4	1.7	1.4	0.1

In all regions, the main source of information for artisanal and small-scale miners is a television. As for other sources of information, artisanal and small-scale miners in Western, Khangai and Central regions responded that they obtain information from other citizens and meetings, while the artisanal and small-scale miners in the Eastern region obtained information mostly from newspapers and magazines. However, artisanal and small-scale miners in Ulaanbaatar responded that they receive information from other persons and social media.

Table 24. Sources of information of ASM, by age group, in percentage

Age group	TV	Radio	Internet, social media	Mobile phones	Other persons	Bulletin boards	Newspapers, magazines	Printed materials	Meetings	Other
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
11-14	-	-	0.1	-	-	-	-	-	-	-
15-17	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.3	-	-
18-19	1.2	0.5	2.6	1.4	1.0	1.3	1.0	0.8	0.4	-
20-24	6.8	3.4	15.1	8.9	5.7	6.9	5.0	8.0	5.3	-
25-29	14.9	12.0	24.9	17.3	12.7	14.2	11.4	15.2	13.0	4.3
30-34	16.8	12.9	19.1	18.6	16.9	13.5	14.1	16.0	16.2	21.7
35-39	16.6	17.0	13.3	17.0	16.9	14.5	15.2	14.6	16.1	8.7
40-44	15.5	15.7	11.1	14.3	16.8	17.2	17.0	16.0	17.1	13.0
45-49	12.5	16.4	7.7	11.5	13.7	16.2	15.5	14.6	14.8	17.4
50-54	9.1	10.5	4.4	7.4	9.9	10.6	11.6	10.6	10.9	17.4
55-59	4.3	8.0	0.9	2.4	4.4	3.6	6.0	2.9	4.3	8.7
60-64	1.4	2.7	0.4	0.9	1.5	1.7	2.5	0.8	1.1	8.7
65-69	0.4	0.7	0.2	0.2	0.3	-	0.5	0.3	0.4	-
70+	0.1	-	-	-	-	-	-	-	0.2	-

The artisanal and small-scale miners aged between 30-34 received information mostly from TV and mobile phones, miners aged between 35-39 years from radio and other persons, miners aged between 25-29 years from internet and social media, and miners aged between 40-44 years from bulletin boards, printed materials, newspapers and journals.

TABLE 25. Sources of information of ASM, in percent, by type of minerals and overlapping numbers

Type of minerals	TOTAL	TV	Radio	Internet, social media	Mobile phones	Other persons	Bulletin boards	Newspapers, magazines	Printed materials	Meetings	Other
TOTAL	100.0	42.5	3.8	7.5	8.9	16.0	2.0	6.2	2.5	10.5	0.2
Gold	100.0	41.9	3.5	7.0	9.7	16.9	1.6	6.1	2.0	11.1	0.2
Coal	100.0	54.9	3.1	11.0	8.6	15.1	3.4	1.8	1.0	1.1	0.0
Fluorspar	100.0	41.4	4.6	8.6	4.4	10.0	3.9	10.3	3.9	12.8	0.1
Wolfram	100.0	38.7	5.2	3.3	7.6	15.4	0.5	5.9	9.5	13.3	0.5
Limestone	100.0	31.0	28.6	0.0	14.3	21.4	0.0	2.4	2.4	0.0	0.0
Gemstone	100.0	34.3	0.0	14.6	14.6	10.2	2.9	2.2	5.8	15.3	0.0
Sand and gravel	100.0	33.3	0.0	4.8	4.8	14.3	0.0	14.3	19.0	9.5	0.0
Other	100.0	29.0	8.2	6.5	7.6	21.1	2.3	5.9	6.7	12.3	0.3

The source of information of artisanal and small-scale miners by minerals types:

The 41.9 percent of **gold miners** obtain information from television, 16.9 percent from other persons, 11.1 percent from meetings, 9.7 percent from mobile phones, 7.0 percent from internet and social media, 6.1 percent from newspapers, 3.5 percent from radios, 2.0 percent from printed materials and 0.2 percent from other sources.

The 54.9 percent of **coal miners** obtain information from television, 15.1 percent from other citizens, 11.0 percent from internet and social networks, 8.6 percent from mobile phones, 3.4 percent from bulletin boards, 3.1 percent from radios, 1.8 percent from newspapers, 1.1 percent from meetings, and 1.0 percent from printed materials.

The 41.4 percent of **fluorspar miners** obtain information from television, 12.8 percent from meetings, 10.3 percent from newspapers, 10.0 percent from other persons, 8.6 percent from internet and social media, 4.6 percent from radios, 4.4 percent from mobile phones, 3.9 percent from bulletin boards and printed materials and 0.1 percent from other sources.

The 38.7 percent of **wolfram miners** obtain information from television, 15.4 percent from other citizens, 13.3 percent from meetings, 9.5 percent from printed materials, 7.6 percent from mobile phones, 5.9 percent from newspapers, 5.2 percent from radios, 3.3 percent from internet and social networks, and 1.0 percent from bulletin board and other sources.

The 31.0 percent of **limestone miners** obtain information from television, 28.6 percent from radios, 21.4 percent from other persons, 14.3 percent from mobile phones, and 5.8 percent newspapers and meetings.

The 34.3 percent of **gemstone miners** get information from television, 29.2 percent from internet, social networks and mobile phones, 15.3 percent from meetings, 5.8 percent from printed materials, 2.9 percent from bulletin boards, and 2.2 percent from newspapers.



OCCUPATIONAL HEALTH AND SAFETY OF ARTISANAL AND SMALL-SCALE

2.0 percent of total 5998 artisanal and small-scale miners had accidents and injuries.

PART SIX. OCCUPATIONAL SAFETY AND HEALTH OF ARTISANAL AND SMALL-SCALE MINERS

Artisanal and small-scale miners often got into accident or get injured because they do not comply with the occupational safety and lack of knowledge. This section illustrates the knowledge level of the artisanal and small-scale miners on legal, occupational safety and health issues, accidents occurred during the mining operation, the type of diseases among artisanal and small-scale miners and access to medical services.

6.1 KNOWLEDGE ON OCCUPATIONAL SAFETY AND HEALTH OF ARTISANAL AND SMALL-SCALE MINERS

19.5 percent of the artisanal and small-scale miners participated in the survey answered that they have a good knowledge on legal environment and occupational safety and health, 64.5 percent have some knowledge and 16.0 percent have a little knowledge. Knowledge of artisanal and small-scale miners in Ulaanbaatar is comparatively higher than other regions' artisanal and small-scale miners.

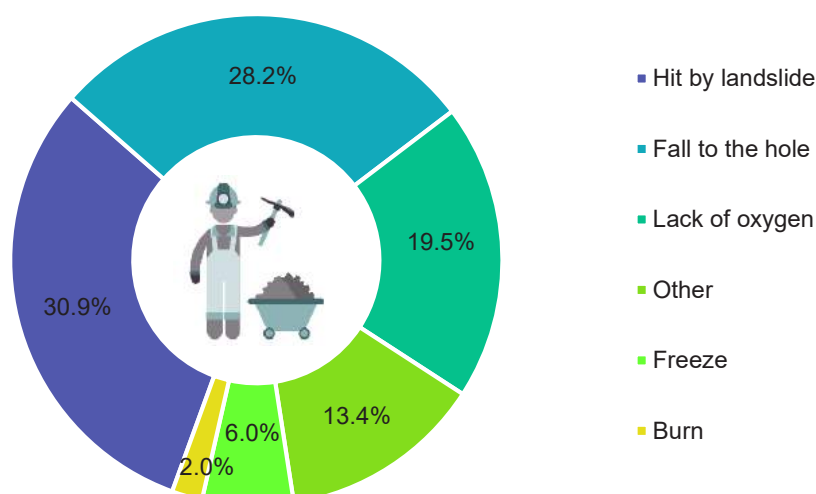
Table 26. Knowledge on occupational safety and health by artisanal and small-scale miners, by region

Region	Total	Sufficient	Fair	Not sufficient
TOTAL	100.0	19.5	64.5	16.0
Western region	100.0	13.9	67.4	18.6
Khangai region	100.0	19.4	60.6	19.9
Central region	100.0	23.0	61.4	15.6
Eastern region	100.0	23.2	59.1	17.7
Ulaanbaatar	100.0	26.6	70.5	2.9

6.2 TYPE OF ACCIDENTS AND DISEASES AMONG ARTISANAL AND SMALL-SCALE MINERS

98.0 percent of the surveyed artisanal and small-scale miners answered that they did not get any accidents or injuries during their activities. But, the rest 2.0 percent got some accidents and injuries. In overlapping number, the type of injuries and accidents were as following: 30.9 percent of artisanal and small-scale miners hit by landslide, 28.2 percent fell into holes, 19.5 percent lack of oxygen, 13.4 percent got other types of accidents, 6.0 percent got frozen, and 2.0 percent got burnt.

Figure 19. Type of accidents of artisanal and small-scale miners, by percentage



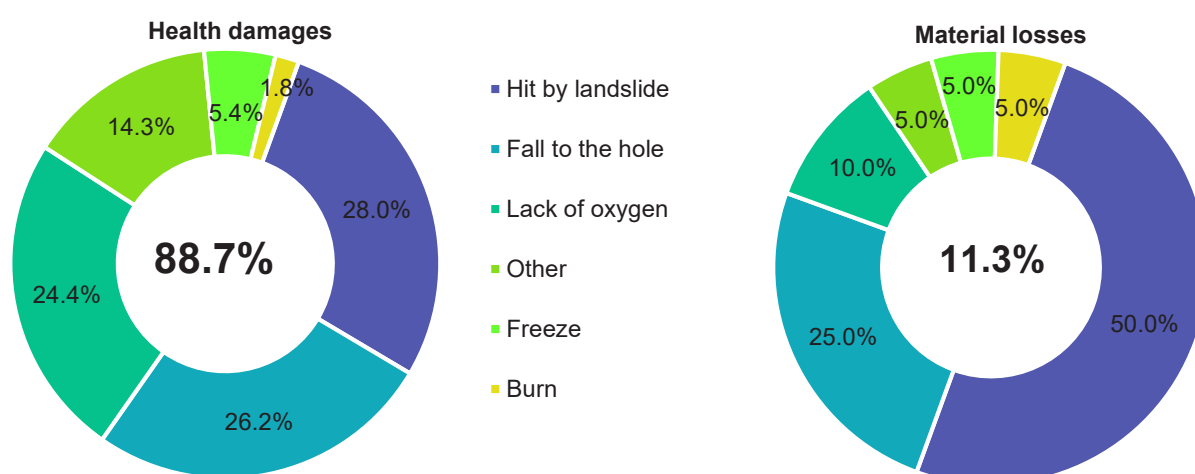
The figure above demonstrates the percentage of persons, who got into accidents and had injuries during the artisanal and small-scale mining by region: 34.1 percent of artisanal and small-scale miners experienced no oxygen, 49.0 percent were hit by landslide and 41.3 percent fell into holes are in Central region; in Khangai region 44.4 percent of persons suffered from freeze; and 36.4 percent of persons suffered from carbon monoxide in Western region, 36.4 in Central region, respectively. The share of persons who had other types of injuries is the same for Western, Khangai and Central regions. Majority of injured persons are the artisanal and small-scale miners operating in Central region.

TABLE 27. Type of accidents of artisanal and small-scale miners, by region, in percentage

Region	Lack of oxygen	Hit by landslide	Freeze	Fall to the hole	Burn	Other
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Western region	12.2	26.5	22.2	32.6	36.4	33.3
Khangai region	24.4	16.3	44.4	19.6	9.1	33.3
Central region	34.1	49.0	33.3	41.3	36.4	33.3
Eastern region	-	4.1	-	4.3	-	-
Ulaanbaatar	29.3	4.1	-	2.2	18.2	-

Due to accidents, artisanal and small-scale miners face two types of losses: health and material. 88.7 percent of total miners had the health losses and 11.3 percent had material losses. 28.0 percent of the artisanal and small-scale miners, who underwent health damages, caused by hitting of landslide, 26.2 percent from falling into holes, 24.4 percent from lack of air. 50.0 percent of artisanal and small-scale miners also had material losses caused by hitting by landslide, 25.0 percent from falling into holes, and 10.0 percent by lack of oxygen.

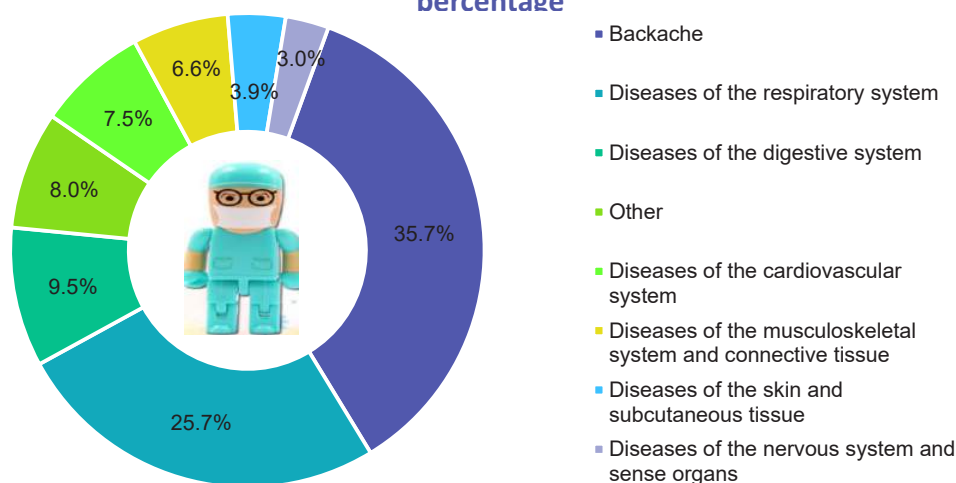
Figure 20. Type of losses of artisanal and small-scale miners, in percentage



According to the survey results, 94.5 percent of the survey participants did not suffer from any kind of sickness during the artisanal and small-scale mining activity, the rest 5.5 percent suffer from sickness.

The 35.7 percent of the persons suffered from backache, 25.7 percent from respiratory system diseases, 9.5 percent from digestion diseases, 7.5 percent from cardiovascular diseases, 6.6 percent from bone and muscle structure and connective tissue diseases, 3.9 percent from skin and subcutaneous cellulose diseases, 3.0 percent from nervous system diseases, and the rest 8.0 percent suffered from other type of diseases.

Figure 21. Diseases among artisanal and small-scale miners, by type of diseases, in percentage



As a conclusion, most of the artisanal and small-scale miners suffered from diseases of respiratory system, backache and coxitis, which correlate with the nature of the artisanal mining work.

Table 28. Diseases among ASM, by type of diseases and working years, in percentage

Type of diseases	TOTAL	0-1	2-3	4-5	6-7	8-9	10-11	12+
Diseases of the respiratory system	100.0	5.7	22.3	16.6	10.2	8.9	12.7	23.6
Backache	100.0	6.4	20.2	16.1	11.0	12.8	14.2	19.3
Diseases of the digestive system	100.0	3.4	15.5	22.4	10.3	17.2	12.1	19.0
Diseases of the cardiovascular system	100.0	-	17.0	10.6	6.4	14.9	27.7	23.4
Diseases of the skin and subcutaneous tissue	100.0	8.3	12.5	16.7	12.5	16.7	16.7	16.7
Diseases of the musculoskeletal system and connective tissue	100.0	10.0	12.5	10.0	17.5	10.0	15.0	25.0
Diseases of the genitourinary system	100.0	-	12.5	18.8	12.5	18.8	12.5	25.0
Injury, poisoning and certain other consequences of external cause	100.0	-	14.3	7.1	14.3	28.6	14.3	21.4
Diseases of the nervous system and sense organs	100.0	11.8	41.2	-	5.9	5.9	23.5	11.8
Certain infectious and parasitic diseases	100.0	-	20.0	20.0	10.0	20.0	20.0	10.0
Other	100.0	11.1	11.1	22.2	22.2	11.1	-	22.2

The table above shows the diseases among the artisanal and small-scale miners by the years worked in ASM. 22.3 percent of the artisanal and small-scale miners with respiratory system diseases have worked in ASM for 2-3 years, 16.6 percent worked for 4-5 years, whereas the 20.2 percent of the patients with backaches worked for 2-3 years and 19.3 percent worked for 12 and more years.

The 22.4 percent of the artisanal and small-scale miners with digestion diseases worked for 4-5 years, 15.5 percent for 2-3 years, and 27.7 percent of the artisanal and small-scale miners with cardiovascular diseases worked for 10-11 years, 14.9 percent worked for 8-9 years, and 25.0 percent of the artisanal and small-scale miners with genitourinary diseases worked for 12 and more years, 18.8 percent for 4-5 years.

In addition, 28.6 percent of the artisanal and small-scale miners with injuries, intoxication and other diseases worked for 8-9 years and 21.4 percent worked for 12 and more years. Also, 41.2 percent of the artisanal and small-scale miners with nervous system diseases worked for 2-3 years and 23.5 percent worked for 10-11 years, while 20.0 percent of the artisanal and small-scale miners with infectious diseases worked for 2 and more years.

Table 29. Diseases among ASM, by type of diseases and region, in percentage

Type of diseases	TOTAL	West region	Khangai region	Central region	East region	Ulaanbaatar
Diseases of the respiratory system	100.0	29.3	28.7	34.4	4.5	3.2
Coxitis (backache)	100.0	26.6	24.8	39.4	4.1	5.0
Diseases of the digestive system	100.0	48.3	27.6	24.1	-	-
Diseases of the cardiovascular system	100.0	34.0	36.2	29.8	-	-
Diseases of the skin and subcutaneous tissue	100.0	25.0	54.2	12.5	-	8.3
Diseases of the musculoskeletal system and connective tissue	100.0	15.0	35.0	37.5	-	12.5
Diseases of the genitourinary system	100.0	37.5	50.0	12.5	-	-
Injury, poisoning and other illness caused by external factors	100.0	7.1	64.3	21.4	-	7.1
Diseases of the nervous system	100.0	52.9	29.4	11.8	-	5.9
Other	100.0	21.1	47.4	31.6	-	-

The artisanal and small-scale miners were asked about access to medical services. 2672 artisanal and small-scale miners or 38.5 percent of total 6948 answered that it is possible to get medical help from the soum and district hospitals.

The farthest hospital is located in 350 km and the nearest hospital is located in 1 km from ASM sites. The average distance from the ASM site to a hospital is 33.8 km by national average.

Table 30. Distance of soum and district hospitals from ASM sites, by km

Region, aimag and the capital city	Nearest distance /km/	Farthest distance /km/	Average distance /km/
National average	1.0	350.0	33.8
Western region	2.0	300.0	40.2
Bayan-Ulgii	2.0	60.0	16.2
Gobi-Altai	4.0	285.0	34.7
Zavkhan	7.0	300.0	40.6
Uvs	2.0	190.0	39.2
Khovd	2.0	200.0	51.9
Khangai region	2.0	230.0	41.6
Arkhangai	8.0	75.0	63.7
Bayankhongor	9.0	180.0	41.1
Bulgan	10.0	115.0	61.9
Uvurkhangai	2.0	230.0	26.5
Khuvsgul	10.0	120.0	49.5
Central region	1.0	350.0	33.6
Dornogobi	4.0	120.0	33.0
Dundgobi	9.0	50.0	22.7
Umnugobi	2.0	350.0	67.0
Selenge	1.0	300.0	25.0
Tuv	2.0	60.0	13.6
Eastern region	1.0	92.0	27.3
Khentii	1.0	70.0	19.4
Ulaanbaatar	2.0	45.0	4.3

The table above shows the distance of hospitals from the ASM site, by regions. According to the table, the farthest hospital is in Zavkhan aimag (300 km) and the nearest hospital is in Bayan-Ulgii, Uvs and Khovd aimags (2 km), in the Western region. For Khangai region, the farthest hospital (230 km) and the nearest hospital (2 km) are both in Uvurkhangai aimag. The farthest hospital in the Central region is in Umnugobi aimag (350 km), and the nearest hospital is in Selenge aimag (1 km).

The farthest hospital in Eastern region is in Khentii aimag (70 km), while the nearest hospital is also in Khentii aimag (1 km). As for the Ulaanbaatar's artisanal and small-scale miners, the farthest hospital is in 45 kilometers, and the closest is in 2 km.



CONTRIBUTIONS TO LOCAL SOCIAL DEVELOPMENT

The 71.6 percent of total 5998 artisanal small-scale mining operators answered that their life have improved since they started working in ASM.

PART SEVEN. CONTRIBUTIONS TO LOCAL SOCIAL DEVELOPMENT

This part discusses about the enrolment of the artisanal and small-scale miners in social and health insurance in 2016, capturing the livelihood changes occurred as a result of working in the artisanal and small-scale mining, artisanal miner's contributions to soum, district and local development, assistance and support received from the government and non-government organizations.

7.1 ENROLLMENT OF ARTISANAL AND SMALL-SCALE MINERS IN HEALTH AND SOCIAL INSURANCE

51.4 percent of surveyed artisanal mining operators answered that they enrolled in health and social insurance in 2016. In overlapping numbers, 2985 persons or 96.9 percent have enrolled in health insurance and 1744 persons or 56.6 percent enrolled in social insurance.

Table 31. Enrolment of artisanal and small-scale miners in health and social insurance in 2016, by type of insurance and region, in overlapping numbers

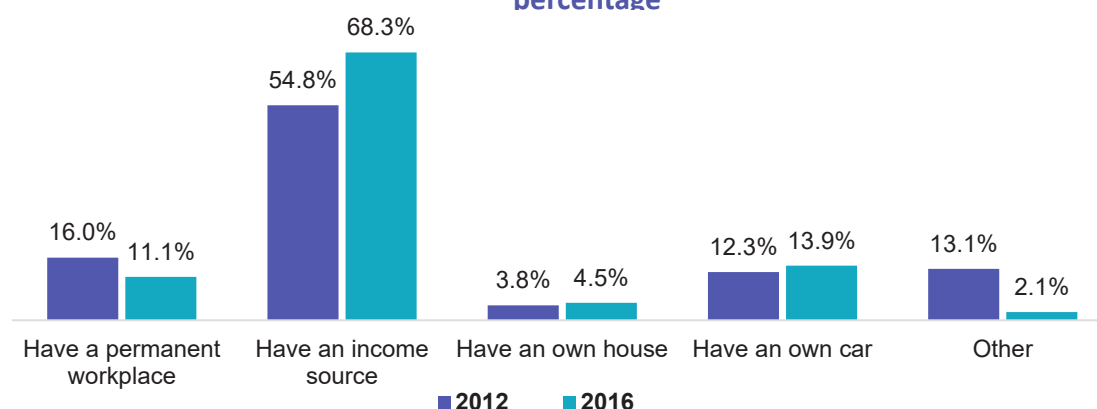
	TOTAL	Not insured	Insured		
				Social insurance	Health insurance
TOTAL	5 998	2 917	3 081	1 744	2 985
Western region	2 527	1 223	1 304	573	1 263
Khangai region	935	478	457	234	451
Central region	2 202	1 057	1 145	807	1 104
Eastern region	164	99	65	47	61
Ulaanbaatar	170	60	110	83	106

42.3 percent of artisanal mining operators enrolled in health insurance are in Western region, 37.0 percent in Central region, and 15.1 percent in Khangai region. Whereas, 46.3 percent of artisanal small-scale miners enrolled in social insurance are in Central region, 32.9 percent in Western region and 13.4 percent in Khangai region.

7.2 CHANGES IN LIVELIHOOD OF THE ARTISANAL MINING OPERATORS.

In overlapping numbers, 3753 persons have income source from ASM and 610 persons have a permanent job working in ASM. 766 persons own vehicles (cars) and 248 persons own houses/homes.

Figure 22. Number of artisanal and small-scale miners, by type of changes in livelihood, in percentage



The number of artisanal mining operators whose income increased by 13.5 points, number of artisanal mining operators who own a car increased by 1.6 points and number of persons who own a house increased by 0.7 points, whereas, the number of artisanal and small-scale miners working permanently decreased by 4.9 points and number of artisanal and small-scale miners with other type of changes in their lives decreased by 11.0 point compared with the previous survey results.

Table 32. Changes in livelihood of artisanal and small-scale miners, by region, in percentage

Region	Have permanent workplace	Have income source	Own house	Own vehicle	Other
TOTAL	100.0	100.0	100.0	100.0	100.0
Western region	37.4	38.9	14.1	25.5	43.6
Khangai region	16.7	15.5	23.8	24.8	12.8
Central region	35.1	38.3	48.8	42.6	40.2
Eastern region	4.9	3.6	1.6	1.8	-
Ulaanbaatar	5.9	3.7	11.7	5.4	3.4

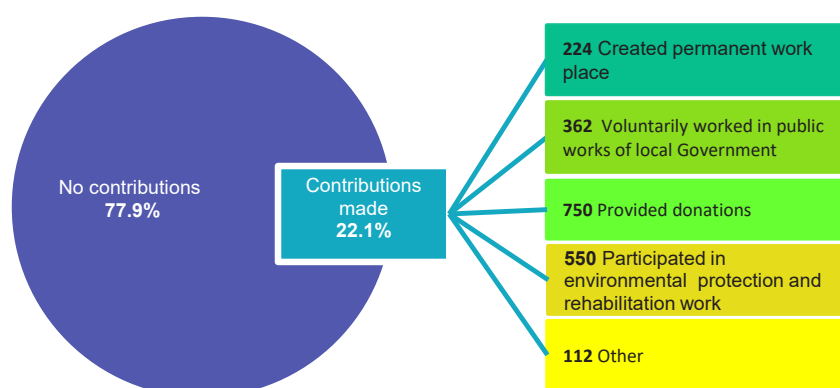
The 37.4 percent of the artisanal mining operators who work permanently in ASM are in Western region, 35.1 percent are in Central region, and 16.7 percent are in Khangai region. The 38.9 percent of the artisanal and small-scale miners whose income source is artisanal mining are in Western region, 38.3 percent in Central region, and 15.5 percent in Khangai region.

The 48.8 percent of the artisanal mining operators who own house are in Central region, 23.8 percent are in Khangai region, and 14.1 percent are in Western region. 42.6 percent of the artisanal mining operators, who own vehicle, are in Central region, 25.5 percent are in Western region, and 24.8 percent are in Khangai region

7.3 CONTRIBUTIONS TO LOCAL DEVELOPMENT

This chapter provides information on contributions made by the artisanal mining operators to local development. 77.9 percent of artisanal mining operators answered that they did not contribute to and 22.1 percent said they contribute to some extent to local development.

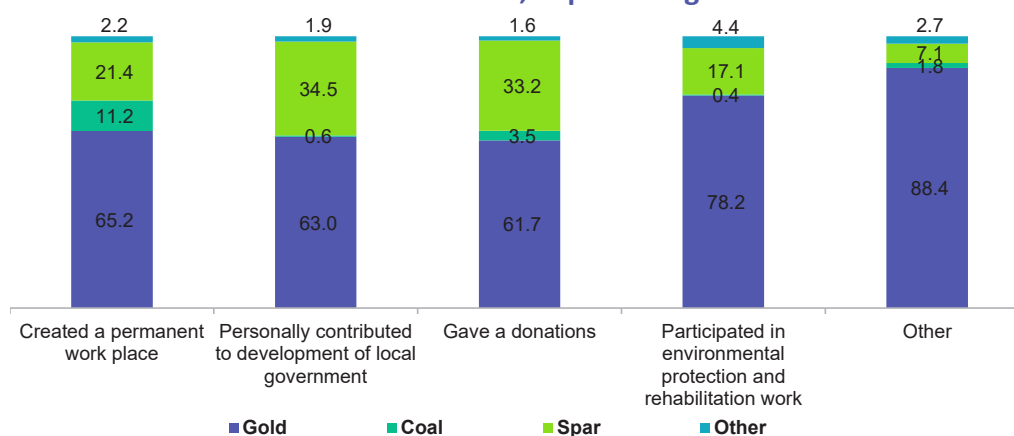
Figure 23. Contributions of artisanal mining operators to local development



Contributions to the local development by the artisanal mining operators by type of minerals, in overlapping numbers are as following: 65.2 percent of the artisanal and small-scale miners, who answered “created permanent workplaces”, are gold miners, 21.4 are fluorspar miners, 11.2 percent are coal miners and 2.2 percent are other types of minerals’ miners. 61.7 percent and 63.0 percent of the artisanal mining operators, who donated to the local development and voluntarily worked in public works of local government, are gold miners, and 33.2 and

34.5 percent are fluorspar mining operators.

Figure 24. Contributions to local development by artisanal mining operators, by type of minerals, in percentage



39.7 percent of the artisanal mining operators who answered “created a permanent work-place” are in Central region, 26.8 percent are in Western region, and 19.2 percent are in Ulaanbaatar city. The 72.4 percent of the artisanal and small-scale miners who voluntarily worked in public works of local government are in Central region, 13.5 percent are in Khangai region, and 11.3 percent are in Western region. The 46.9 percent of the artisanal and small-scale miners who donated to the local development are in Central region, 23.7 percent are in Khangai region and Ulaanbaatar city, and 21.7 percent are in Western region.

Table 33. Contributions to local development by artisanal mining operators by region, in percentage

Region	Created permanent work place	Personally contributed to development of local government	Gave donations	Participated in environmental protection and rehabilitation work	Other
TOTAL	100.0	100.0	100.0	100.0	100.0
West region	26.8	11.3	21.7	29.3	8.0
Khangai region	19.2	13.5	23.7	16.5	6.3
Central region	39.7	72.4	46.9	48.0	14.3
West region	2.7	2.2	4.1	3.6	-
Ulaanbaatar	11.6	0.6	3.5	2.5	71.4

8

ASSISTANCE AND SUPPORT. PROBLEMS AND CHALLENGES

17.2 percent of 5998 surveyed artisanal mining operators received an assistance and support from the government and NGO.

PART EIGHT. ASSISTANCE AND SUPPORT. PROBLEMS AND CHALLENGES

This part discusses about the assistance and support received by the artisanal and small-scale miners, as well as the problems and challenges faced by them and how these problems were solved.

8.1 SUPPORTS AND ASSISTANCES RECEIVED BY ARTISANAL MINING OPERATORS

In response to queries regarding the support received by artisanal mining operators in respect of their mining activity, 1032 persons or 17.2 percent of the artisanal and small-scale miners responded that they received some level of support, 4966 persons or 82.8 percent responded that did not receive any assistance or support.

The number of artisanal mining operators who received an assistance or support decreased by 0.8 points and the number of artisanal mining operators who did not receive an assistance and support increased by 0.8 points, compared to the previous survey results.

Table 34. Number of artisanal and small-scale miners who received assistance and support from government and non-governmental organizations, by region

Region	TOTAL		Received		Not received	
	2012	2016	2012	2016	2012	2016
TOTAL	8 702	5 998	1 568	1 032	7 134	4 966
Western region	2 051	2 527	206	174	1 845	2 353
Khangai region	2 633	935	564	193	2 069	742
Central region	3 071	2 202	770	538	2 301	1 664
Eastern region	326	164	25	66	301	98
Ulaanbaatar	621	170	3	61	618	109

According to the survey results, 538 artisanal mining operators from Central region, 193 from Khangai region, 174 from Western region, 66 from Eastern region and 61 from Ulaanbaatar city have been involved in governmental and non-governmental organizations' support and assistances.

According to the survey results, in overlapping numbers, 1339 persons or 56.5 percent of the artisanal mining operators, who received assistance and support from governmental and non-governmental organizations, were given trainings; 924 artisanal mining operators or 39.0 percent were provided with the professional consultations. Further, 38 artisanal mining operators or 1.6 percent received grants, 29 artisanal mining operators or 1.2 percent received a concessional loan and 9 artisanal mining operators or 0.4 percent purchased equipment at the discounted price.

Table 35. Assistance and support received by artisanal mining operators from government and non-governmental organizations, by region, in percentage

Region	TOTAL	Received training	Received professional consultations	Purchased equipment at discount price	Borrowed discounted loan	Received grant	Other
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Western region	14.1	15.3	10.6	33.3	37.9	18.4	31.3
Khangai region	15.6	13.4	17.2	22.2	10.3	44.7	31.3
Central region	60.5	58.8	65.9	33.3	44.8	36.8	25.0
Eastern region	6.0	8.0	3.6	-	-	-	6.3
Ulaanbaatar	3.8	4.6	2.7	11.1	6.9	-	6.3

65.9 percent of the artisanal mining operators, who were provided with professional consultations, are from Central region, 17.2 percent are from Khangai region, and 10.6 percent are from Western region. Whereas, the 58.8 percent of the main artisanal mining operators, who received trainings, are from Central region, 13.4 percent are from Khangai region, and 15.3 percent are from Western region. 36.8 percent of the artisanal and small-scale miners, who received grants, are from Central region and 44.7 percent are from Khangai region.

