Situation Analysis of the Artisanal Diamond Mining in the Western Region of Liberia

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Diamonds for Peace

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Front Cover Image: Artisanal Diamond Mining in Mano River Congo, Grand Cape Mount County

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If you have an inquiry, please send an email to: info@diamondsforpeace.org

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Abbreviation

CDA	Cooperative Development Agency
DFP	Diamonds for Peace
DMC	Diamond Mining Community
EPA	Environmental Protection Agency
GDO	Government Diamond Office
GIZ	German Gesellschaft für Internationale Zusammenarbeit
KPCS	Kimberley Process Certification Scheme
LISGIS	Liberia Institute of Statistics & Geo-Information Services
MLME	Ministry of Lands, Mines, and Energy
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
UOF	Universal Outreach Foundation

About Diamonds for Peace

Diamonds for Peace (DFP) is a NGO officially registered in Yokohama City, Japan, established by the founder, Chie Murakami, who visited Liberia in May 2014 and saw the need to make changes in the diamond sector. The founder and board members have established a non-profit organization in Liberia, Diamonds for Peace Liberia, in November 2016 which was accredited as a national NGO by the Liberian government in April 2017.

DFP is working towards a world in which all the diamonds are mined, cut and processed with humanitarian and environmental considerations, meeting the following mission objectives:

1. To improve the working conditions and social status of the workers in the diamond supply chain; and
2. To promote ethics and fairness in the diamond industry.

DFP focuses on three areas of operation in order to achieve the above mission:

1. Awareness-raising: To raise awareness of the problems and issues in the diamond industry.
2. Self-reliant support: To support the improvement of working conditions and the social status of artisanal diamond workers in developing countries, through more self-reliant and collaborative community efforts, including cooperatives, with a regional focus in Africa.
3. Emergency assistance: To provide assistance in the event of disasters or epidemics in the targeted countries.

DFP considers Liberia as its first targeted country, estimating 100,000 artisanal diamond and gold miners[1], however, the artisanal mining sector is not formalized. The Ministry of Lands, Mines, and Energy (MLME) in Liberia has developed the "Regulatory Roadmap for the Artisanal Mining Sector in Liberia" (Roadmap) in 2016, its conceptual foundation aiming to formalize the sector.

DFP is planning to implement a model project to promote the artisanal diamond workers' self-reliance through the basic tenets of fair trade by organizing them into cooperatives and running them democratically, in line with the Roadmap. In order to design the model project, DFP has collected information, visited the field, conducted field surveys and met key stakeholders to understand the reality on the ground. This report shows the findings from the above-mentioned activities that DFP conducted from August 2016 to March 2017.

[1] World Bank (2012). Artisanal Mining in Critical Ecosystems. A Look at Gabon, Liberia and Madagascar. https://www.profor.info/sites/profor.info/files/docs/ASM-brochure.pdf Accessed on 1st March 2017

The Objectives of the Situation Analysis

Objectives

DFP aims to design a model project which best suits their particular needs. As such, the situation analysis aims to carefully assess these need, with a view to meeting the following objectives: (i) better understand the daily on-the-ground reality and challenges faced by the artisanal diamond miners, diggers, their families and community members in both their work and personal spheres; (ii) learn about the types of initiatives they have launched in order to solve their own problems, and (iii) improve their living condition.

Artisanal diamond mining in Gbongor Village, Bomi County

Executive Summary

Reality of Artisanal Diamond Mining

In Liberia, MLME oversees mining activities through its decentralized regional and local mining agencies which deploy mining agents and local MLME officers, to supervise the artisanal and small-scale mining. The western region of Liberia has fourteen mining agencies. The predominant mineral regulated in nine of them is diamond. MLME issues three types of diamond mining licenses, that is, Class A for industrial mining, Class B for small scale mining, and Class C for artisanal mining. Each license type sets out different mining conditions and regulations (for further details see section on Major Findings, p. 19).

There are many Muslims in the western region. As such, the Muslim religion, combined with local indigenous beliefs, influence people's behavior and customs in artisanal diamond mining. For example, the work-week observes Friday as a day of rest and prayer, in line with Muslim tradition. It is a local custom to make sacrifices, in the belief that this will help to increase the diamond yield. Additionally, there are some mining claims where women are not allowed to enter in the belief that their presence will negatively impact the diamond yield.

Miners tend to live in the same community for more than 10 years—in fact, 78% of miner respondents lived in the same mining town for over a decade. Diggers are a bit more mobile, 59% of them reported having lived in the community of their current residence for over five years, with the remaining 41% having resided in the same place for less than 5 years. Contrary to popular belief, which perceives diggers to be a highly transient population, reflected in the oft-heard remark "diggers are constantly on the move," a significant number of diggers do in fact, tend to live in one community for several years at a time.

Miners' and diggers' ability to read and write English is very limited. About half of the miners and diggers are illiterate. On the other hand, most miners and diggers interviewed had basic numeracy skills, and could carry out basic math calculations (for further details see p. 29). In terms of those lacking numeracy skills, the majority were women. As such, women are in a particularly vulnerable situation, given that a successful negotiation of prices and acquiring a fair share of profits is dependent, among other factors, on these skills.

Diggers do not receive daily wages. They receive a part of the profit from the diamond sale, upon its completion. The customary profit-sharing arrangement dictates that a miner take 50% of the profits from the sale and that the group of diggers take the other 50%, divided equally among the group members. In some DMCs, diggers are also responsible for paying 10% of their share to the cook responsible for preparing the group's meals, and another 10% for the engine oil and gasoline used to run the water pump.

The amount of diamonds recovered over the past year has been modest. 73% of miners and diggers said they found diamonds smaller than ten carats in size, and about half of the miners and diggers reported that the total sales price of diamonds over the past year was less than USD1,000. Thus, translating to a low