8.2 PROBLEMS AND CHALLENGES FACED BY ARTISANAL MINING OPERATORS

2350 persons or 39.2 percent of the surveyed artisanal mining operators responded that they face problems and challenges, and 3648 artisanal mining operators or 60.8 percent responded that they did not face any problems or challenges.

Location wise, 1125 artisanal mining operators who face the problems and challenges, are from Western region, 745 artisanal mining operators are from Central region, 400 artisanal mining operators are from Khangai region, 36 artisanal mining operators are from Eastern region and 44 artisanal mining operators are from Ulaanbaatar city.

Table 36. Problems and challenges faced by artisanal and small-scale miners, by type of challenges and region

Type of problems and challenges	Total	Western region	Khangai region	Central region	Eastern region	Ulaanbaatar
TOTAL	5 998	2 527	935	2 202	164	170
Number of artisanal and small-scale miners not facing problems	3 648	1 402	535	1 457	128	126
Number of artisanal and small-scale miners who face problems	2 350	1 125	400	745	36	44
Total number of problems and challenges	10 894	4 227	1 591	4 538	243	295
Legal environment is not well established	1 564	575	199	745	13	32
Mineral's output is low	2 484	1 041	369	881	119	74
ASM land is limited	2 144	824	368	881	13	58
Financial problems (access to loan)	877	323	107	365	48	34
Limited equipment, low capacity of equipment	652	255	94	280	16	7
Organizational problem	629	242	104	275	4	4
Government inspection and bureaucracy	2 146	863	287	953	22	21
Taxes	276	72	49	130	4	21
Other	122	32	14	28	4	44

According to the survey results, 1564 artisanal mining operators (in overlapping numbers) responded that the legal environment is not well established, of which 47.6 percent are from Central region, 36.8 percent are from Western region and 12.7 percent are from Khangai region.

2484 artisanal mining operators (in overlapping numbers) consider that the minerals' output is low, of which 41.9 percent are from Western region, 35.5 percent from Central region and 14.9 percent are from Khangai region. 877 persons (in overlapping numbers) responded that the financial problems or obtaining a loan was difficult, and 41.6 percent of these persons are from Central region, 36.8 percent are from Western region and 12.2 percent are from Khangai region.

Further, 652 artisanal mining operators (in overlapping numbers) responded that the low level of equipment capacity cause problems, of which 42.9 percent are from Central region, 39.1 percent are from Western region and 14.4 percent are from Khangai region. 629 persons (in overlapping numbers) stated that organizational problem cause difficulties, and 43.7 percent of these persons are from Central region, 38.5 percent from Western region and 16.5 percent from Khangai region.

2146 artisanal mining operators (in overlapping numbers) considered that inspection and bureaucracy cause problems, and 44.4 percent of these artisanal mining operators are from Central region, 40.2 percent are from Western region and 13.4 percent from Khangai region.

276 artisanal mining operators (in overlapping numbers) considered that the tax issues cause problems, of which 47.1 percent of these persons are from Central region, 26.1 percent from Western region and 17.8 percent from Khangai region.

Table 37. Problems and challenges faced by artisanal small-scale miners, by type of problems and region, in percentage

Type of problems, challenges	Total	West region	Khangai region	Central region	East region	Ulaanbaatar
TOTAL	100.0	38.8	14.6	41.7	2.2	2.7
Legal environment is not well established	100.0	36.8	12.7	47.6	0.8	2.0
Mineral's output is low	100.0	41.9	14.9	35.5	4.8	3.0
ASM land is limited	100.0	38.4	17.2	41.1	0.6	2.7
Financial problems (access to a loan)	100.0	36.8	12.2	41.6	5.5	3.9
Low capacity equipment	100.0	39.1	14.4	42.9	2.5	1.1
Organizational problem	100.0	38.5	16.5	43.7	0.6	0.6
Government inspection and bureaucracy	100.0	40.2	13.4	44.4	1.0	1.0
Taxes	100.0	26.1	17.8	47.1	1.4	7.6
Other	100.0	26.2	11.5	23.0	3.3	36.1

Considering the difficulties and problems faced by main artisanal mining operators by type of minerals, 2048 artisanal mining operators (overlapping numbers) or 22.4 of the gold miners answered that the mineral's output is low, 1853 artisanal mining operators (overlapping numbers) or 20.3 percent considered that inspection and tax burden are high and 1842 persons (overlapping numbers) or 20.2 percent mentioned that the field of extraction is limited.

240 artisanal mining operators (in overlapping numbers) or 30.6 of the fluorspar miners answered that the mineral's output is low, 123 artisanal mining operators (in overlapping numbers) or 15.7 percent mentioned that the field of extraction is limited; 85 artisanal mining operators (in overlapping numbers) or 10.8 percent considered that inspection and tax burden are high.

Table 38. Problems and challenges faced by artisanal and small-scale miners, by type of minerals, overlapping numbers

Type of problems, challenges	TOTAL	Gold	Coal	Fluorspar	Wolfram	Gemstone	Other
TOTAL	10 894	9 136	194	784	486	124	170
Legal environment is not well established	1 564	1 355	26	81	53	23	26
Mineral's output is low	2 484	2 048	21	240	114	28	33
ASM land is limited	2 144	1 842	30	123	87	28	34
Financial problems (access to a loan)	877	693	29	75	60	7	13
Low capacity equipment	652	546	4	67	24	2	9
Organizational problem	629	539	4	52	29	2	3
Government inspection, bureaucracy	2 146	1 853	24	85	107	34	43
Taxes	276	190	13	58	8	-	7
Other	122	70	43	3	4	-	2

According to the survey results, 4508 artisanal mining operators or 75.2 percent responded that they do not have any difficulties to communicate with administrative institutions, and 1490 or 24.8 percent responded that they have difficulties in their communication with administrative institutions. 890 artisanal mining operators (overlapping numbers) considered that it is difficult to communicate with the local authorities and 675 artisanal mining operators considered that

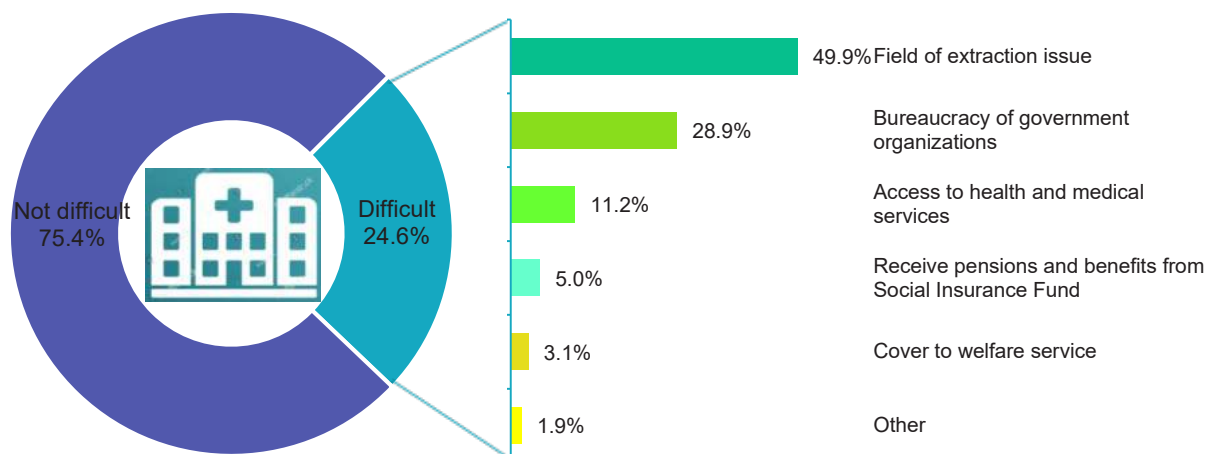
the specialized inspection agency is the agency that is difficult to communicate. 160 artisanal mining operators stated that the tax authority and 857 artisanal mining operators stated that the legal and inspection authorities are difficult to communicate.

Table 39. Institutions that artisanal mining operators find difficult to communicate, by region

Type of institutions	Total	West region	Khangai region	Central region	East region	Ulaanbaatar
TOTAL	5 998	2 527	935	2 202	164	170
Difficulties	1 490	595	172	679	4	40
No difficulties	4 508	1 932	763	1 523	160	130
Number of difficulties	3 536	1 504	468	1 478	10	76
Local authority	890	487	92	286	4	21
Specialized inspection agency	675	221	89	344	2	19
Tax authority	160	89	24	39	-	8
Legal and control authority	857	302	124	422	-	9
Mineral resources authority	197	102	29	59	2	5
Health department	181	68	13	96	-	4
Social assistance department	68	45	11	10	1	1
Social insurance department	40	21	6	9	-	4
Other	468	169	80	213	1	5

49.9 percent of the artisanal mining operators who said that it is difficult to communicate with administrative institutions, stated that these difficulties relate to the ASM land permission, 28.9 percent stated bureaucracy of government organizations; 11.2 percent stated receiving health and medical care assistance, 5.0 percent stated receiving social assistance and 3.1 percent stated that these difficulties relate to receiving of pensions and benefits from social insurance fund.

Figure 25. Type of difficulties to communicate with local authorities, by percentage



In terms of how these difficulties have been resolved by regions, 35.0 percent of the 20 issues were resolved in accordance with the laws in Western region, 30.0 percent in Central region, and 30.0 percent in Khangai region. 26 issues have been resolved by making an agreement or contract, out of which 53.8 percent were in Khangai region, 19.2 percent were in Western region, and 15.4 percent were in Central region.

Also, 38 issues have been resolved by imposing fines and penalties, out of this 65.8 percent are Central region and 18.4 percent in Western region. 78.2 percent of 55 issues have been resolved by bringing complaints to the attention of higher position officials at provincial level, these were in Western region and 9.1 percent in Khangai and Central regions, respectively.

However, the complains or inquiries of 1345 artisanal and small-scale miners have not resolved, 46.8 percent of these artisanal and small-scale miners are in Central region, 39.8 percent in Western region and 10.7 percent in Khangai region.

Table 40. Issues of artisanal and small-scale miners resolved and not resolved, by region

Status of problems solution	Total	Western region	Khangai region	Central region	Eastern region	Ulaanbaatar
Not resolved	1 345	535	144	630	2	34
Resolved	145	60	28	49	2	6
Appealed to next level organizations and officials	55	43	5	5	1	1
Complained to law enforcement agency	36	32	1	2	-	1
Negotiated with the relevant organizations	37	7	13	12	1	4
Resolved in accordance with laws and rules	20	7	6	6	-	1
Contract and agreement made	26	5	14	4	1	2
Paid fines and penalties	38	7	4	25	-	2
Provided gifts, gratuities and bribes	3	2	-	1	-	-
Other	1	-	1	-	-	-

According to the survey, 1013 artisanal and small-scale miners or 16.9 percent responded that they faced with difficulties to sell the minerals, 4985 artisanal and small-scale miners or 83.1 percent responded that they did not face difficulties to sell the minerals.

The biggest issue for artisanal and small-scale miners is that the informal mineral buyers purchase the minerals below market price. Out of 2731 difficulties (in overlapping numbers) stated by 1013 artisanal and small-scale miners, and 815 difficulties (in overlapping numbers) or 29.8 percent are purchasing minerals below market price.

592 (in overlapping numbers) artisanal and small-scale miners stated that this issue stems because of the absence of a formal mineral buyer in the local market.

Table 41. Difficulties faced to sell minerals, by type of minerals

Type of difficulties	TOTAL	Gold	Coal	Spar	Wolfram	Gemstone	Other
TOTAL	5 998	4 865	135	685	157	44	112
Number of persons who did not face difficulties	4 985	4 282	90	402	101	35	75
Number of persons who faced difficulties	1 013	583	45	283	56	9	37
Number of difficulties	2 731	1 369	120	963	162	25	92
There is no formal buyer in the local market	592	355	36	149	23	7	22
There is no local official assay unit	512	270	21	198	17	-	6
Dealers buy minerals at below market price	815	485	25	210	56	9	30
Mineral prices are not stable	535	206	26	215	51	9	28
Low quality of mineral's grade	256	43	7	185	15	-	6
Other	21	10	5	6	-	-	-

59.5 percent of gold miners, 25.8 percent of fluorspar miners and 6.9 percent of wolfram miners stated that purchasing minerals at below market price is an issue. 60.0 percent of gold artisanal and small-scale miners responded that the absence of the formal mineral buyer is an issue.

40.2 percent of fluorspar miners, 38.5 percent of gold miners and 9.5 percent of wolfram miners stated that the mineral's price fluctuation is an issue. 72.3 percent of fluorspar miners and 16.8 percent of gold miners stated that a low quality of mineral's grade is a difficult issue.

81.2 percent of the artisanal and small-scale miners identified problems related to lands for mineral extraction, and these problems haven't been solved and 18.8 percent of artisanal and small-scale miners have their land problems solved in some ways. Please see below.

88.0 percent of gold miners, 86.7 percent of coal miners, 27.3 percent of fluorspar miners, 98.1 percent of wolfram miners, and 82.1 percent of other types of minerals miners were unable to resolve their land problems.

84.7 percent of gold miners, 58.4 percent of fluorspar miners, and 50.0 percent of other types of mineral miners' land problems have been solved by entering into contract or agreement with governors of soum/ district.

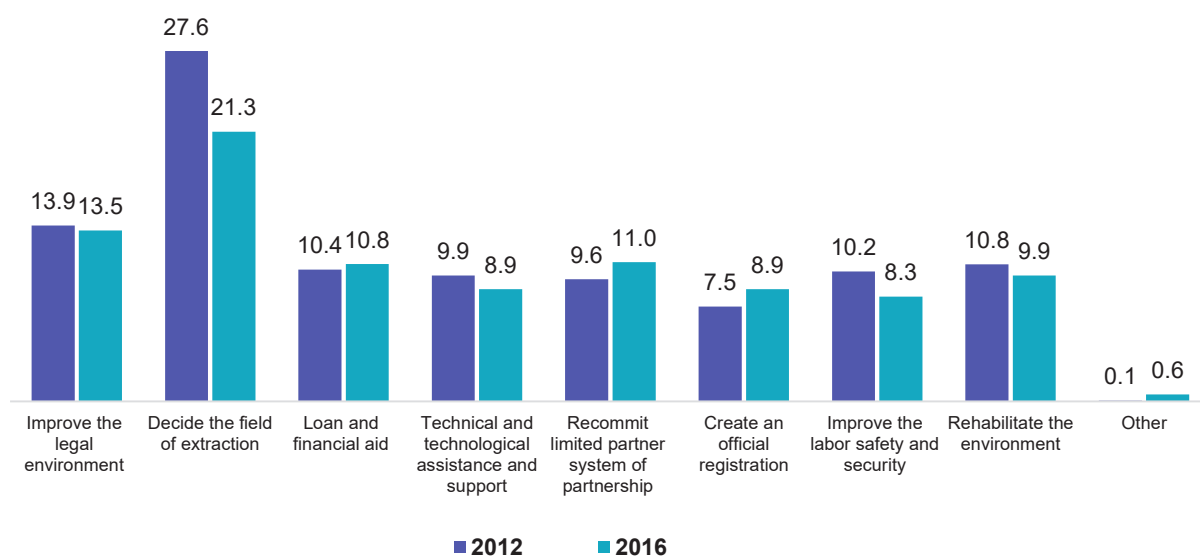
50.0 percent of coal miners' land problem has been resolved by making a verbal agreement with mining license holders. 31.9 percent of fluorspar miners, 21.4 percent of other types of mineral miners, 16.7 percent of coal miners and 3.8 percent of gold miners made a tri-party agreement with soum/district governor and mining license holder to access a mining land.

Table 42. Artisanal and small-scale miners' mining land solutions, by type of minerals

Type	TOTAL	Gold	Coal	Spar	Wolfram	Other
TOTAL	5 998	4 865	135	685	157	156
Not solved	4 869	4 283	117	187	154	128
Solved	1 129	582	18	498	3	28
Written contract with Soum/District governors	801	493	3	291	-	14
Verbal contract with Soum/District governors	12	9	-	2	1	-
Written contract with mining license holders	38	9	3	25	1	-
Verbal contract with mining license holders	31	5	9	17	-	-
Tri-party contract with Soum/District governors and mining license holders	190	22	3	159	-	6
Use the licensed enterprises' land without any contracts	50	39	-	3	1	7
Other	7	5	-	1	-	1

The main artisanal mining operators were asked that what kind of support and assistance from governmental and non-governmental organizations that they would like to obtain in order to operate their activities. 21.3 percent of them would like to resolve their mining land issue, 13.5 percent to improve the ASM legal environment, 11.0 percent to introduce responsible partnership system, 10.8 percent to receive loan and financial aid, 9.9 percent to rehabilitate the environment, 8.9 percent to get the technical and technological assistance and support, 8.9 percent to have an official registration and 8.3 percent to improve the occupational safety and health.

Figure 26. Type of support and assistance that artisanal and small-scale miners would like to receive from government and NGOs, by type and in percentage



9

TOOLS AND EQUIPMENT OF ARTISANAL MINING OPERATORS

56.3 percent of the 5998 artisanal mining operators use their own tools and equipment for mining activities.

PART NINE. TOOLS, TECHNIQUES AND EQUIPMENT OF ARTISANAL AND SMALL-SCALE MINERS

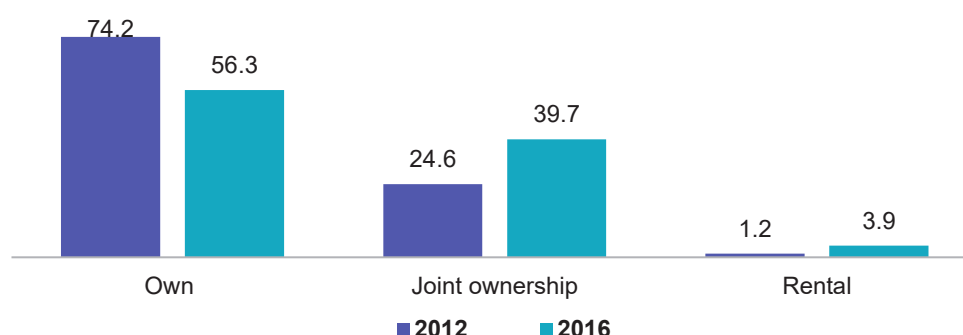
The survey questionnaire form had a special part to collect the information on types of tools, equipment and protective clothes used by artisanal and small-scale miners. Use of equipment is an important indicator of a work productivity that directly links to income of the artisanal and small-scale miners.

9.1 TOOLS AND EQUIPMENT USED BY ARTISANAL AND SMALL-SCALE MINERS

The 74.3 percent of the artisanal and small-scale miners use some kind of tools and equipment in their activities. 56.3 percent of the used equipment are their own, 39.7 percent owned jointly, and 3.9 percent are rental equipment.

Compared to the previous survey results, the share of own equipment decreased by 17.9 percent and the share of equipment owned jointly increased by 15.1 points and share of rental equipment increased by 2.7 points.

Figure 27. Number of equipment used by artisanal and small-scale miners, by type of ownership



Looking from a geographical location aspect, there are 11371 pieces of equipment in Western region, 8772 pieces of equipment in Central region, 3799 pieces of equipment in Khangai region, 1715 pieces of equipment to Ulaanbaatar city, and 611 pieces of equipment in Eastern region.

Table 43. Number of equipment used by artisanal and small-scale miners, by type of equipment and region

Region	TOTAL	Hand tools (hammer, shovel, mattock etc.)	Metal detector	Electric generator	Turbo blower or air blast	Clocked drill	Lifting equipment	Water cannon	Pump	Clocked small sized drill (compressor)	Other
TOTAL	26 268	13 606	1 458	1 950	559	2 126	1 065	1 051	501	567	3 385
Western region	11 371	6 331	685	858	126	766	294	313	236	210	1 552
Khangai region	3 799	1 842	193	265	107	244	113	169	42	107	717
Central region	8 772	4 136	548	711	214	867	480	417	157	219	1 023
Eastern region	611	290	6	47	7	66	58	62	9	10	56
Ulaanbaatar	1 715	1 007	26	69	105	183	120	90	57	21	37

Number of equipment used by artisanal and small-scale miners was 26268, a decrease by 7887 or 23.1 percent compared with the previous survey results.

51.8 percent of the equipment used by artisanal and small-scale miners are hand tools such as hammer, shovel, mattock etc., 12.9 percent are other types of tools such as sluices, buckets, trucks and mini excavators etc., 8.1 percent are clocked drills, 7.4 percent are electric generators, 5.6 percent are metal detectors, 4.1 percent are lifting equipment, 4.0 percent are water guns, 2.2 percent are clocked small sized drills, 2.1 percent are turbo blowers or air blasts, and 1.9 percent are pumps.

Table 44. Share of equipment used by artisanal and small-scale miners in total number of equipment, by type of equipment

Type of equipment	Number of equipment		Share to total	
	2012	2016	2012	2016
TOTAL	34 155	26 268	100.0	100.0
Hand tools (hammer, shovel, mattock etc.)	22 354	13 606	65.4	51.8
Metal detector	1 265	1 458	3.7	5.6
Electric generator	1 375	1 950	4.0	7.4
Turbo blower or air blast	694	559	2.0	2.1
Clocked drill	2 147	2 126	6.3	8.1
Lifting equipment	1 345	1 065	3.9	4.1
Water cannon	694	1 051	2.0	4.0
Pump	986	501	2.9	1.9
Clocked small sized drill (compressor)	697	567	2.0	2.2
Other	2 598	3 385	7.6	12.9

Compared to the previous survey results, the share of hand tools (hammer, shovel, mattock etc.) in total equipment used decreased by 13.6 points and share of pumps by 1.0 points, but share of other types of tools increased by 5.3 points, share of electric generators by 3.4 points, share of water guns by 2.0 points, share of metal detectors by 1.9 points, share of clocked drills by 1.8 points, share of clocked small sized drills and turbo blowers by 0.2 points and share of air blasts by 0.1, respectively.

Table 45. Number of equipment used by artisanal and small-scale miners, by type of equipment, region and percentage

Type of equipment	TOTAL					
		Western region	Khangai region	Central region	Eastern region	Ulaanbaatar
TOTAL	100.0	43.3	14.5	33.4	2.3	6.5
Hand tools (hammer, shovel, mattock etc.)	100.0	46.5	13.5	30.4	2.1	7.4
Metal detector	100.0	47.0	13.2	37.6	0.4	1.8
Electric generator	100.0	44.0	13.6	36.5	2.4	3.5
Turbo blower or air blast	100.0	22.5	19.1	38.3	1.3	18.8
Clocked drill	100.0	36.0	11.5	40.8	3.1	8.6
Levitation equipment	100.0	27.6	10.6	45.1	5.4	11.3
Water cannon	100.0	29.8	16.1	39.7	5.9	8.6
Pump	100.0	47.1	8.4	31.3	1.8	11.4
Clocked small sized drill (compressor)	100.0	37.0	18.9	38.6	1.8	3.7
Other	100.0	45.8	21.2	30.2	1.7	1.1

44.0-47.1 percent of the total electric generators, other types of tools, metal detectors and pumps are in Western region and 38.3-45.1 percent of the total turbo blowers or air blasts, clocked small-sized drills, water guns, clocked drills and lifting equipment are in Central region.

9.2 PROTECTIVE CLOTHING OF THE ARTISANAL AND SMALL-SCALE MINERS

In total 4330 artisanal and small-scale miners or 72.2 percent of the surveyed artisanal and small-scale miners use some kind of personal protective clothing (uniforms). Out of this, 73.7 percent of total male miners and 62.1 percent of total female miners use protective clothing.

Table 46. Number of main artisanal mining operators, by use or no use of protective clothing, and disaggregated by sex

Sex	TOTAL		Yes		No	
	2012	2016	2012	2016	2012	2016
TOTAL	7 273	5 998	2 569	4 330	4 704	1 668
Male	6193	5 206	2 250	3 838	3 943	1 368
Female	1 080	792	319	492	761	300

If compared with the previous survey results, a share of artisanal and small-scale miners who use the protective clothing increased by 36.9 percent, out of which male miners by 37.4 percent and female miners by 32.6 percent.

According to the age group of artisanal and small-scale miners who use the protective clothing, 16.7 percent aged between 35-39, 16.7 percent aged between 30-34 years old, 16.1 percent aged between 40-44 years old, 14.1 percent aged between 25-29 years old, 13.7 percent aged between 45-49 years old, 10.0 percent aged between 50-54 years old and rest 12.7 percent belong to other age.

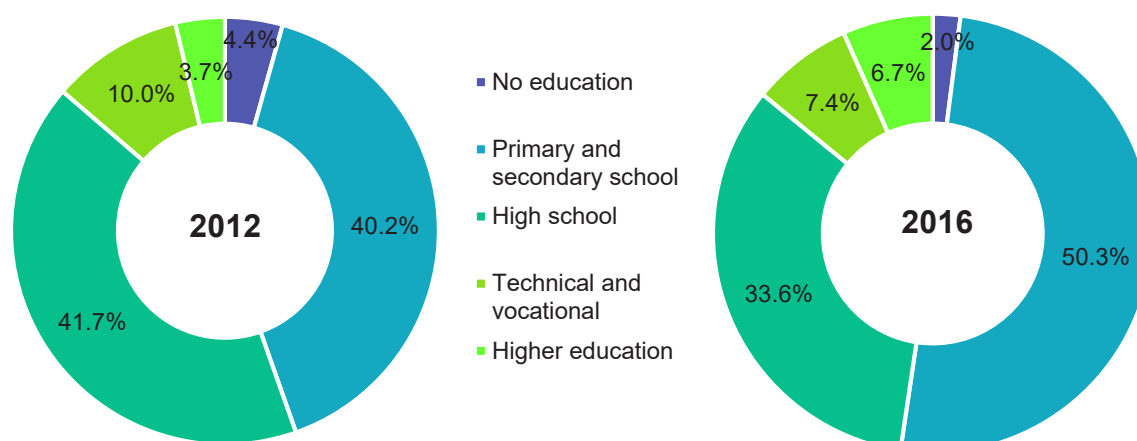
Table 47. Number of artisanal and small-scale miners using or not using protective clothing, by age group

Age group	TOTAL		Yes		No	
	2012	2016	2012	2016	2012	2016
TOTAL	7 273	5 998	2 569	4 330	4 704	1 668
10-14	6	1	1	-	5	1
15-17	61	10	14	7	47	3
18-19	110	62	42	45	68	17
20-24	895	376	362	249	533	127
25-29	1 158	863	416	610	742	253
30-34	1 238	983	425	721	813	262
35-39	1 168	987	394	724	774	263
40-44	1 033	964	367	697	666	267
45-49	848	787	304	593	544	194
50-54	490	586	163	431	327	155
55-59	200	260	55	169	145	91
60-64	50	91	20	60	30	31
65-69	14	23	6	20	8	3
70 +	2	5	-	4	2	1

Compared to the previous survey results, the share of using protective clothing has decreased for artisanal and small-scale miners up to 29 years old and share of use of protective clothing has increased for artisanal and small-scale miners 30 and more years old.

According to the level of education of artisanal small-scale miners, who use protective clothing, the share of uneducated persons is 2.0 percent, share of persons with primary and secondary education is 50.3 percent, share of persons with high education is 33.6 percent, share of persons with technical and vocational education is 7.4 percent and share of persons with higher education is 6.7 percent.

Figure 28. Number of artisanal and small-scale miners who use protective clothing, by level of education



Out of total artisanal and small-scale miners who use protective clothing, 526 artisanal and small-scale miners who use helmets are in Western region, 207 artisanal and small-scale miners are in Khangai region, 395 artisanal and small-scale miners in Central region, 67 artisanal and small-scale miners in Eastern region and 75 artisanal and small-scale miners in Ulaanbaatar city; out of the total miners who use the eye protective glasses, 852 persons are in Western region, 244 artisanal and small-scale miners in Khangai region, 502 artisanal and small-scale miners in Central region, 44 artisanal and small-scale miners in Eastern region and 29 artisanal and small-scale miners in Ulaanbaatar city.

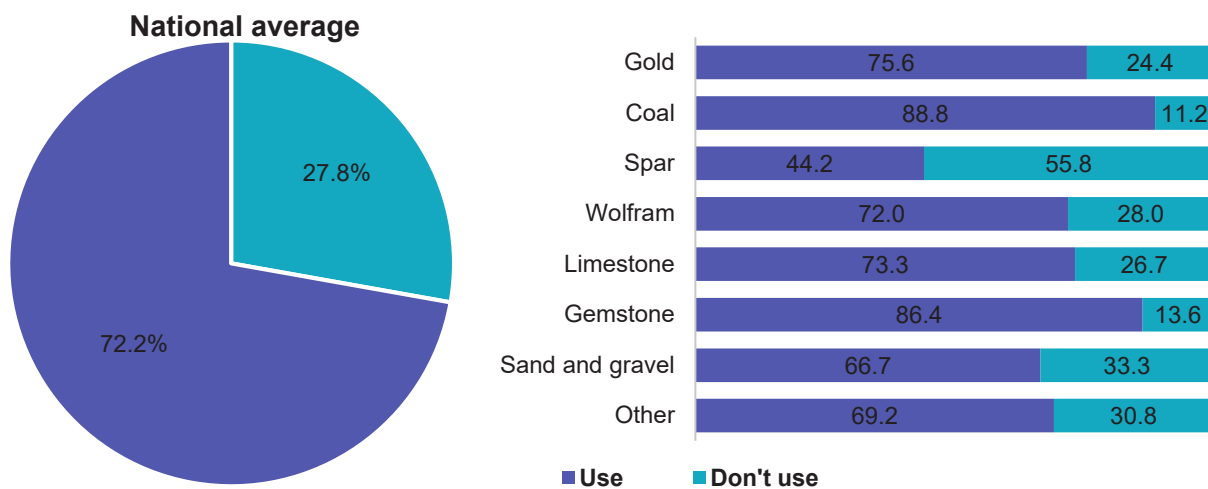
Table 48. Protective clothing (uniforms) used by artisanal and small-scale miners, by type and region (in overlapping numbers)

Region	TOTAL	Helmets	Shoes	Masks	Vests	Gloves	Eyeglasses	Earmuffs	Lights	Other
TOTAL	15 652	1 270	1 984	2 168	652	4 083	1 671	624	3 182	18
Western region	7 037	526	816	1 030	221	1 899	852	260	1 429	4
Khangai region	2 308	207	278	355	154	538	244	108	416	8
Central region	5 236	395	726	619	232	1 377	502	219	1 163	3
Eastern region	558	67	95	84	24	113	44	34	94	3
Ulaanbaatar	513	75	69	80	21	156	29	3	80	-

The most commonly used protective items are gloves (4083 pairs), lights (3182 pieces), masks (2168 pieces), shoes (1984 pairs), eyeglasses (1671 pieces) and helmets (1270 pieces).

According to the previous survey results, 35.3 percent of total artisanal and small-scale miners used some kind of protective clothing, and according to current survey 2016, this number reached 72.2 percent. 88.8 percent of coal miners, 86.4 percent of gemstone miners, 75.6 percent of gold miners, 73.3 percent of fluorspar miners, and 72.0 percent of wolfram miners use protective clothing (uniforms). Compared to the previous survey results, the share of use of protective clothing of coal miners increased by 2.7 points, of gemstone miners by 70.6 points, of gold miners by 46.4 points, limestone miners by 40.0 points, and wolfram miners by 62.2 points.

Figure 29. Number of artisanal and small-scale miners, by use of protective clothing, by type of minerals in percentage



10

INFORMATION OF THE ARTISANAL AND SMALL-SCALE MINERS OPERATIONS

Artisanal mining operators earned 22071.5 million togrogs from extraction and spent 8548.9 million togrogs.

PART TEN. INFORMATION ON ARTISANAL AND SMALL-SCALE MINING OPERATIONS

Artisanal and small-scale miner's survey covered eight types of minerals: gold, coal, fluorspar, wolfram, limestone, gemstone, sand and gravels and included other types of minerals extracted.

10.1 THE ARTISANAL AND SMALL-SCALE MINERS' ACTIVITIES

5108 persons or 73.5 percent of total 6948 surveyed artisanal and small-scale miners including utility workers are gold miners, 754 persons or 10.9 percent are fluorspar miners, 730 persons or 10.5 percent are coal miners, 172 persons or 2.5 percent are wolfram miners, 48 persons or 0.7 percent are gemstone miners, 17 persons or 0.2 percent are limestone miners, 7 persons or 0.1 percent are sand and gravel miners and the rest are miners who extract other types of minerals.

Table 49. Number of artisanal and small-scale miners, by region and type of minerals

Region	TOTAL	Gold	Coal	Spar	Wolfram	Limestone	Gemstone	Sand and gravel	Other
TOTAL	6 948	5 108	730	754	172	17	48	7	112
Western region	2 614	2 274	57	-	171	17	20	5	70
Khangai region	963	963	-	-	-	-	-	-	-
Central region	2 440	1 721	-	652	1	-	28	1	37
Eastern region	164	56	-	102	-	-	-	1	5
Ulaanbaatar	767	94	673	-	-	-	-	-	-

In overlapping numbers, 4761 persons or 62.4 percent of total artisanal and small-scale miners operate in open-pit mining and 2870 persons or 37.6 percent operate in underground mining.

The 78.4 percent of the artisanal and small-scale miners operating in open-pit mining are gold miners, 14.6 percent are fluorspar miners, 2.4 are wolfram miners, 2.3 are other types of minerals miners, 1.1 are coal miners, 0.7 are gemstone miners, 0.4 are limestone miners, and 0.1 are sand and gravel miners.

68.9 percent of the artisanal and small-scale miners operating in underground mining are gold miners, 23.7 percent are coal miners, 3.0 are wolfram miners, 2.4 percent are fluorspar miners, 1.4 are gemstone miners, 0.6 are other types of minerals miners, and 0.1 are sand and gravel miners.

Table 50. Number of artisanal and small-scale miners, by type of minerals and mining, in overlapping numbers

Type of minerals	TOTAL	Open pit	%	Underground pit	%
TOTAL	7 631	4 761	100.0	2 870	100.0
Gold	5 708	3 732	78.4	1 976	68.9
Coal	730	50	1.1	680	23.7
Spar	765	697	14.6	68	2.4
Wolfram	203	116	2.4	87	3.0
Limestone	17	17	0.4	-	-
Gemstone	72	32	0.7	40	1.4
Sand and gravel	8	6	0.1	2	0.1
Other	128	111	2.3	17	0.6

10.2 LAND USED BY ARTISANAL AND SMALL-SCALE MINERS

This section covers the information about the ASM land permission, size of land, land degradation, and rehabilitation of the ASM sites.

According to the survey results, number of artisanal and small-scale miners operating in permitted lands was 1063 persons or 17.7 percent, a decrease by 4.9 points from the previous survey results.

Table 51. Number of main artisanal mining operators, by type of field and region

Region	TOTAL		Number of persons working in not permitted field		Number of persons working in permitted field	
	2012	2016	2012	2016	2012	2016
TOTAL	7 273	5 998	5 625	4 935	1 648	1 063
Western region	1 982	2 527	1 523	2 139	459	388
Khangai region	2 183	935	1 936	731	247	204
Central region	2 236	2 202	1 914	1 886	322	316
Eastern region	251	164	163	98	88	66
Ulaanbaatar	621	170	89	81	532	89

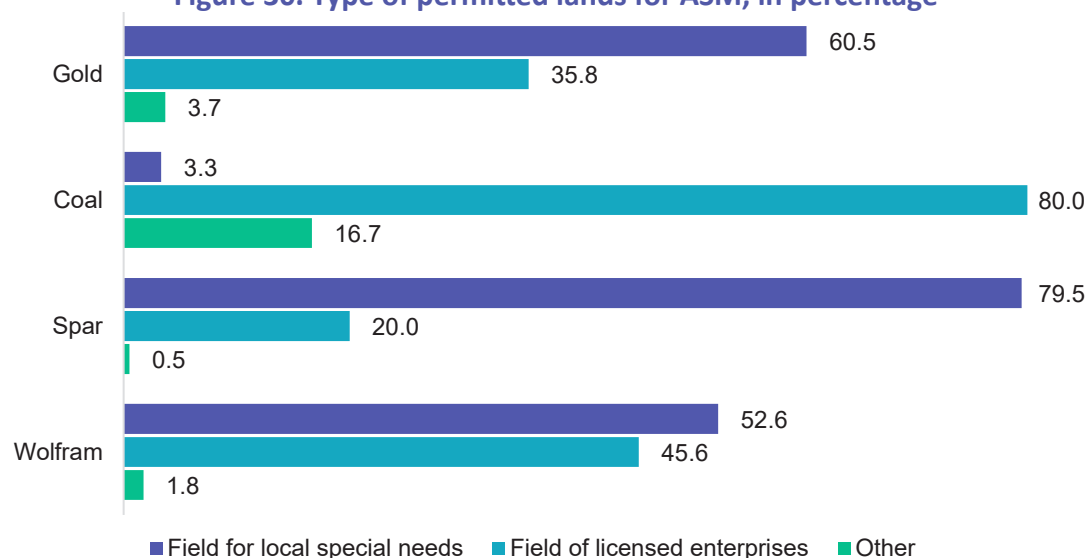
36.5 percent of the artisanal and small-scale miners in the Western region, 19.2 percent in the Khangai region, 29.7 percent in the Central region, 6.2 percent in the Eastern region, and 8.4 percent in Ulaanbaatar city operate in permitted lands. Compared with the previous survey results, number of artisanal and small-scale miners in Ulaanbaatar city decreased by 23.9 points, and number of artisanal and small-scale miners in Central region increased by 10.2 points, in Western region by 8.6 points, in Khangai region by 4.2 points and in Eastern region by 0.9 points.

Table 52. Number of artisanal and small-scale miners who work in permitted lands, by type of minerals and fields

Region	Number of artisanal and small-scale miners working on permitted lands		Land for local special needs		Exploitation licenses land		Other	
	2012	2016	2012	2016	2012	2016	2012	2016
TOTAL	1 648	1 063	692	650	930	373	26	40
Gold	744	731	480	442	261	262	3	27
Coal	543	30	33	1	493	24	17	5
Fluorspar	176	195	150	155	20	39	6	1
Wolfram	153	57	3	30	150	26	-	1
Limestone	-	14	-	12	-	2	-	-
Gemstone	5	1	-	-	5	1	-	-
Sand and gravel	12	3	12	2	-	-	-	1
Other	15	32	14	8	1	19	-	5

The 68.8 percent of the artisanal and small-scale miners working on the permitted lands are gold artisanal and small-scale miners, 18.3 percent are fluorspar artisanal and small-scale miners, 5.4 percent are wolfram artisanal and small-scale miners, 2.8 percent are coal artisanal and small-scale miners and the rest are limestone, gemstone and other type of minerals' artisanal and small-scale miners.

Figure 30. Type of permitted lands for ASM, in percentage



The 60.5 percent of the permitted lands used by the gold artisanal and small-scale miners are lands allocated for local special needs, 35.8 percent are lands under mining licenses, and the rest 3.7 percent are lands with other types of permissions. The 80.0 percent of the permitted lands used by the coal miners are lands under mining licenses of entities, 16.7 percent are lands with other types of permissions and rest 3.3 percent are lands for local special needs.

The 79.5 percent of the permitted lands used by the fluorspar miners are land for local special needs, 20.0 percent are land under mining licenses of entities and rest 0.5 percent are land with other types of permissions. 52.6 percent of the permitted fields used by the wolfram miners are land for local special needs, 45.6 percent are lands of licensed companies and rest 1.8 percent are land with other types of permissions.

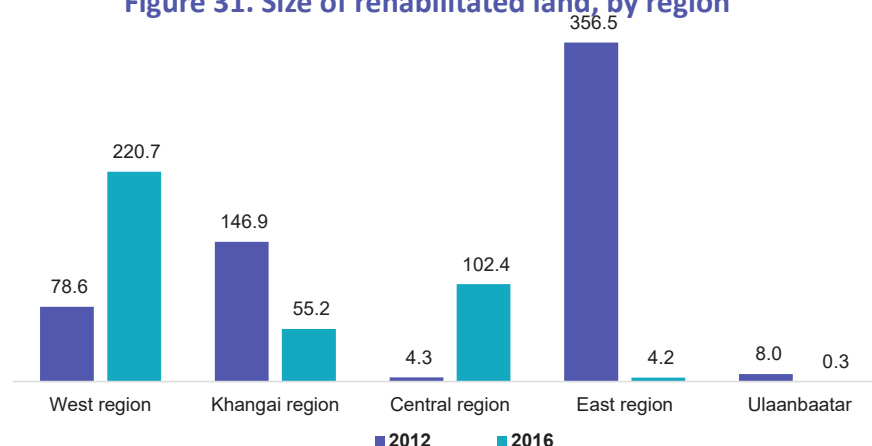
Table 53. Size of land used for ASM, size of degraded land and size of rehabilitated land, by region

Region	Size of used land		Size of damaged land since the extraction		Size of rehabilitated land	
	2012	2016	2012	2016	2012	2016
TOTAL	8 319.2	3 701.7	8 288.0	3 228.4	594.3	382.8
Western region	2 871.3	499.5	4 741.0	583.9	78.6	220.7
Khangai region	1 584.8	924.7	808.8	886.0	146.9	55.2
Central region	2 113.2	1 276.3	1 217.0	801.0	4.3	102.4
Eastern region	558.9	110.4	521.2	66.7	356.5	4.2
Ulaanbaatar	1 191.0	890.8	1 000.0	890.8	8.0	0.3

By 2016, in total 3701.7 hectare of lands are used for the of artisanal and small-scale mining activity. Out of this, 499.5 hectare or 13.5 percent are in Western region, 924.7 hectare or 25.0 percent are in Khangai region, 1276.3 hectare or 34.5 percent are to Central region, 110.4 hectare or 3.0 percent are in Eastern region, and 890.8 hectare or 24.1 percent are in Ulaanbaatar city.

In total 3228.4 hectare of lands were degraded by artisanal mining activity. Out of this, 583.9 hectares or 18.1 percent are in Western region, 886.0 hectare or 27.4 percent are in Khangai region, 801.0 hectare or 24.8 percent are in Central region, 66.7 hectare or 2.1 percent are in Eastern region, and 890.8 hectare or 27.6 percent are in Ulaanbaatar city.

Figure 31. Size of rehabilitated land, by region



A size of rehabilitated land reached 102.4 and 220.7 hectare in Central and Western regions and increased by 98.1 and 142.1 hectare, respectively, compared with the previous survey results. The size of rehabilitated land in Ulaanbaatar was 0.3 hectare, which means a decrease by 7.7 hectare. The size of rehabilitated land reached 55.2 and 4.2 hectare in Khangai and Eastern regions respectively, which means a decrease by 91.7 and 352.4 hectares, respectively. The size of rehabilitated land equals to 11.9 percent of the land used for artisanal mining.

Table 54. Amount of minerals sold, by type of minerals

Type of minerals	Measurement unit	2012	2016
Gold	kg	354.6	212.0
Coal	ton	141 970.6	159 025.4
Spar	ton	38 482.7	20 818.3
Wolfram	ton	108.3	161.1
Limestone	ton	66.6	69.8
Gemstone	ton	14.7	27.3

According to the survey, the main artisanal mining operators extracted total 212.0 kg of gold, 159.0 thousand tons of coal, 20.8 thousand tons of fluorspar, 161.1 ton of wolfram, 69.8 ton of limestone, and 27.3 ton of gemstone. Compared with the previous survey results, the extraction of gold decreased by 142.6 kg or 40.2 percent, and fluorspar by 17.6 thousand tons or 45.9 percent, while, the extraction of coal increased by 17.0 thousand tons or 12.0 percent, wolfram by 52.8 tons or 48.8 percent, limestone by 3.2 tons or 4.8 percent, gemstone by 12.6 tons or 85.7 percent.

Table 55. Main buyers of minerals extracted by artisanal and small-scale miners, by region, in percentage

Region	Entities	Processing plants	Individuals	Bank of Mongolia	Other
TOTAL	100.0	100.0	100.0	100.0	100.0
West region	28.4	14.4	45.9	20.0	35.3
Khangai region	1.0	34.8	15.1	33.3	17.6
Central region	61.6	50.7	33.8	46.7	-
East region	6.6	-	1.7	-	47.1
Ulaanbaatar	2.4	-	3.4	-	-

Main artisanal mining operators sold 91.2 percent of the extracted minerals to individuals, 4.9 percent to private firms, 3.4 percent to processing plants and 0.3 percent to Bank of Mongolia.

Gold mining: 71.5 percent of total 5108 persons involved in the gold mining activity are the individual artisanal and small-scale miners, 23.8 percent are the leaders/members of the partnership/cooperative and the rest 4.8 percent are the family members and utility workers.

In 2016, artisanal gold miners, who participated in the survey, extracted 212.0 kg of gold and sold 1 gram of gold at 68.1 thousand togrogs on average.

Table 56. Number of gold miners, amount of extracted gold and average price, by region

Region	Number of gold miners		Amount of extracted gold, kg		Average price of extracted 1 gram of gold, thousand togrogs	
	2012	2016	2012	2016	2012	2016
Total	10 458	5 108	354.6	212.0	52.9	68.1
West region	2 946	2 274	71.7	62.5	52.4	67.7
Khangai region	3 899	963	139.6	48.9	56.3	64.5
Central region	3 557	1 721	141.9	97.1	52.6	70.3
East region	56	56	1.4	0.9	61.4	54.8
Ulaanbaatar	-	94	-	2.7	-	63.9

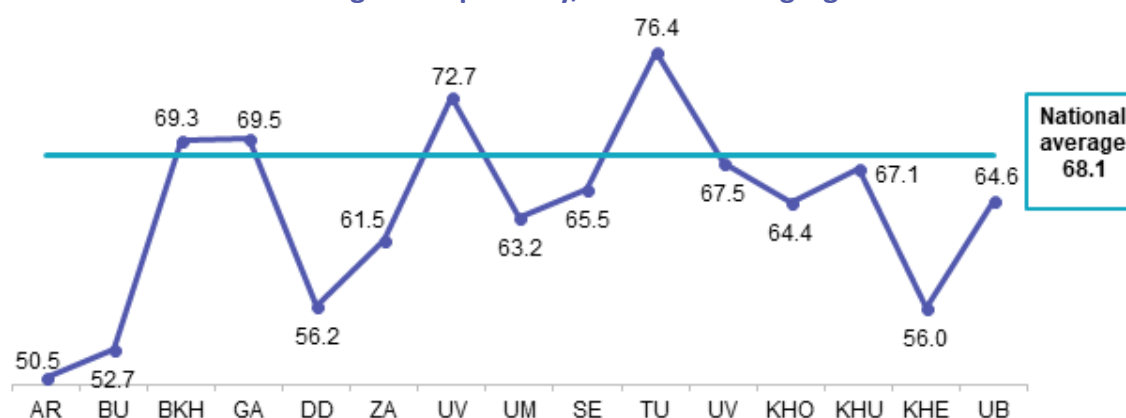
44.5 percent or 2274 artisanal gold miners are in Western region, 1721 artisanal gold miners or 33.7 percent are in Central region, 963 artisanal gold miners or 18.9 percent are in Khangai region, and 94 artisanal gold miners or 1.8 percent are in Ulaanbaatar city, 56 artisanal gold miners or 1.1 percent are in Eastern region.

19.7 percent of the surveyed artisanal gold miners are in Gobi-Altai aimag, 12.5 percent are in Umnugobi aimag, 12.1 percent are in Selenge aimag, 11.3 percent are in Khovd aimag, 10.8 percent are in Bayankhongor aimag, 9.2 percent are in Tuv aimag, 7.2 percent are in Uvs aimag, 6.3 percent are in Zavkhan aimag, and rest of them are in Uvurkhangai, Arkhangai, Khuvsgul, Dornod, Khentii, Bulgan and Ulaanbaatar city.

Compared with the national average, an average price of the gold sold by main artisanal mining operators was lower by 17.6 thousand togrogs in Arkhangai aimag, by 15.4 thousand togrogs in Bulgan aimag, by 12.1 thousand togrogs in Khentii aimag, by 11.9 thousand togrogs in Dornod aimag, by 6.6 thousand togrogs in Zavkhan aimag, by 4.9 thousand togrogs in Umnugobi aimag, by 3.7 thousand togrogs in Khovd aimag, by 3.5 thousand togrogs in Ulaanbaatar city, by 2.6 thousand togrogs in Selenge aimag, by 1.0 thousand togrogs in Khuvsgul aimag, by 0.6 thousand togrogs in Uvs aimag.

However, the price was higher by 8.3 thousand togrogs in Tuv aimag, by 4.6 thousand togrogs in Uvurkhangai aimag, by 1.4 thousand togrogs in Gobi-Altai aimag and by 1.2 thousand togrogs in Bayankhongor aimag.

Figure 32. Average price of 1 gram of gold, sold by main artisanal mining operators, by aimag and capital city, in thousand togrogs



Coal mining: 81.6 percent of total 730 artisanal coal miners are the unpaid family members and utility workers and 18.2 percent are individual artisanal coal miners.

The 92.2 percent of the surveyed artisanal coal miners are in Ulaanbaatar city, 4.8 percent are in Uvs aimag, and 3.0 percent are in Gobi-Altai aimag.

Table 57. Number of coal miners, amount of extracted coal and average price, by aimag and capital city

Aimag	Number of coal miners		Amount of extracted coal, thous. tons		Average price of extracted 1 ton of coal, thousand togrogs	
	2012	2016	2012	2016	2012	2016
TOTAL	1 368	730	142.0	159.0	22.0	24.0
Bayan-Ulgii	5	-	0.1	-	82.2	-
Gobi-Altai	29	22	0.9	0.8	35.3	83.3
Uvs	74	35	0.8	0.7	59.9	43.4
Ulaanbaatar	1 260	673	140.2	157.5	21.7	23.6

In 2016, surveyed artisanal coal miners extracted 159.0 thousand tons of coal which is an increase by 12.0 percent or 17.0 thousand tons compared with the previous survey results.

In 2016, one ton of coal was sold for 24.0 thousand togrogs on average which means an increase by 2.0 thousand togrogs compared with the previous survey results.

Fluorspar mining: 78.0 percent of total 754 artisanal fluorspar miners are the leaders/members of the partnership/cooperative, 13.0 percent are the individual artisanal fluorspar miners, and rest 9.0 percent are family members and utility workers.

69.1 percent or 521 artisanal fluorspar miners are in Dundgobi aimag, 13.5 percent or 102 artisanal fluorspar miners are in Khentii aimag, 10.2 percent or 77 artisanal fluorspar miners are in Dornogobi aimag and 7.2 percent or 54 artisanal fluorspar miners are in Gobisumber aimag.

Table 58. Number of fluorspar miners, amount of extracted fluorspar and average price, by aimag

Aimag	Number of fluorspar miners		Amount of extracted spar, thous. tons		Average price of extracted 1 ton of spar, thousand togrogs	
	2012	2016	2012	2016	2012	2016
TOTAL	1 010	754	38.5	20.8	54.0	59.4
Gobisumber	52	54	-	-	-	-
Dornogobi	328	77	21.4	5.8	46.4	54.7
Dundgobi	406	521	8.0	8.7	63.7	60.8
Khentii	224	102	9.1	6.3	63.4	61.7

In 2016, surveyed artisanal fluorspar miners extracted 20.8 thousand tons of fluorspar, which compared to previous survey results, is a decrease by 46.0 percent or 17.7 thousand tons.

In 2016, one ton of fluorspar was sold at 59.4 thousand togrogs on average and it increased by 5.4 thousand togrogs compared with the previous survey results.

Wolfram mining: 79.7 percent of total 171 artisanal and small-scale miners involved in the wolfram mining activity are individual miners, 11.6 percent are the leaders/members of the partnership/cooperative and the rest 8.7 percent are the family members and utility workers.

The 72.5 percent of the artisanal wolfram miners are in Khovd aimag and 27.5 percent are in Bayan-Ulgii aimag.

Table 59. Number of wolfram artisanal and small-scale miners, amount of extracted wolfram and average price, by aimag

Aimag	Number of wolfram miners		Amount of extracted wolfram, ton		Average price of extracted 1 kg of wolfram, thousand togrogs	
	2012	2016	2012	2016	2012	2016
Total	305	171	108.3	161.1	9.3	12.0
Bayan-Ulgii	213	47	95.0	29.2	9.7	13.3
Khovd	57	124	10.4	132.9	6.4	11.8
Sukhbaatar	35	-	2.8	-	5.9	-

In 2016, surveyed wolfram artisanal and small-scale miners extracted 161.1 tons of wolfram. This is an increase by 48.8 percent or 52.8 tons compared to previous survey results. In 2016, one kilogram of wolfram was sold for 12.0 thousand togrogs on average and it is an increase by 2.7 thousand togrogs compared with the previous survey results.

Other types of minerals mined: 184 artisanal and small-scale miners or 2.6 percent of total 6948 surveyed artisanal and small-scale miners including utility workers, mine limestone, gemstone, sand and gravel and other types of minerals.

Table 60. Number miners of artisanal and small-scale miners involved in other types of minerals, by aimag

Aimag	Total		Limestone		Gemstone		Other	
	number	percent	number	percent	number	percent	number	percent
Total	184	100.0	17	100.0	48	100.0	119	100.0
Bayan-Ulgii	59	32.1	17	100.0	-	-	42	35.3
Zavkhan	14	7.6	-	-	-	-	14	11.8
Uvs	17	9.2	-	-	-	-	17	14.3
Khovd	22	12.0	-	-	20	41.7	2	1.7
Dornogobi	10	5.4	-	-	-	-	10	8.4
Umnugobi	56	30.4	-	-	28	58.3	28	23.5
Dornod	6	3.3	-	-	-	-	6	5.0

In 2016, surveyed artisanal and small-scale miners including utility workers, extracted 69.8 tons of limestone and sold one ton of limestone for 558.7 thousand togrogs; 27.3 tons of gemstone and sold one kilogram of gemstone for 6.9 thousand togrogs on average.

10.3 INCOME AND EXPENDITURE OF THE ARTISANAL AND SMALL-SCALE MINERS

In 2016, the artisanal and small-scale miners earned in total 22071.5 million togrogs of income from the sales of the extracted minerals. Assuming the total income by region, the 6648.3 million togrogs or 30.1 percent of the total income earned by artisanal and small-scale miners in Western region, 3155.5 million togrogs or 14.3 percent in Khangai region, 7922.7 million togrogs or 35.9 percent in Central region, 448.5 million togrogs or 2.0 percent in Eastern region, and 3896.5 million togrogs or 17.7 percent in Ulaanbaatar city.

Table 61. Total income, by region, million togrogs

Region	Total income		Share in total	
	2012	2016	2012	2016
TOTAL	25 389.6	22 071.5	100.0	100.0
Western region	4 890.7	6 648.3	19.3	30.1
Khangai region	7 820.7	3 155.5	30.8	14.3
Central region	8 903.5	7 922.7	35.1	35.9
Eastern region	735.4	448.5	2.9	2.0
Ulaanbaatar	3 039.4	3 896.5	12.0	17.7

The highest income from the artisanal and small-scale mining activities were 3896.5 million togrogs in Ulaanbaatar city, 2842.4 million togrogs in Khovd aimag, 2640.8 million togrogs in Tuv aimag, 2316.4 million togrogs in Selenge aimag and 2100.8 million togrogs in Umnugobi aimag. The lowest income from the artisanal and small-scale mining were 429.0 million togrogs in Uvurkhangai aimag, 335.4 million togrogs in Dornogobi aimag, 111.0 million togrogs in Arkhangai aimag, 81.2 million togrogs in Khuvsgul aimag and 19.3 million togrogs in Dornod aimag.

Figure 33. Total income from ASM, by aimag



In 2016, the main artisanal mining operators spent total 8548.9 million togrogs for mining activities. The 28.5 percent of the total expenditure spent on fuel and lubricants expenses, 25.6 percent for wages, 10.2 percent for the rental cost of machinery and equipment, 7.4 percent spent for raw materials, 6.4 percent for the transportation costs, 5.9 percent for tools and spare parts, and the remaining for other expenses.

Table 62. Total expenditure of main artisanal mining operators, by type of minerals and expenses, in million togrogs

Region	Total					Share in total
		Gold	Coal	Spar	Others	
TOTAL	8 548.9	6 387.3	1 015.8	951.1	194.8	100.0
Wages	2 189.9	1 235.7	545.7	393.0	15.4	25.6
Assistances in kind and monetary to employees	64.9	52.8	3.0	8.7	0.5	0.8
Fuel and lubricants	2 439.1	2 131.3	48.3	197.7	61.8	28.5
Transportation cost	550.1	367.4	73.1	94.3	15.3	6.4
Cost of occupational safety	279.8	228.7	25.9	16.1	9.1	3.3
Electricity and heating	114.2	37.3	66.9	8.0	2.1	1.3
Supplies	501.4	305.8	146.5	39.5	9.6	5.9
Raw materials	633.1	522.4	45.3	28.6	36.8	7.4
Interest expense	126.4	109.4	10.3	3.5	3.1	1.5
Rental cost of machinery and equipment	872.5	732.8	11.6	124.9	3.2	10.2
Cost of rental housing	32.3	30.7	0.5	0.7	0.4	0.4
Compensation for damages caused by disasters	2.6	2.4	0.2	-	-	-
Payments and subsidies to landowners	29.6	27.3	1.6	0.2	0.6	0.3
Cost of reclamation of environment	128.6	115.8	0.5	10.5	1.8	1.5
Other	584.5	487.5	36.5	25.5	35.0	6.8

The total expenditure by region: 1083.2 million togrogs or 12.7 percent of the total expenditure occurred in Western region, 2275.9 million togrogs or 26.6 percent Khangai region, 3719.6 million togrogs or 43.5 percent in Central region, 397.8 million togrogs or 4.7 percent in Eastern region, and 1072.3 million togrogs or 12.5 percent in Ulaanbaatar city.

Table 63. Total expenditure of artisanal mining operators, by region and type of expenses, in million togrogs

Region	Total	Western region	Khangai region	Central region	Eastern region	Ulaanbaatar
TOTAL	8 548.9	1 083.2	2 275.9	3 719.6	397.8	1 072.3
Wages	2 189.9	37.3	765.7	718.5	121.5	547.0
Assistances in kind and monetary to employees	64.9	4.6	8.2	40.2	8.4	3.6
Fuel and lubricants	2 439.1	395.6	727.5	1 126.9	122.9	66.1
Transportation cost	550.1	96.6	110.8	197.9	67.9	76.9
Cost of occupational safety	279.8	40.9	75.0	126.0	12.3	25.6
Electricity and heating	114.2	6.7	21.7	10.1	7.0	68.7
Supplies	501.4	72.2	107.2	151.9	23.5	146.5
Raw materials	633.1	198.5	155.8	220.4	6.7	51.8
Interest expense	126.4	53.5	20.7	37.0	4.8	10.3
Rental cost of machinery and equipment	872.5	15.4	56.3	775.8	11.4	13.6
Cost of rental housing	32.3	1.0	-	30.5	0.2	0.5
Compensation for damages caused by disasters	2.6	-	-	2.4	-	0.2
Payments and subsidies to landowners	29.6	2.3	15.5	9.6	0.2	2.1
Cost of reclamation of environment	128.6	10.8	46.8	65.6	4.7	0.8
Other	584.5	147.8	164.8	206.9	6.3	58.6

25.8 percent of surveyed the artisanal mining operators paid the taxes and fees. Region wise, the percentage of the artisanal mining operators, who paid taxes and fees, is as following: the 42.0 percent is in Western region, 17.9 percent in Khangai region, 30.9 percent in Central region, 2.3 percent in Eastern region and 7.0 percent in Ulaanbaatar city.

Table 64. Number of artisanal mining operators, by region and taxes and fees paid or not paid

Region	TOTAL		Yes		No	
	2012	2016	2012	2016	2012	2016
TOTAL	7 273	5 998	1 820	1 545	5 453	4 453
Western region	1 982	2 527	707	649	1 275	1 878
Khangai region	2 183	935	479	276	1 704	659
Central region	2 236	2 202	583	477	1 653	1 725
Eastern region	251	164	39	35	212	129
Ulaanbaatar	621	170	12	108	609	62

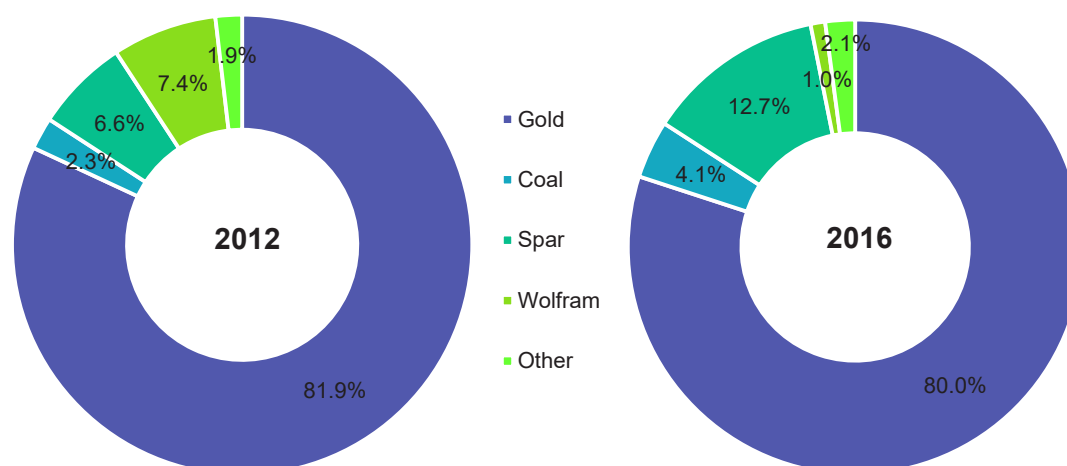
In 2016, the artisanal mining operators paid 349.7 million togrogs in taxes and fees, out of which 91.8 million togrogs or 26.3 percent was for vehicle insurance tax, 37.0 million togrogs or 10.6 percent for revenue tax (fixed) of small businesses, 100.5 million togrogs or 28.7 percent for personal income tax, 3.5 million togrogs or 1.0 percent for corporate income tax, 18.1 million togrogs or 5.2 percent for fee on usage of mineral resource, 14.0 million togrogs or 4.0 percent for membership tax, 25.1 million togrogs or 7.2 percent for value added tax, 16.0 million togrogs or 4.6 percent for land fee, and 43.8 million togrogs or 12.5 percent for other taxes and fees.

Table 65. Taxes paid by artisanal mining operators in 2016, by region and type of taxes, in million togrogs

Region	TOTAL	Transportation and vehicle tax	Unidentified revenue tax	Personal income tax	Corporate income tax	Fee on usage of mineral resource	Membership fee	Value added tax	Land fee (to land owners)	Other
TOTAL	349.7	91.8	37.0	100.5	3.5	18.1	14.0	25.1	16.0	43.8
Western region	61.5	33.3	5.0	7.7	1.5	5.6	1.6	-	6.3	0.6
Khangai region	64.9	15.2	12.2	28.2	0.5	0.9	0.8	-	3.0	4.0
Central region	173.1	36.2	7.7	61.1	0.3	3.7	10.8	25.1	0.2	28.0
Eastern region	19.0	2.7	5.1	3.1	0.2	6.4	0.6	-	0.1	0.9
Ulaanbaatar	31.2	4.4	6.9	0.4	1.0	1.6	0.1	-	6.5	10.3

Looking at the paid taxes and fees by type of minerals, 80.0 percent are gold miners, 4.1 percent are coal miners, 12.7 percent are fluorspar miners and 1.0 percent is wolfram miners. Compared to the previous survey results, the share of gold miners in total paid taxes decreased by 1.9 points; share of wolfram miners by 6.4 points. The share of paid taxes by coal miners increased by 1.8 points and fluorspar miners by 6.1 points.

Figure 34. Taxes paid by artisanal mining operators, by type of minerals, in percentage



In 2016, the artisanal mining operators generated 22071.5 million togrogs of revenue, created 15936.0 million togrogs of value-added cost and spent 6135.5 million togrogs for running cost. Compared to the previous survey results, the value-added cost decreased by 3870.1 million togrogs or 19.5 percent, and the running cost increased by 551.9 million togrogs or 9.9 percent. 35.5 percent of the total value-added cost generated in Western region, 10.6 percent in Khangai region, 31.4 percent to Central region, 1.2 percent in Eastern region, and 21.3 percent in Ulaanbaatar city.

Table 66. Gross output, running cost and value-added cost by region, in million togrogs

Region	Total income		Intermediate consumption		Value-added	
	2012	2016	2012	2016	2012	2016
TOTAL	25 389.6	22 071.5	5 583.6	6 135.5	19 806.1	15 936.0
Western region	4 890.7	6 648.3	654.9	985.5	4 235.7	5 662.8
Khangai region	7 820.7	3 155.5	2 009.3	1 465.9	5 811.4	1 689.5
Central region	8 903.5	7 922.7	2 194.5	2 912.0	6 708.9	5 010.8
Eastern region	735.4	448.5	402.6	262.9	332.8	185.6
Ulaanbaatar	3 039.4	3 896.5	322.2	509.2	2 717.2	3 387.3

Total value-added cost consists of 2189.9 million togrogs (13.7 percent) of wages, 64.9 million togrogs (0.4 percent) of in kind and monetary assistances to employees, 126.4 million togrogs (0.8 percent) of loan interest expenses, 382.0 million togrogs (2.4 percent) of taxes and fees, and 13172.8 million togrogs (82.7 percent) of estimated profits.

Table 67. Value-added cost, by components and region, million togrogs

Components	TOTAL	Western region	Khangai region	Central region	Eastern region	Ulaanbaatar	Share in total
TOTAL	15 936.0	5 662.8	1 689.5	5 010.8	185.6	3 387.3	100.0
Wages	2 189.9	37.3	765.7	718.5	121.5	547.0	13.7
Transportation and vehicle tax	91.8	33.3	15.2	36.2	2.7	4.4	0.6
Revenue tax (fixed)	37.0	5.0	12.2	7.7	5.1	6.9	0.2
Personal income tax	100.5	7.7	28.2	61.1	3.1	0.4	0.6
Corporate income tax	3.5	1.5	0.5	0.3	0.2	1.0	-
Fee on usage of mineral resource	18.1	5.6	0.9	3.7	6.4	1.6	0.1
Membership tax	14.0	1.6	0.8	10.8	0.6	0.1	0.1
Value added tax	25.1	-	-	25.1	-	-	0.2
Land fee	16.0	6.3	3.0	0.2	0.1	6.5	0.1
Other taxes	43.8	0.6	4.0	28.0	0.9	10.3	0.3
In kind and monetary assistance to employees	64.9	4.6	8.2	40.2	8.4	3.6	0.4
Loan Interest expense	126.4	53.5	20.7	37.0	4.8	10.3	0.8
Compensation for damages caused by disasters	2.6	-	-	2.4	-	0.2	-
Payments and subsidies to landowners	29.6	2.3	15.5	9.6	0.2	2.1	0.2
Estimated profits	13 172.8	5 503.5	814.6	4 030.0	31.7	2 792.9	82.7

39.8 percent of the total running cost include fuel and lubricants cost, 14.2 percent rental cost of tools and equipment, 10.3 percent raw materials cost, 9.0 percent transportation cost, 8.2 percent supplies cost, 4.6 percent protective clothes or items cost, 2.1 percent environmental rehabilitation cost, 1.9 percent electricity and heating cost, 0.5 percent house renting cost and rest 9.5 percent include other expenses.

Table 68. Running cost, by components and region, million togrogs

Components	TOTAL	Western region	Khangai region	Central region	Eastern region	Ulaanbaatar	Share in total
TOTAL	6 135.5	985.5	1 465.9	2 912.0	262.9	509.2	100.0
Raw materials	633.1	198.5	155.8	220.4	6.7	51.8	10.3
Supplies	501.4	72.2	107.2	151.9	23.5	146.5	8.2
Electricity and heating	114.2	6.7	21.7	10.1	7.0	68.7	1.9
Fuel and lubricants	2 439.1	395.6	727.5	1 126.9	122.9	66.1	39.8
House renting cost	32.3	1.0	-	30.5	0.2	0.5	0.5
Rental cost of tools and equipment	872.5	15.4	56.3	775.8	11.4	13.6	14.2
Transportation cost	550.1	96.6	110.8	197.9	67.9	76.9	9.0
Occupational safety cost	279.8	40.9	75.0	126.0	12.3	25.8	4.6
Environment rehabilitation cost	128.6	10.8	46.8	65.6	4.7	0.8	2.1
Other expenses	584.5	147.8	164.8	206.9	6.3	58.6	9.5

16.1 percent of the total running cost is spent in Western region, 23.9 percent in Khangai region, 47.5 percent in Central region, 4.3 percent in Eastern region and the rest 8.3 percent in Ulaanbaatar city.

10.4 INVESTMENTS MADE BY ARTISANAL MINING OPERATORS

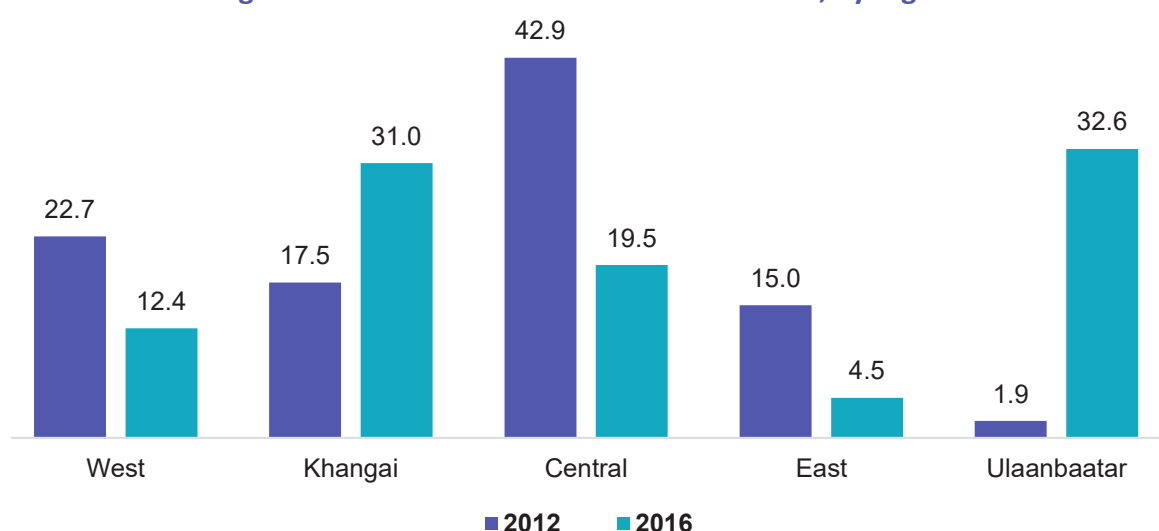
In this section, the information regarding the investments made in 2016 by artisanal mining operators in main mining operations. In 2016, the artisanal mining operators made 1455.8 million togrogs of investments, this amount, compared to the previous survey results has decreased by 692.8 million togrogs or 32.2 percent. The survey respondents invested 72.3 million togrogs or 5.0 percent in constructions of buildings, 417.0 million togrogs or 28.6 percent in vehicles, 899.1 million togrogs or 61.8 percent in tools and equipment and 67.4 million togrogs or 4.6 percent in personal assets.

Table 69. Investments by artisanal small-scale miners in 2016, by type of assets and region, in million togrogs

Region	TOTAL		Buildings		Vehicles		Equipment		Personal assets	
	2012	2016	2012	2016	2012	2016	2012	2016	2012	2016
TOTAL	2 148.6	1 455.8	244.1	72.3	1 211.7	417.0	654.0	899.1	38.9	67.4
Western region	488.0	179.9	32.5	5.3	314.7	99.1	136.4	71.3	4.5	4.3
Khangai region	376.5	451.3	62.1	18.2	152.4	125.9	148.8	297.9	13.3	9.3
Central region	921.4	284.0	149.5	26.6	502.5	82.9	253.3	158.0	16.1	16.5
Eastern region	321.5	65.9	-	1.5	230.1	22.0	86.4	42.4	5.0	-
Ulaanbaatar	41.1	474.7	-	20.7	12.0	87.2	29.1	329.5	-	37.3

In terms of the investment made by the artisanal mining operators regionally, in Western region had 179.9 million tugrik investment, the artisanal mining operators in Khangai region made investment worth 451.3 million togrogs, the artisanal mining operators in Central region made investment worth of 284.0 million togrogs, artisanal mining operators in Eastern region made investment worth of 65.9 million togrogs and artisanal mining operators in Ulaanbaatar city made investment worth of 474.7 million togrogs.

Figure 35. Share of investments made in 2016, by region



Investments made in 2016 by the surveyed artisanal mining operators increased by 13.5 points in Khangai region and by 30.7 points in Ulaanbaatar city, whereas it decreased by 10.3 points in Western region, by 10.5 points in Eastern region and by 23.4 points in Central region.

Table 70. Investments by the artisanal mining operators in 2016 by type of assets and minerals, in million togrogs

Region	TOTAL		Buildings		Vehicles		Equipment		Personal assets	
	2012	2016	2012	2016	2012	2016	2012	2016	2012	2016
TOTAL	2 148.6	1 455.8	244.1	72.3	1 211.7	417.0	654.0	899.1	38.9	67.4
Gold	1455.5	860.7	32.5	49.6	314.7	285.0	136.4	497.0	4.5	29.2
Coal	53.1	466.7	62.1	20.7	152.4	79.7	148.8	329.0	13.3	37.3
Fluorspar	589.2	98.6	149.5	2.0	502.5	35.0	253.3	61.2	16.1	0.4
Wolfram	8.4	19.4	-	-	230.1	14.3	86.4	4.6	5.0	0.5
Other	42.4	10.4	-	-	12.0	-	29.1	7.4	-	-

In 2016, the artisanal gold mining operators made 860.7 million togrogs of investments, coal mining operators 466.7 million togrogs of investment, fluorspar mining operators 98.6 million togrogs, wolfram mining operators 19.4 million togrogs and other types of minerals artisanal mining operators 10.4 million togrogs. These findings compared with the previous survey results, show that the investments made by gold mining operators decreased by 40.9 percent; fluorspar mining operators by 83.3 percent. Whereas investments made by coal mining operators increased by 8.8 times and wolfram mining operators by 2.3 times.



APPENDIX: QUESTIONNAIRE FORM



ARTISANAL AND SMALL-SCALE MINERS' SURVEY-2016

APPENDIX: QUESTIONNAIRE FORM

Approved by an order No A/20 of Chairman of NSO
dated on 19 Sep 2016 .

Questionnaire BUES-1

All responses in this questionnaire form are kept secret in accordance of Mongolian statistical law
(paragraph 3, article 22) on Privacy of individuals.

ARTISANAL AND SMALL-SCALE MINING SURVEY - 2016

SECTION 1. ADDRESS

No	Questions	Answers	
1.1	Enumerator's surname, given name, code	..... Surname Given name	
1.2	Number of questionnaire	.....
1.3	Data entry operator's surname, given name, code	..... Surname Given name	
	Location	Location of operation Administration	
1.4	Aimag / Capital City	Name Code Name Code	
1.5	Soum / District	.....
1.6	Bag / Khoroo	.....
1.7	Location of operation	Capital city-1, Aimag center-2, Soum center-3, Countryside-4	
1.8	Name of mineral field	.....

SECTION 2. GENERAL INFORMATION

No	Questions	Answers	Step																																																																	
2.1	Surname, given name Surname Given name																																																																		
2.2	Registration number																																																																		
2.3	Sex	Male 1 Female 2																																																																		
2.4	Phone number																																																																		
2.5	Age																																																																		
2.6	What is the highest level of education you completed?	No education 1 Primary school 2 Secondary school 3 High school 4 Technical and vocational 5 Specialized secondary 6 Higher education 7																																																																		
2.7	What is your occupation? (Please fill your major occupation)	Occupation code																																																																		
2.8	Please tell the information of family members.	<table border="1"> <thead> <tr> <th></th> <th>Total</th> <th>Female</th> <th>At artisanal mining</th> <th>Female</th> </tr> <tr> <th>A</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Family, total</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Employed</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>At enterprise</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Self-employed</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Unemployed</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Retired</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Student in university, institute and college</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Student in general educational school</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Kindergarten age children</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Children in kindergarten</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Disabled</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Total	Female	At artisanal mining	Female	A	1	2	3	4	Family, total					Employed					At enterprise					Self-employed					Unemployed					Retired					Student in university, institute and college					Student in general educational school					Kindergarten age children					Children in kindergarten					Disabled					
	Total	Female	At artisanal mining	Female																																																																
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Disabled																																																																				

If more than 2 family members work at artisanal mining in column 3, the information of other members besides of respondent who work at artisanal mining will be filled at question 2.9

			Page 2
No	Questions	Answers	Step
2.9	Please tell the surname, given name and registration number of family members, who work at artisanal mining. (Don't fill the information of respondent.) | | | | | | | |	..... ..... ..... ..... ..... .....
SECTION 3. EMPLOYMENT			
No	Questions	Answers	Step
3.1	Please tell your status of employment.	Leader of partnership Registered 1 Unregistered 2 Member of partnership Registered 3 Unregistered 4 Cooperative Leader 5 Member 6 Proprietorship (singly) in artisanal mining 7 Utility workers in artisanal mining 8 Unpaid family worker 9	→ 3.3 → 3.3 → 3.8
3.2	How many members in your partnership/cooperative?	1. Total 2. Thereof female	
3.3	Please tell name and registration number of partnership/cooperative? (Must fill registration number of registered partnership/cooperative)	.....
3.4	Do you belong to NGO?	Yes 1 No 2	→ 3.7
3.5	Please tell name and registration number of NGO which you belong	.....
3.6	Is your NGO a member of "United roof of Mongolian artisanal mining"?	Yes 1 No 2 Don't know 3	
3.7	How do you and your partner share-out income? (May choose more than one answers)	Share-out equal 1 Share-out piece-payment 2 Share-out constant percentage 3 Don't share-out 4 Fixed pay 5	
3.8	What is your role in artisanal mining?	Extractor of minerals 1 Utility workers in artisanal mining 2 Buyer for mineral resources 3 Retailer of food and other goods 4 Canteen steward 5 Truck driver 6 Unpaid family worker 7 Investor 8	↓

End questionnaire

No	Questions	Answers	Step
3.9	How many years are you operating the artisanal mining? (First year of employment is calculated from the first year of artisanal mining and related activities.)	Year	
3.10	What is the reasons of operating the artisanal mining? (May choose more than one answers)	No permanent job A No other income earning jobs competed with artisanal mining B Requirements of other work places are high C Lost livestock D Earn income E Make own business F Other (please specify) G	
3.11	Do you accommodate in another housing other than your permanent accommodation when you operate the artisanal mining?	Yes 1 No 2	→ 3.15
3.12	What kind of accommodations do you live when you operate the artisanal mining?	Ger 1 House 2 Tent 3 Hutting 4 Mud hut 5 Other (please specify) 6	
3.13	What is the type of ownership of your accommodation?	Own possession 1 Mixed possession 2 Rent 3	
3.14	What is the electricity source of your accommodation?	Central power system 1 Diesel generators 2 Renewable power devices 3 Small power generators 4 No electricity 5	
3.15	What is your drinking water source of location of artisanal mining?	Central water supply system 1 Water station connected to central water supply system 2 Protected well 3 Protected springs 4 Refined bottled water 5 Water station not connected to central water system 6 Tanker trucks 7 Unprotected well, springs, river, stream, lake, pond 8	
3.16	Do you operate another businesses other than artisanal mining?	Yes 1 No 2	→ 4.1
3.17	Please name your another business.	..... ..... ..... (complete by ISIC 4.0.)	
SECTION 4. CHILDREN'S RIGHTS			
No	Questions	Answers	Step
4.1	How much do you know about children's rights?	Good 1 Average 2 Weak 3 Don't know 4	

			Page 4
No	Questions	Answers	Step
4.2	Do you have children under 18 age? (Check with question 2.8.)	Yes 1 No 2	→ 4.6
4.3	Did your children under 18 age work at artisanal mining in last 12 months?	Yes 1 No 2	→ 4.6
4.4	In which activity of artisanal mining did your children under 18 age participate mostly? (If you answered at 2 columns of rows 9 and 10 of question 2.8, please fill question 4.4 and choose more than one answers)	Dig holes A Haul water, rocks and bank B Crush stones C Wash gold and stones D Blast E Other (please specify) F	
4.5	When do your children under 18 age mostly work at artisanal mining? (May choose more than one.)	Whole year A Seasonal holiday B Non school hours C Other (please specify) D	
4.6	Did children under 18 age work at your field in last 12 months?	Yes 1 No 2	→ 5.1
4.7	How many children under 18 age worked at your field in last 12 months?	1-5 children 1 6-10 children 2 11-20 children 3 21, and more children 4	
4.8	Have you had child injured accidents during your work at artisanal mining?	Yes 1 No 2	→ 5.1
4.9	How many children under 18 age were injured during your work?	1-2 children 1 3-4 children 2 5-6 children 3 7-8 children 4 9, and more children 5	
4.10	What kind of injuries did the children suffer from? (May choose more than one.)	Light injury A Fetus injury (arms, legs) B Eyesight and hearing injury C Brain, back and spinal cord injury D Poison at toxic substances E Other (please specify) F	
SECTION 5. NEEDS OF INFORMATION, SOURCE OF INFORMATION			
No	Questions	Answers	Step
5.1	Do you use mobile phone?	Yes 1 No 2	→ 5.3
5.2	What kind of mobile phone do you use?	Simple..... 1 Smart..... 2	
5.3	What kind of information is most for you? (May choose more than one.)	Law A Politics B Daily information C Artisanal mining D Rehabilitation and environmental issue E Education, culture and science F Social welfare and service G Hygiene and safety H Health care I Family and children J Other (please specify) K	

			Page 5
No	Questions	Answers	Step
5.4	Which source do you get above information mostly from? (May choose more than one.)	TV A Radio B Internet, social media (facebook, twitter etc) C Mobile phone D Other people E Newsletter F Newspaper and magazine G Printed materials H Meeting I Other (please specify) J	
SECTION 6. INFORMATION OF LABOR SAFETY AND SANITATION OF ARTISANAL MINING			
No	Questions	Answers	Step
6.1	How much do you know regarding the legislation, labor protection and safety of artisanal mining?	Satisfied 1 Fair 2 Dissatisfied 3	
6.2	Have you injured or get an accidents during the artisanal mining operation?	Yes 1 No 2	→ 6.5
6.3	What kind of injures or accidents did you have? (May choose more than one.)	Lack of air A Hit by landslide B Burn C Freeze D Fall to the hole E Suffer from carbon monoxide F Poison to mercury G Toxic to other chemicals H Other (please specify) I	
6.4	Please describe the damages you have suffered from above accidents. (May choose more than one.)	Health A Materials B Other (please specify) C	
6.5	Have you sicked when you working at artisanal mining?	Yes 1 No 2	→ 6.7
6.6	What kind of sick have you get? (May choose more than one.)	Diseases of the respiratory system A Backache B Diseases of the digestive system C Diseases of the cardiovascular system D Diseases of the skin and subcutaneous tissue E Diseases of the musculoskeletal system and connective tissue F Diseases of the genitourinary system G Injury, poisoning and certain other consequences of external causes H Diseases of the nervous system and sense organs I Certain infectious and parasitic diseases J Other (please specify) K	
6.7	Is there any availability to have a medical services in your field of artisanal mining?	Yes 1 No 2	
6.8	How far is location of medical services from your field?	Hospital of aimag, soum/district which located in the extraction field km Hospital of other aimag, soum/district km	
SECTION 7. CONTRIBUTIONS TO LOCAL GOVERNMENT AND SOCIETY			
No	Questions	Answers	Step
7.1	Have you covered at the social and health insurance in last 12 months?	Yes 1 No 2	→ 7.5
7.2	What insurance did you pay? (May choose more than one.)	Social insurance A Health insurance B	
7.3	Have you received a compensation from social insurance in the last 12 months?	Yes 1 No 2	
7.4	Have you covered at the allowance for healthcare services in last 12 months?	Yes 1 No 2	

			Page 6
No	Questions	Answers	Step
7.5	Is there any changes in your livelihood since you are working at artisanal mining?	Yes 1 No 2	→ 7.7
7.6	What kind of changes do you have in your life? (May choose more than one.)	Have a permanent work A Have an income source B Have an own house C Have a car D Other (please specify) E	
7.7	Have you made a contributions to local government?	Yes 1 No 2	→ 8.1
7.8	What kind of contributions did you make to local government? (May choose more than one.)	Created a permanent work place A Personally contributed to development of local government B Gave a donations C Participated in environmental protection and rehabilitation work D Other (please specify) E	
SECTION 8. ASSISTANCE, SUPPORT, DIFFICULTY AND PROBLEM			
No	Questions	Answers	Step
8.1	Have received any assistance and support from government and non-government organizations (NGO)?	Yes 1 No 2	→ 8.4
8.2	What kind of assistance and support have you received from government and NGO? (May choose more than one.)	<div style="display: flex; justify-content: space-between;"> <div> Covered at trainings Gave a professional advices Provided an equipments at discounted prices Provided a soft loan Granted aid Provided a food voucher Other (please specify) </div> <div> <div style="display: flex; align-items: center;"> <div style="width: 40px; text-align: center;">Government</div> <div style="width: 40px; text-align: center;">NGO</div> </div> A A B B C C D D E E F F G G </div> </div>	→ 8.4
8.3	In what trainings have you been involved? (May choose more than one.)	Labor protection and safety A Legal environment of artisanal mining B Business training C Rehabilitation of environment D Supply chain E Organization of artisanal mining F Experiences of artisanal mining G Human rights H Other (please specify) I	
8.4	Do you have any difficulties when you work at artisanal mining?	Yes 1 No 2	→ 8.6
8.5	What kind of difficulties do you encounter? (May choose more than one.)	Legal environment is not well established A Mineral's output is low B Field of extraction is limited C Financial problems (get a loan) D Capacity of equipment is low E Organizational problem F Inspection and burden are high G Tax issues are difficult H Difficult to get a timber permission I Other (please specify) J	
8.6	Do you have any difficulties to communicate with authorities?	Yes 1 No 2	→ 8.11
8.7	What organizations are difficult to communicate? (May choose more than one.)	Local authority A Professional inspection agency B Tax authority C Legal and control authority D Mineral resource authority E Health organization F Welfare organization G Social insurance organization H Environmental organization I Other (please specify) J	



ARTISANAL AND SMALL-SCALE MINERS' SURVEY-2016

				Page 7																																	
No	Questions	Answers		Step																																	
8.8	What kind of difficulties do you encounter to communicate with above organizations? (May choose more than one.)	Field of extraction issue A Bureaucracy of government organizations B Access to health and medical services C Receive pensions and benefits from Social Insurance Fund D Cover to welfare service E Other (please specify) F																																			
8.9	Have you resolved the difficulties and problems you face?	Yes 1 No 2	→ 8.11																																		
8.10	How did you resolve those problems? (May choose more than one.)	Addressed to upper level of organization and official A Addressed to law enforcement agency B Negotiated with the relevant organizations C Resolved according to law and rule D Made contract and agreement E Paid penalties and fees F Provided by gifts, gratuities and bribes G Other (please specify) H																																			
8.11	Do you have any problems or difficulties to sale the extracted minerals?	Yes 1 No 2	→ 8.13																																		
8.12	What kind of difficulties do you encounter to sale? (May choose more than one.)	There is no formal buyer in the local A There is no official assay unit in the local B Marketeer buy minerals at less price than on market C Mineral prices are not stable D Dissatisfied the mineral's content, quality and standard E Other (please specify) F																																			
8.13	Have you resolved the issue of field of extraction?	Yes 1 No 2	→ 8.15																																		
8.14	How did you resolve field issue?	Written contracted with Soum/District governor 1 Verbal contracted with Soum/District governor 2 Written contracted with licensed enterprise 3 Verbal contracted with licensed enterprise 4 Contracted agreement with Soum/District governor and licensed enterprise 5 Use the licensed enterprises' field free 6 Other (please specify) 7																																			
8.15	What kind of supports and assistances do you need from government and NGO for your artisanal mining activity? (May choose more than one.)	<table border="0"> <tr> <td></td> <td>Government</td> <td>NGO</td> </tr> <tr> <td>Improve the legal environment</td> <td>A</td> <td>A</td> </tr> <tr> <td>Decide the field of extraction</td> <td>B</td> <td>B</td> </tr> <tr> <td>Loan and financial aid</td> <td>C</td> <td>C</td> </tr> <tr> <td>Technical and technological assistance and support</td> <td>D</td> <td>D</td> </tr> <tr> <td>Recommit limited partner system of partnership</td> <td>E</td> <td>E</td> </tr> <tr> <td>Create an official registration</td> <td>F</td> <td>F</td> </tr> <tr> <td>Improve the mineral sales network</td> <td>G</td> <td>G</td> </tr> <tr> <td>Advice and assistance regarding the improvement of labor safety and security</td> <td>H</td> <td>H</td> </tr> <tr> <td>Rehabilitate the environment</td> <td>I</td> <td>I</td> </tr> <tr> <td>Other (please specify)</td> <td>J</td> <td>J</td> </tr> </table>		Government	NGO	Improve the legal environment	A	A	Decide the field of extraction	B	B	Loan and financial aid	C	C	Technical and technological assistance and support	D	D	Recommit limited partner system of partnership	E	E	Create an official registration	F	F	Improve the mineral sales network	G	G	Advice and assistance regarding the improvement of labor safety and security	H	H	Rehabilitate the environment	I	I	Other (please specify)	J	J	→ 9.1	
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8.16	What is your opinion to improve the legal environment?																																			
CHECK : 1. If leaders of partnership/cooperative answered 1, 2, 3, 5 of question 3.7, section 9 will be completed at level of partnership/cooperative. If choice was 4 of 3.7, only own information of leaders will be completed at section 9.																																					

SECTION 9. EQUIPMENTS AND ENGRAVERS				Page 8
No	Questions	Answers	Step	
9.1	Do you use any kind of equipments and engravers for your extraction of artisanal mining?	Yes 1 No 2	→ 9.4	
9.2	What is the type of ownership of your mainly used equipments and engravers?	Own possession 1 Mixed possession 2 Rental 3		
9.3	How many equipments and engravers do you use?	1. Engraver (hack, shovel, mattock etc) <input type="text"/> pcs 2. Metal detector <input type="text"/> pcs 3. Electric generator <input type="text"/> pcs 4. Turboflow or airblast <input type="text"/> pcs 5. Clocked drill <input type="text"/> pcs 6. Levitation equipment <input type="text"/> pcs 7. Wire <input type="text"/> pcs 8. Water gun <input type="text"/> pcs 9. Pump <input type="text"/> pcs 10. Clocked small sized drill (compressor) <input type="text"/> pcs 11. Shluz <input type="text"/> pcs 12. Dry gold washing device <input type="text"/> pcs 13. Small excavators <input type="text"/> pcs 14. Other 1 (please specify) <input type="text"/> pcs 15. Other 2 (please specify) <input type="text"/> pcs 16. Other 3 (please specify) <input type="text"/> pcs		
9.4	Do you use labor protection uniforms?	Yes 1 No 2	→ 10.1	
9.5	What kind of labor protection uniforms do you use? (May choose more than one.)	Helmet A Shoes B Mask C Vest D Gloves E Eyeglasses F Earmuffs G Lights H Other (please specify) I		
CHECK !! If leaders of partnership/cooperative answered 1, 2, 3, 5 of question 3.7, section 10 will be completed at level of partnership/cooperative. If choice was 4 of 3.7, questions 10.-3-10.9 will be answered at partnership level and questions 10.1-10.2, 10.10-10.21 will be completed at only own information of leaders. If members of partnership/cooperative answered 4 of question 3.7, other questions of 10.3-10.9 of section 10 will be completed at only own information.				
SECTION 10. OPERATIONAL INFORMATION				
No	Questions	Answers	Step	
10.1	What kind of minerals do you extract? (May choose more than one.)	Gold A Coal B Spar C Wolfram D Tin E Limestone F Gemstone G Sand and gravel H Other (please specify) I		
10.2	What is your type of mining? (May choose more than one.)	Open pit mining A Hidden pit mining B		



ARTISANAL AND SMALL-SCALE MINERS' SURVEY-2016

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CHECK !! Questions 10.3-10.9 will be completed by only leaders of partnership/cooperative or self artisanal miners. Members of partnership/cooperative will not answer for questions 10.3-10.9.

No	Questions	Answers	Step																																																												
10.3	Do you work at permitted field?	Yes 1 No 2	→ 10.5																																																												
10.4	What is the type of your permitted field?	Field for local special needs 1 Field of licensed enterprises 2 Other (please specify) 3																																																													
10.5	What is size of your field?	<input type="text"/> m ²																																																													
10.6	What is the damaged size of field since you started to extract?	<input type="text"/> m ²																																																													
10.7	Have you made a rehabilitation in last 12 months?	Yes 1 No 2	→ 10.10																																																												
10.8	What is the size of rehabilitated field?	<input type="text"/> m ²																																																													
10.9	To whom/where do you hand over the rehabilitated field? (May choose more than one.)	Appointed commission from soum/duureg's governor A State environmental inspector B Other (please specify) C																																																													
10.10	Where/whom do you sell your extracted minerals? (May choose more than one.)	Enterprises A Concentrator / mill B Individuals C Bank of Mongolia D Other (please specify) E																																																													
10.11	Which months did you work at mining in last 12 months? (Please circle.)	<table border="1"> <thead> <tr> <th>Year</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>Month</td> <td>10 11 12</td> <td>1 2 3 4 5 6 7 8 9 10 11 12</td> </tr> </tbody> </table>	Year	2015	2016	Month	10 11 12	1 2 3 4 5 6 7 8 9 10 11 12																																																							
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10.12	What was your high and low income months of last 12 months? (Don't circle the months double.)	<table border="1"> <thead> <tr> <th></th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>High income</td> <td>10 11 12</td> <td>1 2 3 4 5 6 7 8 9 10 11 12</td> </tr> <tr> <td>Average income</td> <td>10 11 12</td> <td>1 2 3 4 5 6 7 8 9 10 11 12</td> </tr> <tr> <td>Low income</td> <td>10 11 12</td> <td>1 2 3 4 5 6 7 8 9 10 11 12</td> </tr> </tbody> </table>		2015	2016	High income	10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	Average income	10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	Low income	10 11 12	1 2 3 4 5 6 7 8 9 10 11 12																																																	
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Low income	10 11 12	1 2 3 4 5 6 7 8 9 10 11 12																																																													
10.13	What was your monthly income?	1. High income <input type="text"/> tug 2. Average income <input type="text"/> tug 3. Low income <input type="text"/> tug																																																													
10.14	How many days do you work at artisanal mining on average per month?	<input type="text"/>																																																													
10.15	How much minerals have you sold in last 12 months?	<table border="1"> <thead> <tr> <th>Sales</th> <th>Measure-ment unit</th> <th>Number of months</th> <th>Average sales per month</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>B</td> <td>1</td> <td>2</td> <td>3=1X2</td> </tr> <tr> <td>High</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Average</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Low</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Amount</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Name of minerals</td> <td>Measurement unit</td> <td></td> <td>Name of minerals</td> <td>Measurement unit</td> </tr> <tr> <td>Gold</td> <td>gram</td> <td></td> <td>Limestone</td> <td>ton</td> </tr> <tr> <td>Coal</td> <td>ton</td> <td></td> <td>Gemstone</td> <td>ton</td> </tr> <tr> <td>Spar</td> <td>ton</td> <td></td> <td>Sand and gravel</td> <td>ton</td> </tr> <tr> <td>Wolfram</td> <td>ton</td> <td></td> <td>Other</td> <td>....</td> </tr> <tr> <td>Tin</td> <td>ton</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Sales	Measure-ment unit	Number of months	Average sales per month	Amount	A	B	1	2	3=1X2	High					Average					Low					Amount					Name of minerals	Measurement unit		Name of minerals	Measurement unit	Gold	gram		Limestone	ton	Coal	ton		Gemstone	ton	Spar	ton		Sand and gravel	ton	Wolfram	ton		Other	Tin	ton				
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			Page 10
No	Questions	Answers	Step
10.16	How much expenses have you spent for artisanal mining operation in last 12 months?	1. Wages tug 2. Assistances in kind and monetary to employees tug 3. Fuel and lubricants tug 4. Transportation cost tug 5. Cost of occupational safety tug 6. Electricity and heating tug 7. Supplies tug 8. Raw materials tug 9. Interest expense tug 10. Rental cost of machinery and equipments tug 11. Cost of rental housing tug 12. Compensation for damages caused by disasters tug 13. Payments and subsidies to landowners tug 14. Cost of reclamation of environment tug 15. Other (please specify) tug 16. Total tug	
10.17	Have you paid tax and fees in last 12 months?	Yes 1 No 2	→ 10.19
10.18	How much tax and fees have you paid in last 12 months?	1. Transportation and vehicle tax tug 2. Unidentified revenue tax tug 3. Personal income tax tug 4. Corporate income tax tug 5. Fee on usage of mineral resource tug 6. Membership tax tug 7. Value added tax tug 8. Land fee (to land owners) tug 9. Other (please specify) tug 10. Total tug	
10.19	Have you made an investments for your artisanal mining activity in last 12 months?	Yes 1 No 2	↓ End questionnaire.
10.20	Please tell the amount of investments by classification of assets.	1. Buildings, house tug 2. Vehicles tug 3. Equipments tug 4. Other (please specify) tug 5. Total tug	
10.21	What is your source of investments?	1. Bank loan tug 2. Financed by projects and programs tug 3. Own budget tug 4. Other (please specify) tug 5. Total tug	
Confirmed by: Signature THANK YOU. day month year			



APPENDIX: APPENDIX TABLE

TABLE 1. NUMBER OF PERSONS INVOLVED IN ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city, sex and share to total

Region, aimag and the capital city	Number of artisanal miners		Share to total		Family members
		Female		Female	
TOTAL	9 596	2 301	100.0	100.0	2 366
West region	3 597	857	37.5	37.2	906
Bayan-Ulgii	137	16	1.4	0.7	25
Govi-Altai	1 674	555	17.4	24.1	582
Zavkhan	426	90	4.4	3.9	45
Uvs	539	113	5.6	4.9	172
Khovd	821	83	8.6	3.6	82
Khangai region	1 300	380	13.5	16.5	480
Arkhangai	129	64	1.3	2.8	74
Bayankhongor	745	211	7.8	9.2	259
Bulgan	43	5	0.4	0.2	2
Uvurkhangai	284	83	3.0	3.6	118
Khuvsgul	99	17	1.0	0.7	27
Central region	3 312	879	34.5	38.2	897
Govisumber	60	22	0.6	1.0	23
Dornogovi	117	36	1.2	1.6	3
Dundgovi	582	213	6.1	9.3	253
Umnugovi	998	231	10.4	10.0	244
Selenge	898	214	9.4	9.3	175
Tuv	657	163	6.8	7.1	135
East region	171	39	1.8	1.7	32
Dornod	50	12	0.5	0.5	6
Khentii	121	27	1.3	1.2	26
Ulaanbaatar	1 216	146	12.7	6.3	51

TABLE 2. NUMBER OF PERSONS INVOLVED IN ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and age group

Region, aimag and the capital city	TOTAL	10-14	15-17	18-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 +
TOTAL	9 596	6	30	152	759	1 396	1 519	1 565	1 461	1 199	896	429	134	41	9
West region	3 597	2	14	59	269	469	532	548	610	506	354	162	60	10	2
Bayan-Ulgii	137	-	4	3	13	19	25	26	20	12	7	4	4	-	-
Govi-Altai	1 674	2	6	27	118	217	244	268	267	232	177	85	29	2	-
Zavkhan	426	-	-	-	29	59	52	47	77	80	49	21	9	1	2
Uvs	539	-	1	13	54	71	67	77	113	81	42	16	4	-	-
Khovd	821	-	3	16	55	103	144	130	133	101	79	36	14	7	-
Khangai region	1 300	2	5	31	92	203	207	226	180	142	127	60	21	4	-
Arkhangai	129	-	1	3	19	22	22	22	8	9	7	10	3	3	-
Bayankhongor	745	2	4	19	42	124	129	128	101	77	78	31	9	1	-
Bulgan	43	-	-	-	6	6	4	8	8	7	4	-	-	-	-
Uvurkhangai	284	-	-	7	17	36	42	58	48	32	33	10	1	-	-
Khuvsgul	99	-	-	2	8	15	10	10	15	17	5	9	8	-	-
Central region	3 312	2	7	39	260	485	511	563	504	395	307	171	43	20	5
Govisumber	60	-	2	2	5	3	9	10	6	6	8	6	2	1	-
Dornogovi	117	-	-	-	1	13	14	17	18	28	15	7	1	2	1
Dundgovi	582	-	1	6	51	78	76	87	88	74	61	43	9	5	3
Umnugovi	998	1	3	13	91	165	160	179	143	101	87	41	11	3	-
Selenge	898	1	10	66	141	152	133	133	139	111	82	47	9	7	-
Tuv	657	-	1	8	46	85	100	137	110	75	54	27	11	2	1
East region	171	-	-	2	11	21	25	27	30	28	14	6	4	2	1
Dornod	50	-	-	-	2	7	6	9	4	12	4	4	1	-	1
Khentii	121	-	-	2	9	14	19	18	26	16	10	2	3	2	-
Ulaanbaatar	1 216	-	4	21	127	218	244	201	137	128	94	30	6	5	1

TABLE 3. NUMBER OF PERSONS INVOLVED IN ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and educational level

Region, aimag and the capital city	TOTAL	No education	Educated	Primary school	Secondary school	High school	Technical and vocational	Specialized secondary	Higher education
TOTAL	9 596	215	9 381	1 020	3 523	3 441	485	289	623
West region	3 597	81	3 516	446	1 309	1 245	143	120	253
Bayan-Ulgii	137	3	134	29	33	53	6	4	9
Govi-Altai	1 674	34	1 640	206	614	600	54	55	111
Zavkhan	426	10	416	39	130	141	24	18	64
Uvs	539	18	521	83	185	181	30	19	23
Khovd	821	16	805	89	347	270	29	24	46
Khangai region	1 300	39	1 261	246	526	373	52	18	46
Arkhangai	129	11	118	60	33	14	5	3	3
Bayankhongor	745	13	732	44	343	266	36	13	30
Bulgan	43	-	43	2	19	14	2	-	6
Uvurkhangai	284	10	274	108	95	60	8	-	3
Khuvsgul	99	5	94	32	36	19	1	2	4
Central region	3 312	63	3 249	253	1 320	1 150	164	113	249
Govisumber	60	1	59	3	26	21	3	2	4
Dornogovi	117	1	116	9	43	42	8	9	5
Dundgovi	582	8	574	62	284	152	26	21	29
Umnugovi	998	26	972	129	391	264	50	41	97
Selenge	898	14	884	26	317	384	47	30	80
Tuv	657	13	644	24	259	287	30	10	34
East region	171	1	170	14	37	90	12	6	11
Dornod	50	1	49	3	11	20	10	3	2
Khentii	121	-	121	11	26	70	2	3	9
Ulaanbaatar	1 216	31	1 185	61	331	583	114	32	64

TABLE 4. NUMBER OF PERSONS INVOLVED IN ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and occupational classification

Region, aimag and the capital city	TOTAL	Military service occupation	Manager	Specialist	Technician and assistant specialist	Clerk and office worker	Trade and service worker	Qualified specialist in agriculture, forestry and fishing	Workers in production, construction, handicraft and related works and services	Operator of machines, mechanisms, equipment, assembler	Simple work, occupation	No profession
TOTAL	9 596	7	35	694	166	36	229	853	767	1 357	76	5 376
West region	3 597	4	10	271	50	10	70	533	216	356	27	2 050
Bayan-Ulgii	137	1	-	6	-	1	1	1	17	26	-	84
Govi-Altai	1 674	-	5	134	16	4	44	316	79	163	14	899
Zavkhan	426	-	4	72	9	2	5	87	31	23	4	189
Uvs	539	-	1	24	10	2	9	13	46	60	2	372
Khovd	821	3	-	35	15	1	11	116	43	84	7	506
Khangai region	1 300	-	6	68	8	3	25	171	73	89	8	849
Arkhangai	129	-	1	7	-	1	3	81	4	4	3	25
Bayankhongor	745	-	5	38	4	-	18	9	46	49	4	572
Bulgan	43	-	-	9	-	1	2	-	7	12	-	12
Uvurkhangai	284	-	-	8	3	1	1	79	14	20	1	157
Khuvsgul	99	-	-	6	1	-	1	2	2	4	-	83
Central region	3 312	3	13	285	74	22	101	134	293	599	29	1 759
Govisumber	60	1	-	3	-	-	7	-	11	10	-	28
Dornogovi	117	-	1	12	2	-	5	2	10	30	1	54
Dundgovi	582	-	3	37	8	3	16	71	35	31	3	375
Umnugovi	998	-	5	108	14	10	20	8	63	171	6	593
Selenge	898	2	3	81	27	8	31	6	97	201	8	434
Tuv	657	-	1	44	23	1	22	47	77	156	11	275
East region	171	-	2	11	4	-	1	-	11	11	1	130
Dornod	50	-	-	3	1	-	-	-	5	-	-	41
Khentii	121	-	2	8	3	-	1	-	6	11	1	89
Ulaanbaatar	1 216	-	4	59	30	1	32	15	174	302	11	588

TABLE 5. NUMBER OF PERSONS INVOLVED IN ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and group of number of family members

Region, aimag and the capital city	TOTAL				
		1	2-5	6-9	10 +
TOTAL	9 596	571	7 391	1 597	37
West region	3 597	115	2 752	723	7
Bayan-Ulgii	137	1	80	55	1
Govi-Altai	1 674	64	1 356	252	2
Zavkhan	426	15	346	65	-
Uvs	539	20	361	155	3
Khovd	821	15	609	196	1
Khangai region	1 300	91	975	219	15
Arkhangai	129	16	89	18	6
Bayankhongor	745	52	580	110	3
Bulgan	43	9	32	2	-
Uvurkhangai	284	5	216	60	3
Khuvsgul	99	9	58	29	3
Central region	3 312	247	2 589	468	8
Govisumber	60	-	49	11	-
Dornogovi	117	9	89	19	-
Dundgovi	582	45	441	95	1
Umnugovi	998	87	787	122	2
Selenge	898	63	705	125	5
Tuv	657	43	518	96	-
East region	171	20	129	20	2
Dornod	50	6	31	12	1
Khentii	121	14	98	8	1
Ulaanbaatar	1 216	98	946	167	5

TABLE 6. NUMBER OF PERSONS INVOLVED IN ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and employment status

Region, aimag and the capital city	Total	Leader of partnership / employer	Member of partnership	Leader/member of cooperative	Proprietors hipers (singly) in artisanal mining	Utility workers in artisanal mining	Unpaid family worker
TOTAL	9 596	326	1 698	120	4 581	1 893	978
West region	3 597	86	353	8	2 262	312	576
Bayan-Ulgii	137	2	19	1	73	26	16
Govi-Altai	1 674	11	80	-	987	116	480
Zavkhan	426	31	54	3	254	60	24
Uvs	539	41	183	4	243	30	38
Khovd	821	1	17	-	705	80	18
Khangai region	1 300	62	340	1	672	93	132
Arkhangai	129	4	29	-	60	19	17
Bayankhongor	745	44	283	1	273	49	95
Bulgan	43	11	2	-	26	3	1
Uvurkhangai	284	3	26	-	229	8	18
Khuvsgul	99	-	-	-	84	14	1
Central region	3 312	154	807	111	1 504	517	219
Govisumber	60	-	-	-	-	60	-
Dornogovi	117	14	32	1	42	22	6
Dundgovi	582	25	340	108	80	22	7
Umnugovi	998	6	7	1	588	220	176
Selenge	898	88	333	1	288	169	19
Tuv	657	21	95	-	506	24	11
East region	171	23	97	-	45	3	3
Dornod	50	-	6	-	44	-	-
Khentii	121	23	91	-	1	3	3
Ulaanbaatar	1 216	1	101	-	98	968	48

TABLE 7. NUMBER OF PERSONS INVOLVED IN ARTISANAL AND SMALL-SCALE MINERS, by sex and employment status

Sex	TOTAL	Leader of partnership / employer	Member of partnership	Leader/member of cooperative	Proprietors hipers (singly) in artisanal mining	Utility workers in artisanal mining	Unpaid family worker
TOTAL	9 596	326	1 698	120	4 581	1 893	978
Male	7 295	245	1 262	62	3 954	1 452	320
Female	2 301	81	436	58	627	441	658

TABLE 8. NUMBER OF LEADERS AND MEMBERS OF PARTNERSHIPS, by region, aimag and the capital city and type of income distributions

Region, aimag and the capital city	TOTAL	Share-out equal	Share-out piece-payment	Share-out constant percentage	Don't share-out	Fixed pay
TOTAL	2 024	872	776	33	109	234
West region	439	361	56	1	19	2
Bayan-Ulgii	21	20	-	1	-	-
Govi-Altai	91	72	5	-	14	-
Zavkhan	85	79	3	-	3	-
Uvs	224	186	35	-	1	2
Khovd	18	4	13	-	1	-
Khangai region	402	94	167	11	13	117
Arkhangai	33	2	-	1	2	28
Bayankhongor	327	83	142	9	10	83
Bulgan	13	1	5	-	1	6
Uvurkhangai	29	8	20	1	-	-
Khuvsgul	0	-	-	-	-	-
Central region	961	404	356	16	71	114
Govisumber	0	-	-	-	-	-
Dornogovi	46	2	35	-	8	1
Dundgovi	365	125	187	1	52	-
Umnugovi	13	12	-	1	-	-
Selenge	421	175	118	13	6	109
Tuv	116	90	16	1	5	4
East region	120	7	106	5	1	1
Dornod	6	-	5	1	-	-
Khentii	114	7	101	4	1	1
Ulaanbaatar	102	6	91	-	5	-

TABLE 9. NUMBER OF AUXILIARY WORKERS IN ARTISANAL AND SMALL-SCALE MINING, by region, aimag and the capital city and role in artisanal mining activity

Region, aimag and the capital city	TOTAL	Extractor of minerals	Utility workers in artisanal mining	Buyer for mineral resources	Retailer of food and other goods	Canteen steward	Truck driver	Unpaid family worker	Investor
TOTAL	1 893	121	802	107	106	189	380	166	22
West region	312	35	48	35	50	49	62	29	4
Bayan-Ulgii	26	3	12	-	-	-	9	2	-
Govi-Altai	116	1	2	8	36	33	28	8	-
Zavkhan	60	12	10	19	-	3	2	13	1
Uvs	30	7	1	-	9	4	8	1	-
Khovd	80	12	23	8	5	9	15	5	3
Khangai region	93	16	11	10	14	9	5	28	-
Arkhangai	19	1	5	-	5	-	1	7	-
Bayankhongor	49	12	2	9	6	9	4	7	-
Bulgan	3	-	3	-	-	-	-	-	-
Uvurkhangai	8	3	-	-	3	-	-	2	-
Khuvsgul	14	-	1	1	-	-	-	12	-
Central region	517	63	153	14	32	70	135	43	7
Govisumber	60	-	54	1	-	-	4	1	-
Dornogovi	22	4	9	-	-	2	5	2	-
Dundgovi	22	-	1	-	1	7	13	-	-
Umnugovi	220	51	74	8	26	36	6	19	-
Selenge	169	5	11	5	4	23	98	17	6
Tuv	24	3	4	-	1	2	9	4	1
East region	3	-	-	-	-	3	-	-	-
Khentii	3	-	-	-	-	3	-	-	-
Ulaanbaatar	968	7	590	48	10	58	178	66	11

TABLE 10. NUMBER OF AUXILIARY WORKERS IN ARTISANAL AND SMALL-SCALE MINING, by sex and role in artisanal mining activity

Sex	TOTAL	Extractor of minerals	Utility workers in artisanal mining	Buyer for mineral resources	Retailer of food and other goods	Canteen steward	Truck driver	Unpaid family worker	Investor
TOTAL	1 893	121	802	107	106	189	380	166	22
Male	1 452	105	736	81	33	22	358	97	20
Female	441	16	66	26	73	167	22	69	2

TABLE 11. NUMBER OF AUXILIARY WORKERS IN ARTISANAL AND SMALL-SCALE MINING, by age group and role in artisanal mining activity

Age group	TOTAL	Extractor of minerals	Utility workers in artisanal mining	Buyer for mineral resources	Retailer of food and other goods	Canteen steward	Truck driver	Unpaid family worker	Investor
TOTAL	1 893	121	802	107	106	189	380	166	22
10-14	1	-	-	-	-	-	-	1	-
15-17	8	1	4	-	2	-	-	1	-
18-19	32	1	23	-	-	-	3	5	-
20-24	176	5	112	5	9	9	20	16	-
25-29	303	25	149	11	10	11	68	26	3
30-34	320	24	154	13	13	21	71	21	3
35-39	313	19	135	15	17	37	64	23	3
40-44	243	13	87	19	16	37	43	25	3
45-49	207	16	62	14	13	26	50	24	2
50-54	163	9	40	15	18	27	32	16	6
55-59	95	7	28	11	7	16	19	5	2
60-64	18	1	6	3	-	3	3	2	-
65-69	12	-	2	-	1	2	6	1	-
70 +	2	-	-	1	-	-	1	-	-

TABLE 12. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and group of working years at artisanal mining

Region, aimag and the capital city	TOTAL							
		0-1	2-3	4-5	6-7	8-9	10-11	12 +
TOTAL	6 948	1 354	1 992	1 351	610	362	638	641
West region	2 614	594	865	529	277	104	131	114
Bayan-Ulgii	106	5	27	36	11	7	13	7
Govi-Altai	1 027	198	357	193	134	51	45	49
Zavkhan	337	229	48	33	3	8	11	5
Uvs	420	55	99	70	64	25	55	52
Khovd	724	107	334	197	65	13	7	1
Khangai region	963	114	160	159	143	83	146	158
Arkhangai	90	-	11	11	6	5	24	33
Bayankhongor	551	76	87	105	100	51	73	59
Bulgan	43	10	12	8	3	2	8	-
Uvurkhangai	207	12	25	19	29	21	36	65
Khuvsgul	72	16	25	16	5	4	5	1
Central region	2 440	391	674	491	137	129	297	321
Govisumber	54	12	12	5	7	5	7	6
Dornogovi	87	16	13	15	6	8	15	14
Dundgovi	521	110	194	191	7	7	7	5
Umnugovi	693	132	252	115	48	28	76	42
Selenge	617	70	142	94	31	33	102	145
Tuv	468	51	61	71	38	48	90	109
East region	164	57	56	23	16	8	3	1
Dornod	50	17	15	7	6	4	-	1
Khentii	114	40	41	16	10	4	3	-
Ulaanbaatar	767	198	237	149	37	38	61	47

TABLE 13. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by occupational classification and group of working years at artisanal mining

Occupational classification	TOTAL	0-1	2-3	4-5	6-7	8-9	10-11	12 +
TOTAL	6 948	1 354	1 992	1 351	610	362	638	641
Military service occupation	4	-	3	-	-	1	-	-
Manager	29	11	10	2	2	-	3	1
Specialist	441	150	153	57	15	10	31	25
Technician and assistant specialist	118	33	30	19	8	5	10	13
Clerk and office worker	24	7	5	8	1	-	2	1
Trade and service worker	85	15	23	18	2	5	7	15
Qualified specialist in agriculture, forestry and fishing	655	152	196	120	70	19	41	57
Workers in production, construction, handicraft and related works and services	612	127	163	111	37	27	61	86
Operator of machines, mechanisms, equipment, assembler	996	158	197	187	121	64	144	125
Simple work, occupation	53	17	16	6	2	3	5	4
No profession	3 931	684	1 196	823	352	228	334	314

TABLE 14. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and reasons for working at artisanal mining, in duplicated numbers

Region, aimag and the capital city	TOTAL	No permanent job	No other income earning jobs competed with artisanal mining	Requirements of other work places are high	Lost livestock	Earn income	Make own business	Other
TOTAL	9 589	3 851	667	588	595	3 526	311	51
West region	3 630	1 428	275	154	257	1 395	106	15
Bayan-Ulgii	223	70	25	13	7	70	38	-
Govi-Altai	1 321	475	126	76	62	565	14	3
Zavkhan	396	102	15	16	10	249	4	-
Uvs	624	334	57	25	49	144	15	-
Khovd	1 066	447	52	24	129	367	35	12
Khangai region	1 419	526	101	86	130	527	45	4
Arkhangai	94	6	2	2	9	75	-	-
Bayankhongor	815	345	43	55	82	262	24	4
Bulgan	104	39	25	2	-	21	17	-
Uvurkhangai	323	112	27	27	37	118	2	-
Khuvsgul	83	24	4		2	51	2	-
Central region	3 416	1 310	136	283	178	1 362	117	30
Govisumber	85	39	-	28	-	17	1	-
Dornogovi	121	77	4	11	1	24	4	-
Dundgovi	689	154	49	20	67	377	19	3
Umnugovi	836	279	22	41	24	445	13	12
Selenge	871	414	41	103	17	265	26	5
Tuv	814	347	20	80	69	234	54	10
East region	199	83	5	6	10	82	12	1
Dornod	52	22	-	2	-	27	1	-
Khentii	147	61	5	4	10	55	11	1
Ulaanbaatar	925	504	150	59	20	160	31	1

TABLE 15. TYPE OF DWELLING OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city

Region, aimag and the capital city	TOTAL						
		Ger	House	Tent	Hutting	Mud hut	Other
TOTAL	3 106	1 377	64	1 141	257	16	251
West region	1 303	515	17	625	83	12	51
Bayan-Ulgii	22	6	3	3	10	-	-
Govi-Altai	346	54	7	250	9	-	26
Zavkhan	63	9	1	39	2	-	12
Uvs	309	260	3	9	19	11	7
Khovd	563	186	3	324	43	1	6
Khangai region	527	364	7	106	18	-	32
Arkhangai	16	16	-	-	-	-	-
Bayankhongor	359	288	1	52	1	-	17
Bulgan	20	13	2	5	-	-	-
Uvurkhangai	64	46	2	12	-	-	4
Khuvsgul	68	1	2	37	17	-	11
Central region	1 132	399	32	378	154	3	166
Govisumber	0	-	-	-	-	-	-
Dornogovi	32	31	1	-	-	-	-
Dundgovi	195	189	3	1	-	-	2
Umnugovi	406	23	2	215	5	3	158
Selenge	367	103	24	156	84	-	-
Tuv	132	53	2	6	65	-	6
East region	107	71	2	32	1	1	-
Dornod	48	13	1	32	1	1	-
Khentii	59	58	1	-	-	-	-
Ulaanbaatar	37	28	6	-	1	-	2

TABLE 16. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and source of electricity of the operating place

Region, aimag and the capital city	TOTAL	No electricity	With electricity	Central power system	Diesel generators	Renewable power devices	Small power generators
TOTAL	3 106	1 664	1 442	72	56	524	790
West region	1 303	893	410	3	4	187	216
Bayan-Ulgii	22	15	7	2	-	1	4
Govi-Altai	346	283	63	-	1	11	51
Zavkhan	63	22	41	-	-	8	33
Uvs	309	137	172	-	2	111	59
Khovd	563	436	127	1	1	56	69
Khangai region	527	163	364	9	12	172	171
Arkhangai	16	-	16	-	-	11	5
Bayankhongor	359	60	299	1	3	153	142
Bulgan	20	7	13	3	9	-	1
Uvurkhangai	64	30	34	5	-	8	21
Khuvsgul	68	66	2	-	-	-	2
Central region	1 132	543	589	22	30	152	385
Dornogovi	32	23	9	-	1	1	7
Dundgovi	195	15	180	-	11	147	22
Umnugovi	406	211	195	-	-	4	191
Selenge	367	243	124	13	10	-	101
Tuv	132	51	81	9	8	-	64
East region	107	64	43	4	10	13	16
Dornod	48	47	1	1	-	-	-
Khentii	59	17	42	3	10	13	16
Ulaanbaatar	37	1	36	34	-	-	2

TABLE 17. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and source of electricity of the operating place

Type of minerals	TOTAL	No electricity	With electricity	Central power system	Diesel generators	Renewable power devices	Small power generators
TOTAL	3 106	1 664	1 442	72	56	524	790
Gold	2 623	1 501	1 122	32	33	348	709
Coal	64	30	34	34	-	-	-
Wolfram	271	45	226	3	22	161	40
Tin	100	54	46	2	1	15	28
Limestone	1	1	-	-	-	-	-
Gemstone	19	10	9	-	-	-	9
Sand and gravel	3	2	1	-	-	-	1
Other	25	21	4	1	-	-	3

TABLE 18. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and source of electricity of the operating place

Employment status	TOTAL	No electricity	With electricity	Central power system	Diesel generators	Renewable power devices	Small power generators
TOTAL	3 106	1 664	1 442	72	56	524	790
Leader of partnership/employer	245	82	163	8	19	54	82
Member of partnership	862	287	575	11	18	289	257
Leader/member of cooperative	4	2	2	-	-	2	-
Proprietorship (singly) in artisanal mining	1 995	1,293	702	53	19	179	451

TABLE 19. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and source of drinking water

Region, aimag and the capital city	TOTAL	Water station connected to central water supply system	Protected well	Protected springs	Refined bottled water	Water station not connected to central water system	Tanker trucks	Unprotected well, springs, river, stream, lake, pond
TOTAL	5 998	65	314	107	151	14	3 150	2 197
West region	2 527	12	68	60	3	4	1 455	925
Bayan-Ulgii	91	-	11	1	-	1	25	53
Govi-Altai	1 024	5	42	50	-	2	572	353
Zavkhan	314	-	14	1	-	-	295	4
Uvs	411	4	-	-	1	1	82	323
Khovd	687	3	1	8	2	-	481	192
Khangai region	935	8	141	24	4	1	378	379
Arkhangai	84	2	-	-	-	-	73	9
Bayankhongor	537	3	101	7	2	1	227	196
Bulgan	39	2	10	1	-	-	6	20
Uvurkhangai	204	1	30	16	-	-	72	85
Khuvsgul	71	-	-	-	2	-	-	69
Central region	2 202	37	82	22	142	8	1 059	852
Dornogovi	74	-	-	-	-	-	71	3
Dundgovi	520	5	1	1	96	1	412	4
Umnugovi	549	-	37	4	4	-	135	369
Selenge	598	30	38	7	4	5	117	397
Tuv	461	2	6	10	38	2	324	79
East region	164	7	23	1	1	-	91	41
Dornod	50	-	1	-	1	-	18	30
Khentii	114	7	22	1	-	-	73	11
Ulaanbaatar	170	1	-	-	1	1	167	-

TABLE 20. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and source of drinking water

Employment status	TOTAL	Water station connected to central water supply system	Protected well	Protected springs	Refined bottled water	Water station not connected to central water system	Tanker trucks	Unprotected well, springs, river, stream, lake, pond
TOTAL	5 998	65	314	107	151	14	3 150	2 197
Leader of partnership/employer	303	2	61	11	1	2	127	99
Member of partnership	1 424	18	118	21	61	2	721	483
Leader/member of cooperative	113	1	-	-	25	1	81	5
Proprietorship (singly) in artisanal mining	4 158	44	135	75	64	9	2 221	1 610

TABLE 21. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and level of knowledge of children's rights

Region, aimag and the capital city	TOTAL				
		Good	Average	Weak	Don't know
TOTAL	6 948	2 408	3 395	645	500
West region	2 614	880	1 264	283	187
Bayan-Ulgii	106	75	24	3	4
Govi-Altai	1 027	363	502	102	60
Zavkhan	337	88	208	28	13
Uvs	420	105	183	76	56
Khovd	724	249	347	74	54
Khangai region	963	310	437	115	101
Arkhangai	90	18	40	16	16
Bayankhongor	551	191	250	65	45
Bulgan	43	8	35	-	-
Uvurkhangai	207	64	79	29	35
Khuvsgul	72	29	33	5	5
Central region	2 440	864	1 173	213	190
Govisumber	54	9	24	10	11
Dornogovi	87	35	42	4	6
Dundgovi	521	129	300	53	39
Umnugovi	693	209	352	67	65
Selenge	617	320	237	32	28
Tuv	468	162	218	47	41
East region	164	62	84	9	9
Dornod	50	12	34	-	4
Khentii	114	50	50	9	5
Ulaanbaatar	767	292	437	25	13

TABLE 22. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by sex and level of knowledge of children's rights

Sex	Total				
		Good	Average	Weak	Don't know
TOTAL	6 948	2 408	3 395	645	500
Male	6 068	2 036	2 979	594	459
Female	880	372	416	51	41

TABLE 23. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by age group and level of knowledge of children's rights

Age group	Total				
		Good	Average	Weak	Don't know
TOTAL	6 948	2 408	3 395	645	500
10-14	1	-	-	-	1
15-17	15	5	6	2	2
18-19	86	19	47	13	7
20-24	497	113	267	57	60
25-29	1 041	314	532	100	95
30-34	1 165	378	582	125	80
35-39	1 146	401	564	103	78
40-44	1 067	433	482	97	55
45-49	871	325	422	78	46
50-54	636	250	294	40	52
55-59	295	121	134	22	18
60-64	98	36	54	6	2
65-69	25	11	9	2	3
70 +	5	2	2	-	1

TABLE 24. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by sex and usage of mobile phone

Sex	Total				
		Yes	%	No	%
TOTAL	6 948	6 474	93.2	474	6.8
Male	6 068	5 643	93.0	425	7.0
Female	880	831	94.4	49	5.6

TABLE 25. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by age group and usage of mobile phone

Age group	Total				
		Yes	%	No	%
TOTAL	6 948	6 474	93.2	474	6.8
10-14	1	1	100.0	-	-
15-17	15	13	86.7	2	13.3
18-19	86	81	94.2	5	5.8
20-24	497	465	93.6	32	6.4
25-29	1 041	980	94.1	61	5.9
30-34	1 165	1 107	95.0	58	5.0
35-39	1 146	1 054	92.0	92	8.0
40-44	1 067	1 002	93.9	65	6.1
45-49	871	809	92.9	62	7.1
50-54	636	577	90.7	59	9.3
55-59	295	269	91.2	26	8.8
60-64	98	88	89.8	10	10.2
65-69	25	23	92.0	2	8.0
70 +	5	5	100.0	-	-

TABLE 26. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and usage of mobile phone

Region, aimag and the capital city	Total				
		Yes	%	No	%
TOTAL	6 948	6 474	93.2	474	6.8
West region	2 614	2 427	92.8	187	7.2
Bayan-Ulgii	106	85	80.2	21	19.8
Govi-Altai	1 027	980	95.4	47	4.6
Zavkhan	337	310	92.0	27	8.0
Uvs	420	396	94.3	24	5.7
Khovd	724	656	90.6	68	9.4
Khangai region	963	870	90.3	93	9.7
Arkhangai	90	76	84.4	14	15.6
Bayankhongor	551	515	93.5	36	6.5
Bulgan	43	43	100.0	-	-
Uvurkhangai	207	186	89.9	21	10.1
Khuvsgul	72	50	69.4	22	30.6
Central region	2 440	2 298	94.2	142	5.8
Govisumber	54	49	90.7	5	9.3
Dornogovi	87	85	97.7	2	2.3
Dundgovi	521	508	97.5	13	2.5
Umnugovi	693	652	94.1	41	5.9
Selenge	617	573	92.9	44	7.1
Tuv	468	431	92.1	37	7.9
East region	164	156	95.1	8	4.9
Dornod	50	49	98.0	1	2.0
Khentii	114	107	93.9	7	6.1
Ulaanbaatar	767	723	94.3	44	5.7

TABLE 27. MOST NEEDED INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and type of information, in duplicated number

Region, aimag and the capital city	TOTAL	Law and politics	Daily information	Artisanal and small-scale mining	Rehabilitation and environmental issue	Social welfare and service, health care and hygiene and safety	Other
TOTAL	19 358	2 852	3 314	3 711	2 212	4 486	2 783
West region	7 074	883	1 385	1 366	847	1 554	1 039
Bayan-Ulgii	316	31	42	87	8	123	25
Govi-Altai	2 633	291	555	455	351	568	413
Zavkhan	1 041	192	163	291	200	127	68
Uvs	1 292	204	150	294	175	301	168
Khovd	1 792	165	475	239	113	435	365
Khangai region	2 698	390	427	510	378	649	344
Arkhangai	156	38	11	21	60	19	7
Bayankhongor	1 624	216	227	330	210	455	186
Bulgan	129	38	2	42	42	2	3
Uvurkhangai	652	91	134	97	54	141	135
Khuvsgul	137	7	53	20	12	32	13
Central region	7 395	1 092	1 195	1 347	839	1 764	1 158
Govisumber	112	7	37	2	2	40	24
Dornogovi	304	25	59	30	14	118	58
Dundgovi	1 567	180	245	281	202	370	289
Umnugovi	2 274	344	372	469	287	472	330
Selenge	1 759	279	191	348	242	416	283
Tuv	1 379	257	291	217	92	348	174
East region	529	72	78	104	42	187	46
Dornod	100	32	28	19	2	14	5
Khentii	429	40	50	85	40	173	41
Ulaanbaatar	1 662	415	229	384	106	332	196

TABLE 28. MOST NEEDED INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS, by age group and type of information, in duplicated number

Age group	TOTAL	Law and politics	Daily information	Artisanal and small-scale mining	Rehabilitation and environmental issue	Social welfare and service, health care and hygiene and safety	Other
TOTAL	19 358	2 852	3 314	3 711	2 212	4 486	2 783
10-14	1	-	-	-	-	-	1
15-17	27	3	6	6	-	4	8
18-19	203	27	47	33	14	45	37
20-24	1 214	210	222	236	131	240	175
25-29	2 792	441	477	561	316	585	412
30-34	3 130	465	565	610	367	662	461
35-39	3 138	486	529	626	360	719	418
40-44	3 224	420	525	613	387	813	466
45-49	2 582	381	410	487	305	623	376
50-54	1 805	244	317	333	192	458	261
55-59	859	121	147	147	98	232	114
60-64	293	42	51	46	33	78	43
65-69	77	10	16	11	8	21	11
70 +	13	2	2	2	1	6	-

TABLE 29. MOST NEEDED INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS, by employment status and type of information, in duplicated number

Employment status	TOTAL	Law and politics	Daily information	Artisanal and small-scale mining	Rehabilitation and environmental issue	Social welfare and service, health care and hygiene and safety	Other
TOTAL	19 358	2 852	3 314	3 711	2 212	4 486	2 783
Leader of partnership/employer	1 105	185	111	202	162	296	149
Member of partnership	4 079	584	574	799	532	1 009	581
Leader/member of cooperative	321	17	72	47	36	89	60
Proprietorship (singly) in artisanal mining	11 564	1 561	2 194	2 231	1 315	2 555	1 708
Utility workers in artisanal mining	2 203	495	342	421	158	514	273
Unpaid family worker	86	10	21	11	9	23	12

TABLE 30. SOURCE OF INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS, by source of information, in duplicated numbers

Source of information	Number	Share to total
TOTAL	14 920	100.0
TV	6 336	42.5
Radio	560	3.8
Internet, social media (facebook, twitter etc)	1 113	7.5
Mobile phone	1 332	8.9
Other people	2 385	16.0
Newsletter	303	2.0
Newspaper and magazine	921	6.2
Printed materials	376	2.5
Meeting	1 571	10.5
Other	23	0.2

TABLE 31. SOURCE OF INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and source of information, in duplicated numbers

Region, aimag and the capital city	TOTAL	TV	Radio	Internet, social media (facebook, twitter etc)	Mobile phone	Other people	Newsletter	Newspaper and magazine	Printed materials	Meeting	Other
TOTAL	14 920	6 336	560	1 113	1 332	2 385	303	921	376	1 571	23
West region	5 533	2 342	301	229	410	971	117	308	145	704	6
Bayan-Ulgii	324	95	54	4	12	51	2	17	50	38	1
Govi-Altai	1 959	895	183	64	107	331	36	106	15	220	2
Zavkhan	990	308	9	69	154	190	11	32	22	195	-
Uvs	979	390	31	44	74	167	41	64	35	132	1
Khovd	1 281	654	24	48	63	232	27	89	23	119	2
Khangai region	1 820	875	29	120	143	266	28	104	22	233	-
Arkhangai	118	87	2	1	1	1	1	1	2	22	-
Bayankhongor	1 148	495	25	81	88	164	17	80	13	185	-
Bulgan	137	42	-	27	22	21	9	4	1	11	-
Uvurkhangai	307	180	1	9	30	57	-	14	3	13	-
Khuvsgul	110	71	1	2	2	23	1	5	3	2	-
Central region	5 765	2 247	179	567	656	879	81	383	174	584	15
Govisumber	103	51	1	10	2	28	1	7	1	2	-
Dornogovi	264	80	16	17	18	43	10	30	17	33	-
Dundgovi	1 067	497	53	88	50	85	22	73	40	159	-
Umnugovi	1 679	631	62	165	233	272	17	103	40	156	-
Selenge	1 524	527	21	132	215	279	19	93	56	167	15
Tuv	1 128	461	26	155	138	172	12	77	20	67	-
East region	420	133	14	35	14	69	34	79	11	30	1
Dornod	85	38	3	3	2	36	-	1	1	1	-
Khentii	335	95	11	32	12	33	34	78	10	29	1
Ulaanbaatar	1 382	739	37	162	109	200	43	47	24	20	1

TABLE 32. SOURCE OF INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS, by age group and source of information, in duplicated numbers

Age group	TOTAL	TV	Radio	Internet, social media (facebook, twitter etc)	Mobile phone	Other people	Newsletter	Newspaper and magazine	Printed materials	Meeting	Other
TOTAL	14 920	6 336	560	1 113	1 332	2 385	303	921	376	1 571	23
10-14	2	1	-	1	-	-	-	-	-	-	-
15-17	28	13	1	2	2	7	1	1	1	-	-
18-19	176	79	3	29	18	24	4	9	3	7	-
20-24	1 056	434	19	168	118	137	21	46	30	83	-
25-29	2 237	947	67	277	231	304	43	105	57	205	1
30-34	2 488	1 062	72	213	248	402	41	130	60	255	5
35-39	2 419	1 053	95	148	227	402	44	140	55	253	2
40-44	2 327	984	88	123	190	401	52	157	60	269	3
45-49	1 933	792	92	86	153	326	49	143	55	233	4
50-54	1 377	579	59	49	99	236	32	107	40	172	4
55-59	610	273	45	10	32	104	11	55	11	67	2
60-64	208	90	15	5	12	35	5	23	3	18	2
65-69	50	24	4	2	2	6	-	5	1	6	-
70 +	9	5	-	-	-	1	-	-	-	3	-

TABLE 33. SOURCE OF INFORMATION OF ARTISANAL AND SMALL-SCALE MINERS, by type of minerals and source of information, in duplicated numbers

Type of minerals	TOTAL	TV	Radio	Internet, social media (facebook, twitter etc)	Mobile phone	Other people	Newsletter	Newspaper and magazine	Printed materials	Meeting	Other
TOTAL	14 920	6 336	560	1 113	1 332	2 385	303	921	376	1 571	23
Gold	10 978	4 602	380	769	1 062	1 858	180	670	220	1 218	19
Coal	1 278	701	40	141	110	193	43	23	13	14	-
Spar	1 702	704	78	146	75	171	66	176	67	218	1
Wolfram	421	163	22	14	32	65	2	25	40	56	2
Limestone	42	13	12	-	6	9	-	1	1	-	-
Gemstone	137	47	-	20	20	14	4	3	8	21	-
Sand and gravel	21	7	-	1	1	3	-	3	4	2	-
Other	341	99	28	22	26	72	8	20	23	42	1



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TABLE 34. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and level of knowledge of legal environment, labor protection and safety

Region, aimag and the capital city	TOTAL			
		Satisfied	Fair	Dissatisfied
TOTAL	6 948	1 355	4 483	1 110
West region	2 614	365	1 762	487
Bayan-Ulgii	106	25	81	-
Govi-Altai	1 027	201	687	139
Zavkhan	337	19	240	78
Uvs	420	69	246	105
Khovd	724	51	508	165
Khangai region	963	187	584	192
Arkhangai	90	1	65	24
Bayankhongor	551	133	329	89
Bulgan	43	4	39	-
Uvurkhangai	207	38	106	63
Khuvsgul	72	11	45	16
Central region	2 440	561	1 499	380
Govisumber	54	4	35	15
Dornogovi	87	8	72	7
Dundgovi	521	182	296	43
Umnugovi	693	57	409	227
Selenge	617	216	353	48
Tuv	468	94	334	40
East region	164	38	97	29
Dornod	50	9	23	18
Khentii	114	29	74	11
Ulaanbaatar	767	204	541	22

TABLE 35. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by age group and level of knowledge of legal environment, labor protection and safety

Age group	TOTAL			
		Satisfied	Fair	Dissatisfied
TOTAL	6 948	1 355	4 483	1 110
10-14	1	-	-	1
15-17	15	1	9	5
18-19	86	7	60	19
20-24	497	86	313	98
25-29	1 041	183	698	160
30-34	1 165	206	772	187
35-39	1 146	222	754	170
40-44	1 067	242	632	193
45-49	871	179	582	110
50-54	636	139	405	92
55-59	295	66	180	49
60-64	98	20	57	21
65-69	25	4	16	5
70 +	5	-	5	-

TABLE 36. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by sex and level of knowledge of legal environment, labor protection and safety

Age group	TOTAL			
		Satisfied	Fair	Dissatisfied
TOTAL	6 948	1 355	4 483	1 110
Male	6 068	1 169	3 940	959
Female	880	186	543	151

TABLE 37. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by employment status and level of knowledge of legal environment, labor protection and safety

Employment status	TOTAL			
		Satisfied	Fair	Dissatisfied
TOTAL	6 948	1 355	4 483	1 110
Leader of partnership/employer	303	108	184	11
Member of partnership	1 424	382	939	103
Leader/member of cooperative	113	41	54	18
Proprietorship (singly) in artisanal mining	4 158	647	2 662	849
Utility workers in artisanal mining	923	177	626	120
Unpaid family worker	27	0	18	9

TABLE 38. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and type of accidents, in percentage

Region, aimag and the capital city	TOTAL	Not affected by accidents	Affected by accidents	Lack of air	Hit by landslide	Burn	Freeze	Fall to the hole	Other
TOTAL	5 998	5 879	119	19.5	30.9	2.0	6.0	28.2	13.4
West region	2 490	2 490	37	11.6	30.2	2.3	4.7	32.6	18.6
Bayan-Ulgii	91	91	-	-	-	-	-	-	-
Govi-Altai	1 024	1 010	14	-	42.9	-	7.1	50.0	-
Zavkhan	314	310	4	20.0	-	20.0	-	40.0	20.0
Uvs	411	397	14	21.1	26.3	-	5.3	15.8	31.6
Khovd	687	682	5	-	40.0	-	-	40.0	20.0
Khangai region	935	908	27	28.6	22.9	5.7	11.4	25.7	5.7
Arkhangai	84	84	-	-	-	-	-	-	-
Bayankhongor	537	520	17	55.6	22.2	-	-	11.1	11.1
Bulgan	39	39	-	-	-	-	-	-	-
Uvurkhangai	204	200	4	-	57.1	-	-	42.9	-
Khuvsgul	71	65	6	-	-	20.0	40.0	40.0	-
Central region	2 202	2 157	45	15.3	37.3	-	5.1	28.8	13.6
Dornogovi	74	71	3	-	50.0	-	-	25.0	25.0
Dundgovi	520	518	2	-	50.0	-	-	50.0	-
Umnugovi	549	530	19	25.0	33.3	-	8.3	29.2	4.2
Selenge	598	585	13	10.0	35.0	-	5.0	25.0	25.0
Tuv	461	453	8	11.1	44.4	-	-	33.3	11.1
East region	164	160	4	-	50.0	-	-	50.0	-
Dornod	50	50	-	-	-	-	-	-	-
Khentii	114	110	4	-	50.0	-	-	50.0	-
Ulaanbaatar	170	164	6	62.5	12.5	-	-	-	25.0

TABLE 39. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by age group and type of accidents, in percentage

Age group	TOTAL	Not affected by accidents	Affected by accidents						
				Lack of air	Hit by landslide	Burn	Freeze	Fall to the hole	Other
TOTAL	5 998	5 879	119	19.5	30.9	2.0	6.0	28.2	13.4
10-14	1	1	-	-	-	-	-	-	-
15-17	10	9	1	-	-	-	-	-	100.0
18-19	62	62	-	-	-	-	-	-	-
20-24	376	373	3	-	75.0	-	-	25.0	-
25-29	863	848	15	15.0	30.0	5.0	15.0	15.0	20.0
30-34	983	963	20	20.0	36.0	4.0	8.0	28.0	4.0
35-39	987	960	27	17.6	29.4	-	8.8	29.4	14.7
40-44	964	944	20	28.0	20.0	-	4.0	36.0	12.0
45-49	787	772	15	27.8	22.2	5.6	-	33.3	11.1
50-54	586	573	13	17.6	35.3	-	-	29.4	17.6
55-59	260	256	4	-	75.0	-	-	-	25.0
60-64	91	90	1	-	-	-	-	100.0	-
65-69	23	23	-	-	-	-	-	-	-
70 +	5	5	-	-	-	-	-	-	-

TABLE 40. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by sex and type of accidents, in percentage

Sex	TOTAL	Not affected by accidents	Affected by accidents						
				Lack of air	Hit by landslide	Burn	Freeze	Fall to the hole	Other
TOTAL	5 998	119	5 879	19.5	30.9	2.0	6.0	28.2	13.4
Male	5 206	110	5 096	19.7	30.7	2.2	5.8	28.5	13.1
Female	792	9	783	16.7	33.3	-	8.3	25.0	16.7

TABLE 41. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and type of accidents, in percentage

Employment status	TOTAL	Not affected by accidents	Affected by accidents						
				Lack of air	Hit by landslide	Burn	Freeze	Fall to the hole	Other
TOTAL	5 998	5 879	119	19.5	30.9	2.0	6.0	28.2	13.4
Leader of partnership/employer	303	292	11	26.7	20.0	-	-	33.3	20.0
Member of partnership	1 424	1 401	23	18.5	18.5	3.7	7.4	25.9	25.9
Leader/member of cooperative	113	110	3	-	66.7	-	-	33.3	-
Proprietorship (singly) in artisanal mining	4 158	4 076	82	19.2	34.6	1.9	6.7	27.9	9.6

TABLE 42. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of disease and region, aimag and the capital city, in overlapping numbers

Region, aimag and the capital city	TOTAL		Number of persons not get sick	Number of persons get sick	Total number disease case	Diseases of the respiratory system				Backache		Diseases of the digestive system	Diseases of the cardiovascular system	Diseases of the skin and subcutaneous tissue	Diseases of the musculoskeletal system and connective tissue	Diseases of the genitourinary system	Injury, poisoning and certain other consequences of external cause	Diseases of the nervous system and sense organs	Certain infectious and parasitic diseases
TOTAL	5 998	5 668	330	610	157	218	58	47	24	40	16	14	17	19					
West region	2 527	2 429	98	180	46	58	28	16	6	6	6	1	9	4					
Bayan-Ulgii	91	82	9	24	9	6	6	1	-	-	1	1	-	-					
Govi-Altai	1 024	976	48	91	25	31	15	8	1	-	1	-	9	1					
Zavkhan	314	309	5	7	1	3	1		1	-	-	-	-	1					
Uvs	411	391	20	28	5	5	4	4	1	3	4	-	-	2					
Khovd	687	671	16	30	6	13	2	3	3	3	-	-	-	-					
Khangai region	935	855	80	190	45	54	16	17	13	14	8	9	5	9					
Arkhangai	84	83	1	2	-	1	-	-	1	-	-	-	-	-					
Bayankhongor	537	480	57	76	27	32	1	4	1	5	-	1	4	1					
Bulgan	39	39	-	-	-	-	-	-	-	-	-	-	-	-					
Uvurkhangai	204	182	22	112	18	21	15	13	11	9	8	8	1	8					
Khuvs gul	71	71	-	-	-	-	-	-	-	-	-	-	-	-					
Central region	2 202	2 071	131	199	54	86	14	14	3	15	2	3	2	6					
Dornogovi	74	74	-	-	-	-	-	-	-	-	-	-	-	-					
Dundgovi	520	501	19	29	7	11	7	1	-	-	1		1	1					
Umnugovi	549	510	39	60	11	35	4	3	-	3	1	2		1					
Selenge	598	562	36	56	11	26	2	3	1	9	-	1	1	2					
Tuv	461	424	37	54	25	14	1	7	2	3	-	-	-	2					
East region	164	154	10	16	7	9	-	-	-	-	-	-	-	-					
Dornod	50	50	-	-	-	-	-	-	-	-	-	-	-	-					
Khentii	114	104	10	16	7	9	-	-	-	-	-	-	-	-					
Ulaanbaatar	170	159	11	25	5	11	-	-	2	5	-	1	1	-					

TABLE 43. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by age group and type of disease, in overlapping numbers

Age group	TOTAL														
	Number of persons not get sick		Number of persons get sick		Total number disease case	Diseases of the respiratory system	Backache	Diseases of the digestive system	Diseases of the cardiovascular system	Diseases of the skin and subcutaneous tissue	Diseases of the musculoskeletal system and connective tissue	Diseases of the genitourinary system	Injury, poisoning and certain other consequences of external cause	Diseases of the nervous system and sense organs	Certain infectious and parasitic diseases
TOTAL	5 998	5 668	330	610	157	218	58	46	24	40	16	14	18	19	-
10-14	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
15-17	10	10	-	-	-	-	-	-	-	-	-	-	-	-	-
18-19	62	62	-	-	-	-	-	-	-	-	-	-	-	-	-
20-24	376	365	11	32	5	8	3	3	3	5	1	1	1	2	2
25-29	863	827	36	78	16	26	8	6	6	5	4	2	1	4	4
30-34	983	936	47	75	20	28	8	3	3	3	3	3	1	3	3
35-39	987	928	59	104	28	37	9	6	4	9	3	3	3	2	2
40-44	964	912	52	94	30	35	7	9	2	5	1	-	2	3	3
45-49	787	740	47	78	19	34	7	3	2	3	2	3	3	2	2
50-54	586	530	56	109	30	32	14	10	4	8	2	2	4	3	3
55-59	260	246	14	27	6	12	1	5	-	1	-	-	2	-	-
60-64	91	83	8	13	3	6	1	1	-	1	-	-	1	-	-
65-69	23	23	-	-	-	-	-	-	-	-	-	-	-	-	-
70 +	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 44. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by sex and type of disease, in overlapping numbers

Sex	TOTAL													
	Number of persons not get sick		Number of persons get sick		Total number disease case	Diseases of the respiratory system	Backache	Diseases of the digestive system	Diseases of the cardiovascular system	Diseases of the skin and subcutaneous tissue	Diseases of the musculoskeletal system and connective tissue	Diseases of the genitourinary system	Injury, poisoning and certain other consequences of external cause	Diseases of the nervous system and sense organs	Certain infectious and parasitic diseases
TOTAL	5 998	5 668	330	610	157	218	58	46	24	40	16	18	19	
Male	5 206	4 925	281	523	137	190	45	37	21	36	14	16	15	
Female	792	743	49	87	20	28	13	9	3	4	2	2	4	

TABLE 45. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and coverage at insurance, in overlapping numbers

Region, aimag and the capital city	TOTAL	Number of persons not covered at insurance	Number of person covered at insurance	Insured at	Social insurance	Health insurance
TOTAL	5 998	2 917	3 081	4 729	1 744	2 985
West region	2 527	1 223	1 304	1 836	573	1 263
Bayan-Ulgii	91	37	54	79	25	54
Govi-Altai	1 024	514	510	639	139	500
Zavkhan	314	82	232	396	166	230
Uvs	411	228	183	277	111	166
Khovd	687	362	325	445	132	313
Khangai region	935	478	457	685	234	451
Arkhangai	84	41	43	54	12	42
Bayankhongor	537	284	253	378	128	250
Bulgan	39	19	20	39	19	20
Uvurkhangai	204	97	107	174	69	105
Khuvsgul	71	37	34	40	6	34
Central region	2 202	1 057	1 145	1 911	807	1 104
Dornogovi	74	48	26	42	18	24
Dundgovi	520	131	389	649	263	386
Umnugovi	549	330	219	371	160	211
Selenge	598	280	318	562	271	291
Tuv	461	268	193	287	95	192
East region	164	99	65	108	47	61
Dornod	50	42	8	11	3	8
Khentii	114	57	57	97	44	53
Ulaanbaatar	170	60	110	189	83	106

TABLE 46. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by age group and coverage at insurance

Age group	TOTAL	Number of persons not covered at insurance	Number of person covered at insurance	Insured at (in overlapping numbers)	Social insurance	Health insurance
TOTAL	5 998	2 917	3 081	4 729	1 744	2 985
10-14	1	1	-	-	-	-
15-17	10	7	3	3	-	3
18-19	62	37	25	35	12	23
20-24	376	217	159	236	86	150
25-29	863	480	383	599	238	361
30-34	983	503	480	740	273	467
35-39	987	507	480	726	254	472
40-44	964	418	546	841	310	531
45-49	787	347	440	686	258	428
50-54	586	237	349	547	209	338
55-59	260	109	151	230	83	147
60-64	91	35	56	73	17	56
65-69	23	16	7	11	4	7
70 +	5	3	2	2	-	2

TABLE 47. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and coverage at insurance

Employment status	TOTAL	Number of persons not covered at insurance	Number of person covered at insurance	Insured at (in overlapping numbers)	Social insurance	Health insurance
TOTAL	5 998	2 917	3 081	4 729	1 744	2 985
Leader of partnership/employer	303	66	237	401	173	228
Member of partnership	1 424	540	884	1 451	598	853
Leader/member of cooperative	113	18	95	172	78	94
Proprietorship (singly) in artisanal mining	4 158	2 293	1 865	2 705	895	1 810



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TABLE 48. NUMBER OF MAIN ARTISANAL MINING OPERATORS, type of minerals and coverage at insurance

Region, aimag and the capital city	TOTAL	Number of persons not covered at insurance	Number of person covered at insurance	Insured at (in overlapping numbers)	Social insurance	Health insurance
TOTAL	5 998	2 917	3 081	4 729	1 744	2 985
Gold	4 865	2 445	2 420	3 654	1 313	2 341
Coal	135	87	48	76	30	46
Spar	685	229	456	760	313	447
Wolfram	157	63	94	153	63	90
Limestone	15	6	9	10	1	9
Gemstone	44	36	8	11	4	7
Sand and gravel	6	3	3	4	1	3
Other	91	48	43	61	19	42

TABLE 49. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and type of changes in livelihood

Region, aimag and the capital city	TOTAL	Number of persons with no changes in their life	Number of persons with changes in their life	Total number of changes in their life (in overlapping numbers)	Have a permanent work	Have an income source	Have an own house	Have a car	Other
TOTAL	5 998	1 705	4 293	5 494	610	3 753	248	766	117
West region	2 527	918	1 609	1 970	228	1 461	35	195	51
Bayan-Ulgii	91	15	76	118	13	68	9	16	12
Govi-Altai	1 024	431	593	714	106	545	3	51	9
Zavkhan	314	157	157	196	27	149	1	19	-
Uvs	411	85	326	437	47	305	16	63	6
Khovd	687	230	457	505	35	394	6	46	24
Khangai region	935	254	681	948	102	582	59	190	15
Arkhangai	84	8	76	83	-	71	-	12	-
Bayankhongor	537	105	432	674	95	372	48	151	8
Bulgan	39	5	34	43	5	26	2	9	1
Uvurkhangai	204	90	114	123	2	94	6	16	5
Khuvsgul	71	46	25	25	-	19	3	2	1
Central region	2 202	501	1 701	2 146	214	1 438	121	326	47
Dornogovi	74	20	54	67	5	49	2	11	-
Dundgovi	520	78	442	574	35	419	19	91	10
Umnugovi	549	147	402	460	17	330	12	76	25
Selenge	598	153	445	614	106	370	61	74	3
Tuv	461	103	358	431	51	270	27	74	9
East region	164	21	143	183	30	135	4	14	-
Dornod	50	2	48	48	1	47	-	-	-
Khentii	114	19	95	135	29	88	4	14	-
Ulaanbaatar	170	11	159	247	36	137	29	41	4

TABLE 50. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by group of working year and type of changes in livelihood

Group of working year	TOTAL	Number of persons with no changes in their life	Number of persons with changes in their life	Total number of changes in their life (in overlapping numbers)	Have a permanent work	Have an income source	Have an own house	Have a car	Other
Total	5 998	1 705	4 293	5 494	610	3 753	248	766	117
0-1	1 140	536	604	668	49	559	6	43	11
2-3	1 672	570	1 102	1 300	137	973	30	129	31
4-5	1 158	243	915	1 177	132	809	49	164	23
6-7	562	123	439	604	76	378	32	104	14
8-9	316	53	263	370	60	224	15	63	8
10-11	560	79	481	647	67	410	38	115	17
12 +	590	101	489	728	89	400	78	148	13

TABLE 51. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and type of changes in livelihood

Employment status	TOTAL	Number of persons with no changes in their life	Number of persons with changes in their life	Total number of changes in their life (in overlapping numbers)	Have a permanent work	Have an income source	Have an own house	Have a car	Other
TOTAL	5 998	1 705	4 293	5 494	610	3 753	248	766	117
Leader of partnership/employer	303	31	272	482	89	228	46	112	7
Member of partnership	1 424	208	1 216	1 660	225	1 092	82	237	24
Leader/member of cooperative	113	13	100	120	3	96	2	17	2
Proprietorship (singly) in artisanal mining	4 158	1 453	2 705	3 232	293	2 337	118	400	84

TABLE 52. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by sex, age group and type of changes in livelihood

Sex and age group		TOTAL	Number of persons with no changes in their life	Number of persons with changes in their life	Total number of changes in their life (in overlapping numbers)	Have a permanent work	Have an income source	Have an own house	Have a car	Other
Sex	TOTAL	5 998	1 705	4 293	5 494	610	3 753	248	766	117
	Male	5 206	1 522	3 684	4 690	508	3 210	207	663	102
	Female	792	183	609	804	102	543	41	103	15
Age group	10-14	1	1	-	-	-	-	-	-	-
	15-17	10	4	6	7	1	6	-	-	-
	18-19	62	25	37	47	4	33	2	6	2
	20-24	376	123	253	303	30	223	6	39	5
	25-29	863	256	607	782	87	533	34	120	8
	30-34	983	272	711	891	82	611	43	143	12
	35-39	987	269	718	924	108	626	46	127	17
	40-44	964	272	692	897	113	593	44	123	24
	45-49	787	211	576	753	82	516	38	98	19
	50-54	586	165	421	556	67	369	24	76	20
	55-59	260	68	192	231	23	169	6	27	6
	60-64	91	31	60	73	8	55	2	4	4
	65-69	23	6	17	27	5	16	3	3	-
	70 +	5	2	3	3	-	3	-	-	-

TABLE 53. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and contributions to the society and local development

Region, aimag and the capital city	TOTAL	Number of persons not made contributions	Number of persons made contributions	Total number of contributions (in overlapping numbers)	Created a permanent work place	Personally contributed to development of local government	Gave a donations	Participated in environmental protection and rehabilitation work	Other
TOTAL	5 998	4 673	1 325	1 998	224	362	750	550	112
West region	2 527	2 199	328	434	60	41	163	161	9
Bayan-Ulgii	91	80	11	17	4	4	5	4	-
Govi-Altai	1 024	941	83	102	21	3	24	50	4
Zavkhan	314	282	32	41	10	1	5	25	-
Uvs	411	267	144	209	11	25	107	62	4
Khovd	687	629	58	65	14	8	22	20	1
Khangai region	935	696	239	368	43	49	178	91	7
Arkhangai	84	68	16	18	-	-	16	2	-
Bayankhongor	537	351	186	299	39	41	136	79	4
Bulgan	39	29	10	16	3	3	6	4	-
Uvurkhangai	204	182	22	29	1	5	16	4	3
Khuvsgul		66	5	6	-	-	4	2	-
Central region	2 202	1 602	600	983	89	262	352	264	16
Dornogovi	74	55	19	37	6	7	13	11	
Dundgovi	520	248	272	440	36	114	208	74	8
Umnugovi	549	518	31	34	2	2	13	12	5
Selenge	598	356	242	422	38	129	100	153	2
Tuv	461	425	36	50	7	10	18	14	1
East region	164	119	45	65	6	8	31	20	-
Dornod	50	48	2	2	-	1	1	-	-
Khentii	114	71	43	63	6	7	30	20	-
Ulaanbaatar	170	57	113	148	26	2	26	14	80

TABLE 54. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by age group and contributions to the society and local development

Age group	TOTAL	Number of persons not made contributions	Number of persons made contributions	Total number of contributions (in overlapping numbers)	Created a permanent work place	Personally contributed to development of local government	Gave a donations	Participated in environmental protection and rehabilitation work	Other
TOTAL	5 998	4 673	1 325	1 998	224	362	750	550	112
10-14	1	1	-	-	-	-	-	-	-
15-17	10	9	1	1	-	-	-	1	-
18-19	62	53	9	11	1	1	5	2	2
20-24	376	309	67	91	9	23	30	22	7
25-29	863	699	164	237	31	41	92	61	12
30-34	983	781	202	306	33	59	108	83	23
35-39	987	766	221	327	34	52	134	88	19
40-44	964	732	232	363	41	58	152	98	14
45-49	787	581	206	311	35	58	108	91	19
50-54	586	449	137	215	24	45	73	64	9
55-59	260	204	56	89	9	18	30	28	4
60-64		70	21	34	6	6	12	8	2
65-69	23	17	6	10	1	1	4	3	1
70 +	5	2	3	3	-	-	2	1	-

TABLE 55. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and contributions to the society and local development, in duplicated numbers

Employment status	TOTAL	Number of persons not made contributions	Number of persons made contributions	Total number of contributions (in overlapping numbers)	Created a permanent work place	Personally contributed to development of local government	Gave a donations	Participated in environmental protection and rehabilitation work	Other
TOTAL	5 998	4 673	1 325	1 998	224	362	750	550	112
Leader of partnership/employer	303	78	225	413	57	80	150	122	4
Member of partnership	1 424	731	693	1 040	97	200	395	262	86
Leader/member of cooperative	113	83	30	46	2	5	26	12	1
Proprietorship (singly) in artisanal mining	4 158	3 781	377	499	68	77	179	154	21

TABLE 56. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and contributions to the society and

Type of minerals	TOTAL	Number of persons not made contributions	Number of persons made contributions	Total number of contributions (in overlapping numbers)	Created a permanent work place	Personally contributed to development of local government	Gave a donations	Participated in environmental protection and	Other
TOTAL	5 998	4 673	1 325	1 998	224	362	750	550	112
Gold	4 865	3 935	930	1 366	146	228	463	430	99
Coal	134	99	35	57	25	2	26	2	2
Spar	686	365	321	524	48	125	249	94	8
Wolfram	157	144	13	14	-	1	3	10	-
Limestone	15	8	7	13	4	4	2	3	-
Gemstone	44	40	4	4	-	-	-	4	-
Sand and gravel	6	6	-	-	-	-	-	-	-
Other	91	76	15	20	1	2	7	7	3

TABLE 57. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and whether received governmental and/or non governmental organization's support

Region, aimag and the capital city	TOTAL	Yes	%	No	%
TOTAL	5 998	1 032	17.2	4 966	82.8
West region	2 527	174	6.9	2 353	93.1
Bayan-Ulgii	91	-	-	91	100.0
Govi-Altai	1 024	24	2.3	1 000	97.7
Zavkhan	314	51	16.2	263	83.8
Uvs	411	71	17.3	340	82.7
Khovd	687	28	4.1	659	95.9
Khangai region	935	193	20.6	742	79.4
Arkhangai	84	26	31.0	58	69.0
Bayankhongor	537	124	23.1	413	76.9
Bulgan	39	13	33.3	26	66.7
Uvurkhangai	204	30	14.7	174	85.3
Khuvs gul	71	-	-	71	100.0
Central region	2 202	538	24.4	1 664	75.6
Dornogovi	74	13	17.6	61	82.4
Dundgovi	520	235	45.2	285	54.8
Umnugovi	549	5	0.9	544	99.1
Selenge	598	263	44.0	335	56.0
Tuv	461	22	4.8	439	95.2
East region	164	66	40.2	98	59.8
Dornod	50	1	2.0	49	98.0
Khentii	114	65	57.0	49	43.0
Ulaanbaatar	170	61	35.9	109	64.1

TABLE 58. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by age group and whether received governmental and/or non governmental organization's support

Age group	TOTAL				
		Yes	%	No	%
TOTAL	5 998	1 032	17.2	4 966	82.8
10-14	1	-	-	1	100.0
15-17	10	1	10.0	9	90.0
18-19	62	8	12.9	54	87.1
20-24	376	65	17.3	311	82.7
25-29	863	120	13.9	743	86.1
30-34	983	156	15.9	827	84.1
35-39	987	154	15.6	833	84.4
40-44	964	180	18.7	784	81.3
45-49	787	150	19.1	637	80.9
50-54	586	116	19.8	470	80.2
55-59	260	52	20.0	208	80.0
60-64	91	21	-	70	76.9
65-69	23	7	30.4	16	69.6
70 +	5	2	40.0	3	60.0

TABLE 59. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and whether received governmental and/or non governmental organization's support

Employment status	TOTAL				
		Yes	%	No	%
TOTAL	5 998	1 032	17.2	4 966	82.8
Leader of partnership/employer	303	197	65.0	106	35.0
Member of partnership	1 424	718	50.4	706	49.6
Leader/member of cooperative	113	15	13.3	98	86.7
Proprietorship (singly) in artisanal mining	4 158	102	2.5	4 056	97.5

TABLE 60. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and whether received governmental and/or non governmental organization's support

Type of minerals	TOTAL				
		Yes	%	No	%
TOTAL	5 998	1 032	17.2	4 966	82.8
Gold	4 865	714	14.7	4 151	85.3
Coal	134	2	1.5	132	98.5
Spar	686	305	44.5	381	55.5
Wolfram	157	4	2.5	153	97.5
Limestone	15	-	-	15	100.0
Gemstone	44	1	2.3	43	97.7
Sand and gravel	6	1	16.7	5	83.3
Other	91	5	5.5	86	94.5

TABLE 61. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and type of difficulties faced with

Region, aimag and the capital city	TOTAL																								
	Number of persons not faced with difficulties		Number of persons faced with difficulties		Total number of difficulties (in overlapping numbers)		Legal environment is not well established		Mineral's output is low		Field of extraction is limited		Financial problems (get a loan)		Capacity of equipment is low		Organizational problem		Inspection and burden are high		Tax issues are difficult		Difficult to get a timber permission		Other
TOTAL	5 998	2 350	3 648	10 894	1 564	2 484	2 144	877	652	629	2 146	276	82	40											
West region	2 527	1 125	1 402	4 227	575	1 041	824	323	255	242	863	72	18	14											
Bayan-Ulgii	91	22	69	170	16	46	21	13	5	6	55	7	-	1											
Govi-Altai	1 024	530	494	1 485	171	378	263	118	117	93	301	34	4	6											
Zavkhan	314	23	291	1 002	189	223	235	27	34	59	229	5	1	-											
Uvs	411	164	247	682	109	171	149	50	62	35	86	11	6	3											
Khovd	687	386	301	888	90	223	156	115	37	49	192	15	7	4											
Khangai region	935	400	535	1 591	199	369	368	107	94	104	287	49	3	11											
Arkhangai	84	61	23	64	2	12	16	3	5	7	16	2	1	-											
Bayankhongor	537	212	325	1 003	128	212	242	69	52	63	192	37	2	6											
Bulgan	39	12	27	98	23	24	24	6	14	4	2	1	-	-											
Uvurkhangai	204	77	127	339	44	94	74	19	16	17	61	9	-	5											
Khuvsgul	71	38	33	87	2	27	12	10	7	13	16	-	-	-											
Central region	2 202	745	1 457	4 538	745	881	881	365	280	275	953	130	15	13											
Dornogovi	74	7	67	240	17	62	56	34	22	6	30	12	1	-											
Dundgovi	520	370	150	463	66	119	64	26	35	44	64	44	1	-											
Umnugovi	549	93	456	1 333	203	279	233	104	57	50	395	12	-	-											
Selenge	598	219	379	1 129	212	261	230	92	42	56	192	27	5	12											
Tuv	461	56	405	1 373	247	160	298	109	124	119	272	35	8	1											
East region	164	36	128	243	13	119	13	48	16	4	22	4	3	1											
Dornod	50	5	45	102	5	43	4	24	1	1	22	1	-	1											
Khentii	114	31	83	141	8	76	9	24	15	3	-	3	3	-											
Ulaanbaatar	170	44	126	295	32	74	58	34	7	4	21	21	43	1											

TABLE 62. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of difficulties and type of minerals, in duplicated numbers

Type of difficulties	TOTAL									
	Gold	Coal	Spar	Wolfram	Limestone	Gemstone	Sand and gravel	Other		
TOTAL	5 998	4 865	135	685	157	15	44	6	91	
Number of persons not faced with difficulties	3 648	3 060	70	279	134	11	38	4	52	
Number of persons faced with difficulties	2 350	1 805	65	406	23	4	6	2	39	
Total number of difficulties	10 894	9 136	194	784	486	25	124	9	136	
Legal environment is not well established	1 564	1 355	26	81	53	1	23	2	23	
Mineral's output is low	2 484	2 048	21	240	114	3	28	1	29	
Field of extraction is limited	2 144	1 842	30	123	87	4	28	2	28	
Financial problems (get a loan)	877	693	29	75	60	5	7	2	6	
Capacity of equipment is low	652	546	4	67	24	2	2	-	7	
Organizational problem	629	539	4	52	29	2	2	-	1	
Inspection and burden are high	2 146	1 853	24	85	107	3	34	2	38	
Tax issues are difficult	276	190	13	58	8	5	-	-	2	
Difficult to get a timber permission	82	38	41	3	-	-	-	-	-	
Other	40	32	2	-	4	-	-	-	2	

TABLE 63. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and difficulties related to the administrative organizations, in overlapping numbers

Region, aimag and the capital city	TOTAL	No difficulties	Difficulties faced	Local authority	Professional inspection agency	Tax authority	Legal and control authority	Mineral resource authority	Health organization	Welfare organization	Social insurance organization	Environmental organization
TOTAL	5 998	4 508	1 490	890	675	160	857	197	181	68	40	468
West region	2 527	1 932	595	487	221	89	302	102	68	45	21	169
Bayan-Ulgii	91	48	43	33	11	7	20	-	5	16	-	9
Govi-Altai	1 024	849	175	131	52	18	99	30	24	12	11	58
Zavkhan	314	229	85	71	52	3	71	8	1	1	-	17
Uvs	411	265	146	128	49	29	48	32	11	6	6	35
Khovd	687	541	146	124	57	32	64	32	27	10	4	50
Khangai region	935	763	172	92	89	24	124	29	13	11	6	80
Arkhangai	84	80	4	1	-	-	1	-	-	-	1	1
Bayankhongor	537	407	130	74	77	22	103	25	8	9	5	66
Bulgan	39	28	11	9	5	-	9	3	-	-	-	1
Uvurkhangai	204	192	12	4	3	2	6	1	2	-	-	2
Khuvsgul	71	56	15	4	4	-	5	-	3	2	-	10
Central region	2 202	1 523	679	286	344	39	422	59	96	10	9	213
Dornogovi	74	67	7	5	3	2	3	3	2	1	-	2
Dundgovi	520	458	62	14	54	3	41	3	-	-	-	4
Umnugovi	549	346	203	60	116	5	128	25	16	1	5	91
Selenge	598	414	184	55	76	26	110	18	5	2	1	95
Tuv	461	238	223	152	95	3	140	10	73	6	3	21
East region	164	160	4	4	2	-	-	2	-	1	-	1
Dornod	50	49	1	1	-	-	-	-	-	1	-	-
Khentii	114	111	3	3	2	-	-	2	-	-	-	1
Ulaanbaatar	170	130	40	21	19	8	9	5	4	1	4	5

TABLE 64. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and difficulties related to the administrative organizations, in overlapping numbers

Employment status	TOTAL	No difficulties	Difficulties faced	Local authority	Professional inspection agency	Tax authority	Legal and control authority	Mineral resource authority	Health organization	Welfare organization	Social insurance organization	Environmental organization
TOTAL	5 998	4 508	1 490	890	675	160	857	197	181	68	40	468
Leader of partnership/employer	303	197	106	77	54	22	68	28	3	5	2	26
Member of partnership	1 424	1 095	329	207	169	58	181	51	17	22	10	80
Leader/member of cooperative	113	106	7	-	4	-	3	-	-	-	-	4
Proprietorship (singly) in artisanal mining	4 158	3 110	1 048	606	448	80	605	118	161	41	28	358

by region, aimag and the capital city and status of problems solution

Region, aimag and the capital city	TOTAL		Total number of solutions (in overlapping numbers)										Addressed to upper level of organization and official										Addressed to law enforcement agency										Negotiated with the relevant organizations										Resolved according to law and rule										Made contract and agreement										Paid penalties and fees										Provided by gifts, gratuities and bribes										Other									
	Not solved	Solved	Total number of solutions (in overlapping numbers)		Addressed to upper level of organization and official		Addressed to law enforcement agency		Negotiated with the relevant organizations		Resolved according to law and rule		Made contract and agreement		Paid penalties and fees		Provided by gifts, gratuities and bribes		Other																																																																									
TOTAL	1 490	1 345	145	216	55	36	37	20	26	38	3	1																																																																																
West region	595	535	60	103	43	32	7	7	5	7	2	-																																																																																
Bayan-Ulgii	43	42	1	2	-	-	-	1	-	1	-	-																																																																																
Govi-Altai	175	161	14	15	3	2	2	5	2	-	1	-																																																																																
Zavkhan	85	52	33	62	30	26	1	-	1	4	-	-																																																																																
Uvs	146	140	6	13	4	2	3	-	2	1	1	-																																																																																
Khovd	146	140	6	11	6	2	1	1	-	1	-	-																																																																																
Khangai region	172	144	28	44	5	1	13	6	14	4	-	1																																																																																
Arkhangai	4	4	-	-	-	-	-	-	-	-	-	-																																																																																
Bayankhongor	130	111	19	31	3	1	10	3	10	4	-	-																																																																																
Bulgan	11	7	4	6	1	-	2	1	2	-	-	-																																																																																
Uvurkhangaï	12	9	3	5	-	-	-	2	2	-	-	1																																																																																
Khuvsgul	15	13	2	2	1	-	1	-	-	-	-	-																																																																																
Central region	679	630	49	55	5	2	12	6	4	25	1	-																																																																																
Dornogovi	7	7	-	-	-	-	-	-	-	-	-	-																																																																																
Dundgovi	62	57	5	5	-	-	1	2	2	-	-	-																																																																																
Umnugovi	203	180	23	26	-	-	-	1	1	23	1	-																																																																																
Selenge	184	164	20	22	5	2	11	2	1	1	-	-																																																																																
Tuv	223	222	1	2	-	-	-	1	-	1	-	-																																																																																
East region	4	2	2	3	1	-	1	-	1	-	-	-																																																																																
Dornod	1	-	1	1	1	-	-	-	-	-	-	-																																																																																
Khentii	3	2	1	2	-	-	1	-	1	-	-	-																																																																																
Ulaanbaatar	40	34	6	11	1	1	4	1	2	2	-	-																																																																																

TABLE 66. NUMBER OF MAIN ARTISANAL MINING OPERATORS, WHO ENCOUNTERED DIFFICULTIES TO COMMUNICATE WITH ADMINISTRATIVE ORGANIZATIONS, by type of minerals and status of problems solution, in duplicated numbers

Type of minerals	TOTAL	Not solved	Solved	Total number of solutions (in overlapping numbers)	Addressed to upper level of organization and official	Addressed to law enforcement agency	Negotiated with the relevant organizations	Resolved according to law and rule	Made contract and agreement	Paid penalties and fees	Provided by gifts, gratuities and bribes	Other
TOTAL	1 490	1 345	145	216	55	36	37	20	26	38	3	1
Gold	1 247	1 118	129	193	49	34	33	15	23	35	3	1
Coal	38	35	3	3	-	-	1	1	-	1	-	-
Spar	69	63	6	7	-	-	2	2	3	-	-	-
Wolfram	102	98	4	9	4	2	1	1	-	1	-	-
Limestone	6	6	-	-	-	-	-	-	-	-	-	-
Gemstone	5	4	1	1	1	-	-	-	-	-	-	-
Sand and gravel	4	3	1	1	1	-	-	-	-	-	-	-
Other	19	18	1	2	-	-	-	1	-	1	-	-

TABLE 67. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and type of difficulties faced to sell the extracted minerals

Region, aimag and the capital city	TOTAL	No difficulties	Difficulties faced	Number of difficulties (in overlapping numbers)	There is no formal buyer in the local	There is no official assay unit in the local	Marketeer buy minerals at less price than on market	Mineral prices are not stable	Dissatisfied the mineral's content, quality and standard	Other
TOTAL	5 998	4 985	1 013	2 731	592	512	815	535	256	21
West region	2 527	2 137	390	977	262	178	327	165	31	14
Bayan-Ulgii	91	76	15	35	9	1	11	12	2	-
Govi-Altai	1 024	951	73	140	35	4	51	37	6	7
Zavkhan	314	140	174	499	155	144	160	31	3	6
Uvs	411	382	29	47	12	7	17	7	4	-
Khovd	687	588	99	256	51	22	88	78	16	1
Khangai region	935	827	108	262	43	42	100	49	28	-
Arkhangai	84	72	12	30	6	2	12	10	-	-
Bayankhongor	537	491	46	167	29	30	45	35	28	-
Bulgan	39	39	-	-	-	-	-	-	-	-
Uvurkhangai	204	178	26	35	1	10	24	-	-	-
Khuvsgul	71	47	24	30	7		19	4	-	-
Central region	2 202	1 775	427	1 238	217	244	313	266	191	7
Dornogovi	74	6	68	303	64	52	68	62	57	-
Dundgovi	520	303	217	678	94	148	146	155	129	6
Umnugovi	549	512	37	80	16	13	26	22	3	-
Selenge	598	527	71	110	27	19	41	20	2	1
Tuv	461	427	34	67	16	12	32	7	-	-
East region	164	109	55	152	43	28	49	29	3	-
Dornod	50	6	44	132	41	26	42	23	-	-
Khentii	114	103	11	20	2	2	7	6	3	-
Ulaanbaatar	170	137	33	102	27	20	26	26	3	-

TABLE 68. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and difficulties faced to sell the extracted minerals

Type of minerals	TOTAL	No difficulties	Difficulties faced	Number of difficulties (in overlapping	There is no formal buyer in the local	There is no official assay unit in the local	Marketeer buy minerals at less price than on market	Mineral prices are not stable	Dissatisfied the mineral's content, quality and standard	Other
TOTAL	5 998	4 985	1 013	2 731	592	512	815	535	256	21
Gold	4 865	4 282	583	1 369	355	270	485	206	43	10
Coal	135	90	45	120	36	21	25	26	7	5
Spar	685	402	283	963	149	198	210	215	185	6
Wolfram	157	101	56	162	23	17	56	51	15	-
Limestone	15	12	3	7	-	-	3	3	1	-
Gemstone	44	35	9	25	7	-	9	9	-	-
Sand and gravel	6	5	1	3	-	1	1	1	-	-
Other	91	58	33	82	22	5	26	24	5	-

TABLE 69. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and solution of field issue of extraction

Region, aimag and the capital city	TOTAL	Not solved	Solved	Written contracted with Soum/District	Verbal contracted with Soum/District	Written contracted with licensed	Verbal contracted with licensed enterprise	Contracted agreement with Soum/District	Use the licensed enterprises' field free	Other
TOTAL	5 998	4 869	1 129	801	12	38	31	190	50	7
West region	2 527	2 467	60	28	2	4	-	8	16	2
Bayan-Ulgii	91	82	9	8	-	-	-	-	-	1
Govi-Altai	1 024	1 012	12	11	-	-	-	-	1	-
Zavkhan	314	302	12	2	-	1	-	1	8	-
Uvs	411	391	20	5	-	1	-	7	6	1
Khovd	687	680	7	2	2	2	-	-	1	-
Khangai region	935	718	217	164	4	6	3	13	27	-
Arkhangai	84	81	3	-	1	1	-	1	-	-
Bayankhongor	537	379	158	114	3	2	1	12	26	-
Bulgan	39	23	16	10	-	3	2	-	1	-
Uvurkhangai	204	164	40	40	-	-	-	-	-	-
Khuvsgul	71	71	-	-	-	-	-	-	-	-
Central region	2 202	1 563	639	420	3	25	18	165	6	2
Dornogovi	74	52	22	2	1	-	17	-	2	-
Dundgovi	520	134	386	201	-	25	-	159	1	-
Umnugovi	549	546	3	2	1	-	-	-	-	-
Selenge	598	381	217	209	1	-	-	3	3	1
Tuv	461	450	11	6	-	-	1	3	-	1
East region	164	56	108	106	1	-	-	-	-	1
Dornod	50	44	6	6	-	-	-	-	-	-
Khentii	114	12	102	100	1	-	-	-	-	1
Ulaanbaatar	170	65	105	83	2	3	10	4	1	2

TABLE 70. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and solution of field issue of extraction

Type of minerals	TOTAL	Not solved	Solved	Written contracted with Soum/District governor	Verbal contracted with Soum/District governor	Written contracted with licensed enterprise	Verbal contracted with licensed enterprise	Contracted agreement with Soum/District governor and licensed enterprise	Use the licensed enterprises' field free	Other
TOTAL	5 998	4 869	1 129	801	12	38	31	190	50	7
Gold	4 865	4 283	582	493	9	9	5	22	39	5
Coal	135	117	18	3	-	3	9	3	-	-
Spar	685	187	498	291	2	25	17	159	3	1
Wolfram	157	154	3	-	1	1	-	-	1	-
Limestone	15	8	7	7	-	-	-	-	-	-
Gemstone	44	44	-	-	-	-	-	-	-	-
Sand and gravel	6	5	1	1	-	-	-	-	-	-
Other	91	71	20	6	-	-	-	6	7	1

TABLE 71. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and solution of field issue of extraction

Employment status	TOTAL	Not solved	Solved	Written contracted with Soum/District governor	Verbal contracted with Soum/District governor	Written contracted with licensed enterprise	Verbal contracted with licensed enterprise	Contracted agreement with Soum/District governor and licensed enterprise	Use the licensed enterprises' field free	Other
TOTAL	5 998	4 869	1 129	801	12	38	31	190	50	7
Leader of partnership/employer	303	135	168	132	2	3	4	23	3	1
Member of partnership	1 424	714	710	526	5	2	10	154	11	2
Leader/member of cooperative	113	22	91	90				1		
Proprietorship (singly) in artisanal mining	4 158	3 998	160	53	5	33	17	12	36	4

TABLE 72. SUPPORTS AND ASSISTANCES WHICH ARTISANAL AND SMALL-SCALE MINERS WILLING TO RECEIVE FROM GOVERNMENT AND NGO, by region, aimag and the capital city and type of supports and assistances, in overlapping numbers

Region, aimag and the capital city	TOTAL	Improve the legal environment	Decide the field of extraction	Loan and financial aid	Technical and technological support	Recommmit limited partner system of partnership	Create an official registration	Improve the mineral sales network	Advice and assistance regarding the improvement of labor safety and security	Rehabilitate the environment	Other
TOTAL	20 563	2 762	4 359	2 222	1 816	2 250	1 878	1 470	1 709	1 981	116
West region	8 545	1 079	1 901	1 221	972	808	768	382	580	824	10
Bayan-Ulgii	409	56	29	105	77	44	65	8	20	4	1
Govi-Altai	3 356	407	790	594	302	282	289	175	189	327	1
Zavkhan	1 424	170	309	39	138	203	115	68	158	224	-
Uvs	1 401	220	326	120	165	121	124	56	138	126	5
Khovd	1 955	226	447	363	290	158	175	75	75	143	3
Khangai region	3 004	430	743	246	237	318	280	122	269	338	21
Arkhangai	235	47	27	34	22	22	21	16	6	40	-
Bayankhongor	1 637	234	437	118	106	158	148	70	161	200	5
Bulgan	164	38	38	10	7	36	29	2	1	3	-
Uvurkhangai	789	93	219	69	89	92	68	28	64	63	4
Khuvsgul	179	18	22	15	13	10	14	6	37	32	12
Central region	8 162	1 143	1 597	596	519	1 088	804	864	775	769	7
Dornogovi	325	28	67	34	27	24	16	73	36	20	-
Dundgovi	1 718	186	153	101	124	233	119	415	219	166	2
Umnugovi	2 109	339	444	138	96	332	247	113	176	224	-
Selenge	2 473	402	454	243	146	310	294	172	224	223	5
Tuv	1 537	188	479	80	126	189	128	91	120	136	-
East region	448	76	58	88	51	14	18	74	32	27	10
Dornod	90	32	38	6	1	-	4	1	2	6	-
Khentii	358	44	20	82	50	14	14	73	30	21	10
Ulaanbaatar	404	34	60	71	37	22	8	28	53	23	68

TABLE 73. SUPPORTS AND ASSISTANCES WHICH ARTISANAL AND SMALL-SCALE MINERS WILLING TO RECEIVE FROM GOVERNMENT AND NGO, by employment status and type of supports and assistances, in overlapping numbers

Employment status	TOTAL	Improve the legal environment	Decide the field of extraction	Loan and financial aid	Technical and technological assistance and support	Recommit limited partner system of partnership	Create an official registration	Improve the mineral sales network	Advice and assistance regarding the improvement of labor safety and security	Rehabilitate the environment	Other
TOTAL	20 563	2 762	4 359	2 222	1 816	2 250	1 878	1 470	1 709	1 981	116
Leader of partnership/employer	1 344	200	245	130	131	122	101	126	146	142	1
Member of partnership	4 700	706	874	426	333	478	355	566	459	424	79
Leader/member of cooperative	297	10	30	46	43	28	35	29	46	30	-
Proprietorship (singly) in artisanal mining	14 222	1 846	3 210	1 620	1 309	1 622	1 387	749	1 058	1 385	36

TABLE 74. NUMBER OF EQUIPMENTS USED BY ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and type of

Region, aimag and the capital city	TOTAL	Engraver (hack, shovel, mattock etc)	Metal detector	Electric generator	Turboflower or airblast	Clocked drill	Levitation equipment	Wire	Water gun	Pump	Clocked small sized drill (compressor)	Other
TOTAL	26 268	13 606	1 458	1 950	559	2 126	1 065	1 051	501	567	641	2 744
West region	11 371	6 331	685	858	126	766	294	313	236	210	285	1 267
Bayan-Ulgii	503	426	8	5	-	4	3	-	-	1	10	46
Govi-Altai	4 942	3 119	182	397	24	276	54	47	45	29	34	735
Zavkhan	1 058	490	71	159	11	175	28	51	-	7	10	56
Uvs	2 750	1 392	138	178	82	183	179	172	143	114	60	109
Khovd	2 118	904	286	119	9	128	30	43	48	59	171	321
Khangai region	3 799	1 842	193	265	107	244	113	169	42	107	136	581
Arkhangai	76	56	-	-	-	-	-	2	3	2	1	12
Bayankhongor	2 484	1 152	122	222	100	203	109	140	16	89	105	226
Bulgan	101	13	17	7	-	-	-	1	14	7	2	40
Uvurkhangai	632	322	48	35	6	41	4	21	5	7	25	118
Khuvsgul	506	299	6	1	1	-	-	5	4	2	3	185
Central region	8 772	4 136	548	711	214	867	480	417	157	219	177	846
Dornogovi	284	138	-	5	3	42	37	10	3	2	37	7
Dundgovi	1 103	780	2	62	4	129	50	10	-	1	10	55
Umnugovi	3 465	1 538	336	416	90	376	187	157	35	51	69	210
Selenge	2 689	1 100	50	203	109	237	150	210	91	151	53	335
Tuv	1 231	580	160	25	8	83	56	30	28	14	8	239
East region	611	290	6	47	7	66	58	62	9	10	33	23
Dornod	28	24	-	-	-	-	-	-	1	1	-	2
Khentii	583	266	6	47	7	66	58	62	8	9	33	21
Ulaanbaatar	1 715	1 007	26	69	105	183	120	90	57	21	10	27

TABLE 75. NUMBER OF EQUIPMENTS USED BY ARTISANAL AND SMALL-SCALE MINERS, by type of minerals and equipments

Type of minerals	TOTAL	Engraver (hack, shovel, mattock etc)	Metal detector	Electric generator	Turboflow or airblast	Clocked drill	Levitiation equipment	Wire	Water gun	Pump	Clocked small sized drill (compressor)	Other
TOTAL	26 268	13 606	1 458	1 950	559	2 126	1 065	1 051	501	567	641	2 744
Gold	21 621	10 701	1 417	1 717	440	1 616	774	858	453	526	539	2 580
Coal	1 463	881	14	60	100	196	116	87	1	1	7	-
Spar	1 855	1 131	2	107	12	229	144	75	3	7	77	68
Wolfram	610	320	22	22	4	32	15	22	42	31	13	87
Limestone	106	99	-	1	-	3	3	-	-	-	-	-
Gemstone	180	114	2	22	2	24	6	3	-	2	2	3
Sand and gravel	42	32	1	1	1	2	1	1	1	-	-	2
Other	391	328	-	20	-	24	6	5	1	-	3	4

TABLE 76. NUMBER OF EQUIPMENTS USED BY ARTISANAL AND SMALL-SCALE MINERS, by employment status and type of

Employment status	TOTAL	Engraver (hack, shovel, mattock etc)	Metal detector	Electric generator	Turboflow or airblast	Clocked drill	Levitiation equipment	Wire	Water gun	Pump	Clocked small sized drill (compressor)	Other
TOTAL	26 268	13 606	1 458	1 950	559	2 126	1 065	1 051	501	567	641	2 744
Leader of partnership/employer	3 063	1 542	76	216	71	248	143	183	81	144	102	257
Member of partnership	4 741	2 257	179	373	164	435	282	277	140	152	157	325
Leader/member of cooperative	27	13	1	3	-	-	1	3	-	-	-	6
Proprietorship (singly) in artisanal mining	17 503	9 363	1 137	1 252	299	1 370	576	537	267	255	367	2 080
Utility workers in artisanal mining	817	377	50	90	25	64	52	48	13	15	14	69
Unpaid family worker	117	54	15	16	-	9	11	3	-	1	1	7

TABLE 77. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by sex and whether use labor protection uniform

Sex	TOTAL				
		Yes	%	No	%
TOTAL	5 998	4 330	100.0	1 668	100.0
Male	5 206	3 838	88.6	1 368	82.0
Female	792	492	11.4	300	18.0

TABLE 78. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by age group and whether use labor protection uniform

Age group	TOTAL				
		Yes	%	No	%
TOTAL	5 998	4 330	100.0	1 668	100.0
10-14	1	-	-	1	0.1
15-17	10	7	0.2	3	0.2
18-19	62	45	1.0	17	1.0
20-24	376	249	5.8	127	7.6
25-29	863	610	14.1	253	15.2
30-34	983	721	16.7	262	15.7
35-39	987	724	16.7	263	15.8
40-44	964	697	16.1	267	16.0
45-49	787	593	13.7	194	11.6
50-54	586	431	10.0	155	9.3
55-59	260	169	3.9	91	5.5
60-64	91	60	1.4	31	1.9
65-69	23	20	0.5	3	0.2
70 +	5	4	0.1	1	0.1

TABLE 79. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by level of education and whether use labor protection uniform

Level of education	TOTAL				
		Yes	%	No	%
TOTAL	5 998	4 330	100.0	1 668	100.0
No education	123	88	2.0	35	2.1
Educated	5 875	4 242	98.0	1 633	97.9
Primary school	691	470	10.9	221	13.2
Secondary school	2 390	1 709	39.5	681	40.8
High school	1 998	1 453	33.6	545	32.7
Technical and vocational	264	198	4.6	66	4.0
Specialized secondary	168	124	2.9	44	2.6
Tertiary education	364	288	6.7	76	4.6



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TABLE 80. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and whether use labor protection uniform

Type of minerals	TOTAL				
		Yes	%	No	%
TOTAL	5 998	4 330	100.0	1 668	100.0
Gold	4 865	3 679	85.0	1 186	71.1
Coal	999	119	2.7	15	0.9
Spar	686	303	7.0	383	23.0
Wolfram	157	113	2.6	44	2.6
Limestone	15	11	0.3	4	0.2
Gemstone	44	38	0.9	6	0.4
Sand and gravel	6	4	0.1	2	0.1
Other	91	63	1.5	28	1.7

TABLE 81. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and whether use labor protection uniform

Employment status	TOTAL				
		Yes	%	No	%
TOTAL	5 998	4 330	100.0	1 668	100.0
Leader of partnership/employer	303	282	6.5	21	1.3
Member of partnership	4 271	762	17.6	662	39.7
Leader/member of cooperative	113	8	0.2	105	6.3
Proprietorship (singly) in artisanal mining	4 158	3 278	75.7	880	52.8

TABLE 82. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and whether use labor protection uniform

Region, aimag and the capital city	TOTAL				
		Yes	%	No	%
TOTAL	5 998	4 330	72.2	1 668	27.8
West region	2 527	1 997	79.0	530	21.0
Bayan-Ulgii	91	51	56.0	40	44.0
Govi-Altai	1 024	790	77.1	234	22.9
Zavkhan	314	302	96.2	12	3.8
Uvs	411	317	77.1	94	22.9
Khovd	687	537	78.2	150	21.8
Khangai region	935	576	61.6	359	38.4
Arkhangai	84	32	38.1	52	61.9
Bayankhongor	537	354	65.9	183	34.1
Bulgan	39	28	71.8	11	28.2
Uvurkhangai	204	131	64.2	73	35.8
Khuvsgul	71	31	43.7	40	56.3
Central region	2 202	1 478	67.1	724	32.9
Dornogovi	74	47	63.5	27	36.5
Dundgovi	520	202	38.8	318	61.2
Umnugovi	549	451	82.1	98	17.9
Selenge	598	379	63.4	219	36.6
Tuv	461	399	86.6	62	13.4
East region	164	117	71.3	47	28.7
Dornod	50	49	98.0	1	2.0
Khentii	114	68	59.6	46	40.4
Ulaanbaatar	170	162	95.3	8	4.7



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TABLE 83. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by region, aimag and the capital city and type of

Region, aimag and the capital city	TOTAL	Gold	Coal	Spar	Wolfram	Limestone	Gemstone	Sand and gravel	Other
TOTAL	6 948	5 108	730	754	172	17	48	7	112
West region	2 614	2 274	57	-	171	17	20	5	70
Bayan-Ulgii	106	-	-	-	47	17	-	4	38
Govi-Altai	1 027	1 005	22	-	-	-	-	-	-
Zavkhan	337	323	-	-	-	-	-	-	14
Uvs	420	368	35	-	-	-	-	-	17
Khovd	724	578	-	-	124	-	20	1	1
Khangai region	963	963	-	-	-	-	-	-	-
Arkhangai	90	90	-	-	-	-	-	-	-
Bayankhongor	551	551	-	-	-	-	-	-	-
Bulgan	43	43	-	-	-	-	-	-	-
Uvurkhangai	207	207	-	-	-	-	-	-	-
Khuvsgul	72	72	-	-	-	-	-	-	-
Central region	2 440	1 721	-	652	1	-	28	1	37
Govisumber	54	-	-	54	-	-	-	-	-
Dornogovi	87	-	-	77	-	-	-	-	10
Dundgovi	521	-	-	521	-	-	-	-	-
Umnugovi	693	637	-	-	-	-	28	1	27
Selenge	617	616	-	-	1	-	-	-	-
Tuv	468	468	-	-	-	-	-	-	-
East region	164	56	-	102	-	-	-	1	5
Dornod	50	44	-	-	-	-	-	1	5
Khentii	114	12	-	102	-	-	-	-	-
Ulaanbaatar	767	94	673	-	-	-	-	-	-

TABLE 84. NUMBER OF ARTISANAL AND SMALL-SCALE MINERS, by type of minerals and type of mining, in duplicated numbers

Type of minerals	TOTAL	Open pit mining	%	Hidden pit mining	%
TOTAL	7 631	4 761	100.0	2 870	100.0
Gold	5 708	3 732	78.4	1 976	68.9
Coal	730	50	1.1	680	23.7
Spar	765	697	14.6	68	2.4
Wolfram	203	116	2.4	87	3.0
Limestone	17	17	0.4	-	-
Gemstone	72	32	0.7	40	1.4
Sand and gravel	8	6	0.1	2	0.1
Other	128	111	2.3	17	0.6

TABLE 85. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and type of mining field

Region, aimag and the capital city	TOTAL	Number of persons working in not permitted field		Number of persons working in permitted field		Field for local special needs	Field of licensed enterprises	Other
TOTAL	5 998	4 935	1 063	650	373	40		
West region	2 527	2 139	388	169	202	17		
Bayan-Ulgii	91	45	46	16	29	1		
Govi-Altai	1 024	830	194	52	129	13		
Zavkhan	314	259	55	43	10	2		
Uvs	411	362	49	19	30	-		
Khovd	687	643	44	39	4	1		
Khangai region	935	731	204	125	75	4		
Arkhangai	84	84	-	-	-	-		
Bayankhongor	537	382	155	82	69	4		
Bulgan	39	20	19	15	4	-		
Uvurkhangai	204	175	29	28	1	-		
Khuvsgul	71	70	1	-	1	-		
Central region	2 202	1 886	316	238	67	11		
Dornogovi	74	59	15	1	14	-		
Dundgovi	520	385	135	109	25	1		
Umnugovi	549	535	14	11	3	-		
Selenge	598	466	132	108	18	6		
Tuv	461	441	20	9	7	4		
East region	164	98	66	58	3	5		
Dornod	50	41	9	1	3	5		
Khentii	114	57	57	57	-	-		
Ulaanbaatar	170	81	89	60	26	3		

TABLE 86. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and type of mining field

Type of minerals	TOTAL	Number of persons working in not permitted field	Number of persons working in permitted field	Field for local special needs	Field of licensed enterprises	Other
TOTAL	5 998	4 935	1 063	650	373	40
Gold	4 865	4 134	731	442	262	27
Coal	135	105	30	1	24	5
Spar	685	490	195	155	39	1
Wolfram	157	100	57	30	26	1
Limestone	15	1	14	12	2	-
Gemstone	44	43	1	-	1	-
Sand and gravel	6	3	3	2	-	1
Other	91	59	32	8	19	5

TABLE 87. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and type of mining field

Employment status	TOTAL	Number of persons working in not permitted field	Number of persons working in permitted field	Field for local special needs	Field of licensed enterprises	Other
TOTAL	5 998	4 935	1 063	650	373	40
Leader of partnership/ employer	303	117	186	144	38	4
Member of partnership	1 424	1 085	339	266	58	15
Leader/member of cooperative	113	107	6	6		
Proprietorship (singly) in artisanal mining	4 158	3 626	532	234	277	21

TABLE 88. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and whether made rehabilitation in 2016

Region, aimag and the capital city	TOTAL				
		Yes	%	No	%
TOTAL	5 998	685	11.4	5 313	88.6
West region	2 527	272	10.8	2 255	89.2
Bayan-Ulgii	91	2	2.2	89	97.8
Govi-Altai	1 024	152	14.8	872	85.2
Zavkhan	314	4	1.3	310	98.7
Uvs	411	74	18.0	337	82.0
Khovd	687	40	5.8	647	94.2
Khangai region	935	142	15.2	793	84.8
Arkhangai	84	-	-	84	100.0
Bayankhongor	537	103	19.2	434	80.8
Bulgan	39	18	46.2	21	53.8
Uvurkhangai	204	19	9.3	185	90.7
Khuvsgul	71	2	2.8	69	97.2
Central region	2 202	186	8.4	2 016	91.6
Dornogovi	74	1	1.4	73	98.6
Dundgovi	520	16	3.1	504	96.9
Umnugovi	549	43	7.8	506	92.2
Selenge	598	115	19.2	483	80.8
Tuv	461	11	2.4	450	97.6
East region	164	18	11.0	146	89.0
Dornod	50	1	2.0	49	98.0
Khentii	114	17	14.9	97	85.1
Ulaanbaatar	170	67	39.4	103	60.6

TABLE 89. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and whether made rehabilitation in 2016

Employment status	TOTAL				
		Yes	%	No	%
TOTAL	5 998	685	11.4	5 313	88.6
Leader of partnership/employer	303	114	37.6	189	62.4
Member of partnership	1 424	219	15.4	1 205	84.6
Leader/member of cooperative	113	3	2.7	110	97.3
Proprietorship (singly) in artisanal mining	4 158	349	8.4	3 809	91.6



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TABLE 90. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and whether made rehabilitation in 2016

Type of minerals	TOTAL	Rehabilitation			
		Yes	%	No	%
TOTAL	5 998	685	11.4	5 313	88.6
Gold	4 865	624	12.8	4 241	87.2
Coal	135	16	11.9	119	88.1
Spar	685	22	3.2	663	96.8
Wolfram	157	10	6.4	147	93.6
Limestone	15	-	-	15	100.0
Gemstone	44	4	9.1	40	90.9
Sand and gravel	6	1	16.7	5	83.3
Other	91	8	8.8	83	91.2

TABLE 91. AMOUNT OF EXTRACTED MINERALS, by region, aimag and the capital city and type of minerals

Region, aimag and the capital city	Gold /gram/	Coal /ton/	Spar /ton/	Wolfram /ton/	Limestone /ton/	Gemstone /ton/	Sand and gravels /ton/	Other /ton/
TOTAL	212 036.5	159 025.4	20 818.3	161.1	69.8	27.3	1 616.0	6 174.2
West region	62 528.7	1 527.0	.0	161.1	69.8	6.8	1 260.0	5 551.8
Bayan-Ulgii	-	-	-	29.2	69.8	-	1 175.0	3 377.7
Govi-Altai	26 643.2	803.6	-	-	-	-	-	-
Zavkhan	7 407.5	-	-	-	-	-	-	1 497.5
Uvs	10 149.8	723.3	-	-	-	-	-	665.8
Khovd	18 328.2	-	-	131.9	-	6.8	85.0	10.8
Khangai region	48 865.3	-	-	-	-	-	-	-
Arkhangai	2 140.5	-	-	-	-	-	-	-
Bayankhongor	24 986.1	-	-	-	-	-	-	-
Bulgan	14 646.3	-	-	-	-	-	-	-
Uvurkhangai	5 901.4	-	-	-	-	-	-	-
Khuvsgul	1 191.0	-	-	-	-	-	-	-
Central region	97 104.5	-	14 564.8	-	-	20.5	256.0	58.4
Dornogovi	-	-	5 822.3	-	-	-	-	17.5
Dundgovi	-	-	8 742.5	-	-	-	-	-
Umnugovi	28 074.0	-	-	-	-	20.5	256.0	40.9
Selenge	34 560.8	-	-	-	-	-	-	-
Tuv	34 469.7	-	-	-	-	-	-	-
East region	881.0	-	6 253.5	-	-	-	100.0	564.0
Dornod	154.0	-	-	-	-	-	100.0	564.0
Khentii	727.0	-	6 253.5	-	-	-	-	-
Ulaanbaatar	2 656.9	157 498.4	-	-	-	-	-	-

TABLE 92. AMOUNT OF EXTRACTED MINERALS, by employment status and type of minerals

Employment status	Gold /gram/	Coal /ton/	Spar /ton/	Wolfram /ton/	Limestone /ton/	Gemstone /ton/	Sand and gravels /ton/	Other /ton/
TOTAL	212 036.5	159 025.4	20 818.3	161.1	69.8	27.3	1 616.0	6 174.2
Leader of partnership/ employer	61 504.5	-	8 635.0	2.4	-	-	-	0.1
Member of partnership	28 332.3	26.3	6 227.9	-	-	-	185.0	963.1
Leader/member of cooperative	16.2	-	911.7	-	-	-	-	100.0
Proprietorship (singly) in artisanal mining	118 390.2	24 218.4	4 616.3	141.8	59.7	24.8	1 111.0	3 453.1
Utility workers in artisanal mining	3 364.7	134 780.7	427.5	15.1	10.1	-	320.0	1 656.8
Unpaid family worker	428.6	-	-	1.8	-	2.5	-	1.2

TABLE 93. TOTAL EXPENDITURES OF 2016, by type of minerals

		mln. togrogs							
Expenditures	TOTAL	Gold	Coal	Spar	Wolfram	Limestone	Gemstone	Sand and gravel	Other
Total	8 548.9	6 387.3	1 015.8	951.1	107.5	17.8	12.6	7.5	49.4
Wages	2 189.9	1 235.7	545.7	393.0	0.9	10.9	-	0.4	3.2
Assistances in kind and monetary to employees	64.9	52.8	3.0	8.7	0.2	0.1	-	-	0.2
Fuel and lubricants	2 439.1	2 131.3	48.3	197.7	24.1	5.3	9.1	2.8	20.5
Transportation cost	550.1	367.4	73.1	94.3	8.6	0.5	0.3	-	5.9
Cost of occupational safety	279.8	228.7	25.9	16.1	3.6	0.7	0.6	0.4	3.8
Electricity and heating	114.2	37.3	66.9	8.0	0.8	0.1	0.7	-	0.6
Supplies	501.4	305.8	146.5	39.5	4.1	0.1	1.3	3.0	1.2
Raw materials	633.1	522.4	45.3	28.6	32.3	0.2	-	0.3	4.0
Interest expense	126.4	109.4	10.3	3.5	0.6	-	-	-	2.6
Rental cost of machinery and equipments	872.5	732.8	11.6	124.9	0.1	-	0.5	0.1	2.5
Cost of rental housing	32.3	30.7	0.5	0.7	0.1	-	-	-	0.3
Compensation for damages caused by disasters	2.6	2.4	0.2	-	-	-	-	-	-
Payments and subsidies to landowners	29.6	27.3	1.6	0.2	-	0.2	-	0.1	0.3
Cost of reclamation of environment	128.6	115.8	0.5	10.5	0.4	0.0	-	0.1	1.4
Other	584.5	487.5	36.5	25.5	31.7	-	-	0.3	3.1

TABLE 94. TOTAL EXPENDITURES OF 2016, by type of expenditures and region, aimag and the capital city

Region, aimag and the capital city		TOTAL	mn. togrog														
			Wages	Assistances in kind and monetary to employees	Fuel and lubricants	Transportation cost	Cost of occupational safety	Electricity and heating	Supplies	Raw materials	Interest expense	Rental cost of machinery and equipments	Cost of rental housing	Compensation for damages caused by disasters	Payments and subsidies to landowners	Cost of reclamation of environment	Other
TOTAL		8 548.9	2 189.9	64.9	2 439.1	550.1	279.8	114.2	501.4	633.1	126.4	872.5	32.3	2.6	29.6	128.6	584.5
West region		1 083.2	37.3	4.6	395.6	96.6	40.9	6.7	72.2	198.5	53.5	15.4	1.0	-	2.3	10.8	147.8
Bayan-Ulgii		77.2	15.4	0.3	23.5	4.9	5.5	0.3	0.4	13.7	0.6	0.7	0.2	-	0.6	0.6	10.5
Govi-Altai		511.6	7.7	0.7	202.9	28.3	15.2	2.2	41.4	91.8	40.8	6.7	0.5	-	1.7	3.2	68.5
Zavkhan		122.3	-	0.5	60.4	7.5	2.7	2.7	15.8	15.5	2.4	2.2	-	-	0.0	1.1	11.4
Uvs		232.2	13.8	2.8	74.0	29.2	16.4	0.4	7.6	44.8	2.5	5.7	0.4	-	0.1	5.3	28.9
Khovd		139.8	0.3	0.3	34.8	26.7	1.1	1.1	7.0	32.5	7.1	0.1	-	-	-	0.6	28.4
Khangai region		2 275.9	765.7	8.2	727.5	110.8	75.0	21.7	107.2	155.8	20.7	56.3	-	-	15.5	46.8	164.8
Arkhangai		18.3	-	-	10.1	3.1	0.1	-	3.5	1.2	0.2	-	-	-	-	0.2	0.0
Bayankhongor		1 442.7	499.2	5.6	461.4	49.8	62.5	11.4	79.2	119.8	11.6	6.8	0.0	-	6.8	0.8	127.8
Bulgan		562.3	229.5	1.2	150.3	41.5	9.2	10.3	15.2	9.2	8.2	34.0	-	-	8.3	45.5	-
Uvurkhangai		241.4	37.0	1.5	105.1	12.3	2.8	-	9.2	20.8	0.8	15.6	-	-	-	0.3	36.0
Khuvsgul		11.4	-	-	0.6	4.0	0.5	-	0.1	4.8	-	-	-	-	0.4	-	1.0
Central region		3 719.6	718.5	40.2	1 126.9	197.9	126.0	10.1	151.9	220.4	37.0	775.8	30.5	2.4	9.6	65.6	206.9
Dornogovi		132.2	36.0	0.1	30.1	12.6	1.5	0.1	9.8	15.5	-	9.0	-	-	-	-	17.6
Dundgovi		440.9	235.5	0.2	50.1	15.4	4.0	0.8	7.2	9.5	1.2	104.6	0.5	-	0.1	7.0	4.8
Umnugovi		473.3	5.0	-	213.4	22.1	14.5	3.8	55.0	89.4	4.4	0.5	-	-	-	0.1	65.1
Selenge		1 669.7	379.3	27.5	418.2	84.6	45.1	5.0	71.2	28.5	15.5	444.6	30.0	2.4	9.6	47.4	60.7
Tuv		1 003.5	62.6	12.4	415.1	63.2	61.0	0.4	8.7	77.5	15.9	217.1	-	-	-	11.0	58.6
East region		397.8	121.5	8.4	122.9	67.9	12.3	7.0	23.5	6.7	4.8	11.4	0.2	-	0.2	4.7	6.3
Dornod		10.1	-	-	1.4	0.6	0.4	-	0.0	2.6	2.5	-	-	-	-	-	2.6
Khentii		387.7	121.5	8.4	121.5	67.3	12.0	7.0	23.5	4.1	2.3	11.4	0.2	-	0.2	4.7	3.7
Ulaanbaatar		1 072.3	547.0	3.6	66.1	76.9	25.6	68.7	146.5	51.8	10.3	13.6	0.5	0.2	2.1	0.8	58.6

TABLE 95. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and whether paid tax and fees in 2016

Region, aimag and the capital city	TOTAL				
		Yes	%	No	%
TOTAL	5 998	1 545	25.8	4 453	74.2
West region	2 527	649	25.7	1 878	74.3
Bayan-Ulgii	91	31	34.1	60	65.9
Govi-Altai	1 024	215	21.0	809	79.0
Zavkhan	314	180	57.3	134	42.7
Uvs	411	81	19.7	330	80.3
Khovd	687	142	20.7	545	79.3
Khangai region	935	276	29.5	659	70.5
Arkhangai	84	15	17.9	69	82.1
Bayankhongor	537	223	41.5	314	58.5
Bulgan	39	13	33.3	26	66.7
Uvurkhangai	204	23	11.3	181	88.7
Khuvsgul	71	2	2.8	69	97.2
Central region	2 202	477	21.7	1 725	78.3
Dornogovi	74	20	27.0	54	73.0
Dundgovi	520	120	23.1	400	76.9
Umnugovi	549	119	21.7	430	78.3
Selenge	598	97	16.2	501	83.8
Tuv	461	121	26.2	340	73.8
East region	164	35	21.3	129	78.7
Dornod	50	1	2.0	49	98.0
Khentii	114	34	29.8	80	70.2
Ulaanbaatar	170	108	63.5	62	36.5

TABLE 96. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by employment status and whether paid tax and fees in 2016

Employment status	TOTAL				
		Yes	%	No	%
TOTAL	5 998	1 545	25.8	4 453	74.2
Leader of partnership/employer	303	192	63.4	111	36.6
Member of partnership	1 424	406	28.5	1 018	71.5
Leader/member of cooperative	113	9	8.0	104	92.0
Proprietorship (singly) in artisanal mining	4 158	938	22.6	3 220	77.4



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TABLE 97. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and whether paid tax and fees in 2016

Type of minerals	TOTAL				
		Yes	%	No	
TOTAL	5 998	1 545	25.8	4 453	74.2
Gold	4 865	1 263	26.0	3 602	74.0
Coal	135	54	40.0	81	60.0
Spar	685	157	22.9	528	77.1
Wolfram	157	40	25.5	117	74.5
Limestone	15	4	26.7	11	73.3
Gemstone	44	4	9.1	40	90.9
Sand and gravel	6	2	33.3	4	66.7
Other	91	21	23.1	70	76.9

TABLE 97. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and whether paid tax and fees in 2016

Type of minerals	TOTAL				
		Yes	%	No	%
TOTAL	5 998	1 545	25.8	4 453	74.2
Gold	4 865	1 263	26.0	3 602	74.0
Coal	135	54	40.0	81	60.0
Spar	685	157	22.9	528	77.1
Wolfram	157	40	25.5	117	74.5
Limestone	15	4	26.7	11	73.3
Gemstone	44	4	9.1	40	90.9
Sand and gravel	6	2	33.3	4	66.7
Other	91	21	23.1	70	76.9

TABLE 98. PAID TAXES IN 2016, by region, aimag and the capital city and type of tax

		mln.togrogs								
Region, aimag and the capital city	TOTAL	Transportation and vehicle tax	Unidentified revenue tax	Personal income tax	Corporate income tax	Fee on usage of mineral resource	Membership tax	Value added tax	Land fee (to land owners)	Other
TOTAL	349.7	91.8	37.0	100.5	3.5	18.1	14.0	25.1	16.0	43.8
West region	61.5	33.3	5.0	7.7	1.5	5.6	1.6	-	6.3	0.6
Bayan-Ulgii	2.9	0.9	0.9	0.3	0.1	0.1	-	-	0.5	0.1
Govi-Altai	14.2	11.1	0.1	0.4	0.0	1.5	0.3	-	0.3	0.5
Zavkhan	19.8	9.7	1.3	3.1	0.4	-	0.1	-	5.2	0.0
Uvs	8.5	1.6	0.6	0.1	1.0	4.0	1.1	-	0.1	-
Khovd	16.1	10.0	2.1	3.9	-	-	0.1	-	0.0	0.1
Khangai region	64.9	15.2	12.2	28.2	0.5	0.9	0.8	0.0	3.0	4.0
Arkhangai	1.1	0.9	-	0.0	-	-	-	-	0.1	-
Bayankhongor	54.3	12.2	9.9	27.2	0.5	0.9	0.7	0.0	2.9	0.1
Bulgan	6.5	0.7	2.4	0.2	-	-	-	-	-	3.3
Uvurkhangai	2.9	1.3	-	0.8	-	-	0.1	-	0.0	0.6
Khuvsgul	0.1	0.1	-	-	-	-	-	-	-	-
Central region	173.1	36.2	7.7	61.1	0.3	3.7	10.8	25.1	0.2	28.0
Dornogovi	6.9	6.4	-	0.4	-	0.1	-	-	-	0.1
Dundgovi	22.9	5.0	1.3	12.2	-	2.4	1.8	0.1	-	-
Umnugovi	12.0	10.1	0.5	0.5	-	0.1	0.7	-	0.0	0.2
Selenge	82.8	4.2	5.9	37.1	0.3	1.2	8.2	-	-	26.0
Tuv	48.6	10.5	0.1	10.9	0.0	-	0.2	25.0	0.1	1.7
East region	19.0	2.7	5.1	3.1	0.2	6.4	0.6	-	0.1	0.9
Dornod	0.0	0.0	-	-	-	-	-	-	-	-
Khentii	19.0	2.7	5.1	3.1	0.2	6.4	0.6	-	0.1	0.9
Ulaanbaatar	31.2	4.4	6.9	0.4	1.0	1.6	0.1	-	6.5	10.3

TABLE 99. PAID TAXES IN 2016, by type of minerals and tax

mln.togrogs

Type of minerals	TOTAL	Transportation and vehicle tax	Unidentified revenue tax	Personal income tax	Corporate income tax	Fee on usage of mineral resource	Membership tax	Value added tax	Land fee (to land owners)	Other
TOTAL	349.7	91.8	37.0	100.5	3.5	18.1	14.0	25.1	16.0	43.8
Gold	279.9	70.1	29.3	85.5	1.2	4.1	12.2	25.0	8.9	43.5
Coal	14.4	4.7	0.2	0.4	1.0	1.5	-	-	6.5	0.1
Spar	44.4	13.6	6.4	13.5	0.2	8.8	1.8	0.1	-	-
Wolfram	3.6	2.3	1.0	0.2	-	-	-	-	0.2	-
Limestone	0.2	-	-	-	-	0.1	-	-	0.1	-
Gemstone	0.4	0.4	-	-	-	-	-	-	-	-
Sand and gravel	0.3	0.0	-	0.1	-	-	-	-	0.2	0.1
Other	6.5	0.5	0.2	0.8	1.1	3.6	-	-	0.2	0.1

TABLE 100. GROSS OUTPUT, INTERMEDIATE CONSUMPTION AND VALUE ADDED, by region, aimag and the capital city

mln.togrog																	
Region, aimag and the capital city	Gross output	Intermediate consumption	Raw materials			Supplies		Electricity and heating	Fuel and lubricants		Cost of rental housing		Rental cost of machinery and equipments	Transportation cost	Cost of occupational safety	Cost of reclamation of environment	Other expenses
TOTAL	22 071.5	6 135.5	633.1	501.4	114.2	2 439.1	32.3	872.5	550.1	279.8	128.6	584.5					
West region	6 648.3	985.5	198.5	72.2	6.7	395.6	1.0	15.4	96.6	40.9	10.8	147.8					
Bayan-Ulgii	610.0	60.3	13.7	0.4	0.3	23.5	0.2	0.7	4.9	5.5	0.6	10.5					
Govi-Altai	1 925.7	460.7	91.8	41.4	2.2	202.9	0.5	6.7	28.3	15.2	3.2	68.5					
Zavkhan	497.4	119.4	15.5	15.8	2.7	60.4	-	2.2	7.5	2.7	1.1	11.4					
Uvs	772.8	212.9	44.8	7.6	0.4	74.0	0.4	5.7	29.2	16.4	5.3	28.9					
Khovd	2 842.4	132.1	32.5	7.0	1.1	34.8	-	0.1	26.7	1.1	0.6	28.4					
Khangai region	3 155.5	1 465.9	155.8	107.2	21.7	727.5	0.0	56.3	110.8	75.0	46.8	164.8					
Arkhangai	111.0	18.2	1.2	3.5	-	10.1	-	-	3.1	0.1	0.2	0.0					
Bayankhongor	1 746.6	919.5	119.8	79.2	11.4	461.4	0.0	6.8	49.8	62.5	0.8	127.8					
Bulgan	787.6	315.1	9.2	15.2	10.3	150.3	-	34.0	41.5	9.2	45.5	-					
Uvurkhangai	429.0	202.2	20.8	9.2	-	105.1	-	15.6	12.3	2.8	0.3	36.0					
Khuvsgul	81.2	11.0	4.8	0.1	-	0.6	-	-	4.0	0.5	-	1.0					
Central region	7 922.7	2 912.0	220.4	151.9	10.1	1 126.9	30.5	775.8	197.9	126.0	65.6	206.9					
Dornogovi	335.4	96.1	15.5	9.8	0.1	30.1	-	9.0	12.6	1.5	-	17.6					
Dundgovi	529.4	203.9	9.5	7.2	0.8	50.1	0.5	104.6	15.4	4.0	7.0	4.8					
Umnugovi	2 100.8	463.9	89.4	55.0	3.8	213.4	-	0.5	22.1	14.5	0.1	65.1					
Selenge	2 316.4	1 235.4	28.5	71.2	5.0	418.2	30.0	444.6	84.6	45.1	47.4	60.7					
Tuv	2 640.8	912.6	77.5	8.7	0.4	415.1	-	217.1	63.2	61.0	11.0	58.6					
East region	448.5	262.9	6.7	23.5	7.0	122.9	0.2	11.4	67.9	12.3	4.7	6.3					
Dornod	19.3	7.6	2.6	0.0	-	1.4	-	-	0.6	0.4	-	2.6					
Khentii	429.3	255.4	4.1	23.5	7.0	121.5	0.2	11.4	67.3	12.0	4.7	3.7					
Ulaanbaatar	3 896.5	509.2	51.8	146.5	68.7	66.1	0.5	13.6	76.9	25.6	0.8	58.6					

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TABLE 100. GROSS OUTPUT, INTERMEDIATE CONSUMPTION AND VALUE ADDED, by region, aimag and the capital city (continuation)

mln. togrogs																
Region, aimag and the capital city	Value added	Wages														
			Transportation and vehicle tax	Unidentified revenue	Personal income tax	Corporate income tax	Fee on usage of mineral resource	Membership tax	Value added tax	Land fee (to land owners)	Other taxes	Assistances in kind and monetary to employees	Interest expense	Compensation for damages caused by disasters	Payments and subsidies to landowners	Estimated profits
TOTAL	15 936.0	2 189.9	91.8	37.0	100.5	3.5	18.1	14.0	25.1	16.0	43.8	64.9	126.4	2.6	29.6	13 172.8
West region	5 662.8	37.3	33.3	5.0	7.7	1.5	5.6	1.6	-	6.3	0.6	4.6	53.5	-	2.3	5 503.5
Bayan-Ulgii	549.7	15.4	0.9	0.9	0.3	0.1	0.1	-	-	0.5	0.1	0.3	0.6	-	0.6	529.9
Govi-Altai	1 465.0	7.7	11.1	0.1	0.4	0.0	1.5	0.3	-	0.3	0.5	0.7	40.8	-	1.7	1 399.9
Zavkhan	377.9	-	9.7	1.3	3.1	0.4	-	0.1	-	5.2	0.0	0.5	2.4	-	0.0	355.2
Uvs	559.8	13.8	1.6	0.6	0.1	1.0	4.0	1.1	-	0.1	-	2.8	2.5	-	0.1	532.0
Khovd	2 710.2	0.3	10.0	2.1	3.9	-	-	0.1	-	0.0	0.1	0.3	7.1	-	-	2 686.4
Khangai region	1 689.5	765.7	15.2	12.2	28.2	0.5	0.9	0.8	0.0	3.0	4.0	8.2	20.7	-	15.5	814.6
Arkhangai	92.9	-	0.9	-	0.0	-	-	-	-	0.1	-	-	0.2	-	-	91.7
Bayankhongor	827.1	499.2	12.2	9.9	27.2	0.5	0.9	0.7	0.0	2.9	0.1	5.6	11.6	-	6.8	249.7
Bulgan	472.4	229.5	0.7	2.4	0.2	-	-	-	-	-	3.3	1.2	8.2	-	8.3	218.8
Uvurkhangai	226.8	37.0	1.3	-	0.8	-	-	0.1	-	0.0	0.6	1.5	0.8	-	-	184.7
Khuvsgul	70.3	-	0.1	-	-	-	-	-	-	-	-	-	-	-	0.4	69.8
Central region	5 010.8	718.5	36.2	7.7	61.1	0.3	3.7	10.8	25.1	0.2	28.0	40.2	37.0	2.4	9.6	4 030.0
Dornogovi	239.2	36.0	6.4	-	0.4	-	0.1	-	-	-	0.1	0.1	-	-	-	196.3
Dundgovi	325.5	235.5	5.0	1.3	12.2	-	2.4	1.8	0.1	-	-	0.2	1.2	-	0.1	65.6
Umnugovi	1 636.9	5.0	10.1	0.5	0.5	-	0.1	0.7	-	0.0	0.2	-	4.4	-	-	1 615.5
Selenge	1 081.0	379.3	4.2	5.9	37.1	0.3	1.2	8.2	-	-	26.0	27.5	15.5	2.4	9.6	563.9
Tuv	1 728.2	62.6	10.5	0.1	10.9	0.0	-	0.2	25.0	0.1	1.7	12.4	15.9	-	-	1 588.8
East region	185.6	121.5	2.7	5.1	3.1	0.2	6.4	0.6	-	0.1	0.9	8.4	4.8	-	0.2	31.7
Dornod	11.7	-	0.0	-	-	-	-	-	-	-	-	-	2.5	-	-	9.2
Khentii	173.9	121.5	2.7	5.1	3.1	0.2	6.4	0.6	-	0.1	0.9	8.4	2.3	-	0.2	22.6
Ulaanbaatar	3 387.3	547.0	4.4	6.9	0.4	1.0	1.6	0.1	-	6.5	10.3	3.6	10.3	0.2	2.1	2 792.9

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Type of minerals	Gross output	Intermediate consumption										Other expenses				
		Raw materials			Supplies		Electricity and heating		Fuel and lubricants		Cost of rental housing		Rental cost of machinery and equipments		Cost of occupational safety		Cost of reclamation of environment
TOTAL	22 071.5	6 135.5	633.1	501.4	114.2	2 439.1	32.3	872.5	550.1	279.8	128.6	584.5				
Gold	14 437.4	4 959.6	522.4	305.8	37.3	2 131.3	30.7	732.8	367.4	228.7	115.8	487.5				
Coal	3 822.2	455.0	45.3	146.5	66.9	48.3	0.5	11.6	73.1	25.9	0.5	36.5				
Spar	1 235.1	545.7	28.6	39.5	8.0	197.7	0.7	124.9	94.3	16.1	10.5	25.5				
Wolftram	1 938.3	105.8	32.3	4.1	0.8	24.1	0.1	0.1	8.6	3.6	0.4	31.7				
Limestone	39.1	6.7	0.2	0.1	0.1	5.3	-	-	0.5	0.7	0.0	-				
Gemstone	188.2	12.6	-	1.3	0.7	9.1	-	0.5	0.3	0.6	-	-				
Sand and gravel	20.0	7.0	0.3	3.0	-	2.8	-	0.1	-	0.4	0.1	0.3				
Other	391.2	43.2	4.0	1.2	0.6	20.5	0.3	2.5	5.9	3.8	1.4	3.1				

TABLE 101. GROSS OUTPUT, INTERMEDIATE CONSUMPTION AND VALUE ADDED, by type of minerals, (continuation)

Type of minerals	Value added	Wages	min.togrogs													
			Transportation and vehicle tax	Unidentified revenue tax	Personal income tax	Corporate income tax	Fee on usage of mineral resource	Membership tax	Value added tax	Land fee (to land owners)	Other taxes	Assistances in kind and monetary to	Interest expense	Compensation for damages caused by	Payments and subsidies to	Estimated profits
TOTAL	15 936.0	2 189.9	91.8	37.0	100.5	3.5	18.1	14.0	25.1	16.0	43.8	64.9	126.4	2.6	29.6	13 172.8
Gold	9 477.8	1 235.7	70.1	29.3	85.5	1.2	4.1	12.2	25.0	8.9	43.5	52.8	109.4	2.4	27.3	7 770.3
Coal	3 367.1	545.7	4.7	0.2	0.4	1.0	1.5	-	-	6.5	0.1	3.0	10.3	0.2	1.6	2 792.0
Spar	689.5	393.0	13.6	6.4	13.5	0.2	8.8	1.8	0.1	-	-	8.7	3.5	-	0.2	239.6
Wolfram	1 832.4	0.9	2.3	1.0	0.2	-	-	-	-	0.2	-	0.2	0.6	-	-	1 827.1
Limestone	32.4	10.9	-	-	-	-	0.1	-	-	0.1	-	0.1	-	-	0.2	21.1
Gemstone	175.6	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	175.2
Sand and gravel	13.0	0.4	0.0	-	0.1	-	-	-	-	0.2	0.1	-	-	-	0.1	12.2
Other	348.0	3.2	0.5	0.2	0.8	1.1	3.6	-	-	0.2	0.1	0.2	2.6	-	0.3	335.3

TABLE 102. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by region, aimag and the capital city and whether made an investments

Region, aimag and the capital city	TOTAL				
		Yes	%	No	%
TOTAL	5 998	367	6.1	5 631	93.9
West region	2 527	110	4.4	2 417	95.6
Bayan-Ulgii	91	-	-	91	100.0
Govi-Altai	1 024	36	3.5	988	96.5
Zavkhan	314	16	5.1	298	94.9
Uvs	411	31	7.5	380	92.5
Khovd	687	27	3.9	660	96.1
Khangai region	935	89	9.5	846	90.5
Arkhangai	84	6	7.1	78	92.9
Bayankhongor	537	61	11.4	476	88.6
Bulgan	39	5	12.8	34	87.2
Uvurkhangai	204	17	8.3	187	91.7
Khuvsgul	71	-	-	71	100.0
Central region	2 202	96	4.4	2 106	95.6
Dornogovi	74	7	9.5	67	90.5
Dundgovi	520	1	0.2	519	99.8
Umnugovi	549	54	9.8	495	90.2
Selenge	598	18	3.0	580	97.0
Tuv	461	16	3.5	445	96.5
East region	164	11	6.7	153	93.3
Dornod	50	-	-	50	100.0
Khentii	114	11	9.6	103	90.4
Ulaanbaatar	170	61	35.9	109	64.1

TABLE 103. NUMBER OF MAIN ARTISANAL MINING OPERATORS, by type of minerals and whether made an investments

Type of minerals	TOTAL				
		Yes	%	No	%
TOTAL	5 998	367	6.1	5 631	93.9
Gold	4 865	273	5.6	4 592	94.4
Coal	134	56	41.8	78	58.2
Spar	686	19	2.8	667	97.2
Wolfram	157	5	3.2	152	96.8
Limestone	15	-	-	15	100.0
Gemstone	44	9	20.5	35	79.5
Sand and gravel	6	1	16.7	5	83.3
Other	91	4	4.4	87	95.6

TABLE 104. AMOUNT OF INVESTMENTS MADE IN 2016, by type of minerals and investments

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Type of minerals	TOTAL				
		Buildings, house	Vehicles	Equipments	Other
TOTAL	1 455.8	72.3	417.0	899.1	67.4
Gold	860.7	49.6	285.0	497.0	29.2
Coal	466.7	20.7	79.7	329.0	37.3
Spar	98.6	2.0	35.0	61.2	0.4
Wolfram	19.4	-	14.3	4.6	0.5
Limestone	3.0	-	3.0	-	-
Gemstone	5.0	-	-	5.0	-
Sand and gravel	1.0	-	-	1.0	-
Other	1.4	-	-	1.4	-



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TABLE 105. AMOUNT OF INVESTMENTS MADE IN 2016, by region, aimag and the capital city and type of investment

Region, aimag and the capital city	TOTAL	mln.togrogs			
		Buildings, house	Vehicles	Equipments	Other
TOTAL	1 455.8	72.3	417.0	899.1	67.4
West region	179.9	5.3	99.1	71.3	4.3
Bayan-Ulgii	3.0	-	3.0	-	-
Govi-Altai	34.4	0.1	17.2	17.0	0.1
Zavkhan	41.5	-	8.5	32.9	0.0
Uvs	45.0	-	32.9	10.9	1.2
Khovd	56.1	5.2	37.5	10.5	2.9
Khangai region	451.3	18.2	125.9	297.9	9.3
Arkhangai	31.5	-	31.5	-	-
Bayankhongor	222.9	2.0	39.7	172.0	9.3
Bulgan	103.1	0.6	20.0	82.5	-
Uvurkhangai	93.7	15.6	34.7	43.4	0.0
Central region	284.0	26.6	82.9	158.0	16.5
Dornogovi	32.2	-	13.0	18.8	0.4
Dundgovi	0.5	0.5	-	-	-
Umnugovi	57.6	6.1	19.6	31.3	0.6
Selenge	104.2	20.0	32.0	37.3	14.9
Tuv	89.5	-	18.3	70.6	0.6
East region	65.9	1.5	22.0	42.4	-
Khentii	65.9	1.5	22.0	42.4	-
Ulaanbaatar	474.7	20.7	87.2	329.5	37.3

TABLE 106. AMOUNT OF INVESTMENTS MADE IN 2016, by employment status and type of investment

Employment status	TOTAL	mln.togrogs			
		Buildings, house	Vehicles	Equipments	Other
TOTAL	1 455.8	72.3	417.0	899.1	67.4
Leader of partnership/employer	512.0	25.1	126.0	346.6	14.3
Member of partnership	127.3	10.2	40.5	74.0	2.7
Proprietorship (singly) in artisanal mining	764.4	37.0	233.6	451.0	42.9
Utility workers in artisanal mining	51.4	-	17.0	26.9	7.5
Unpaid family worker	0.7	-	-	0.7	-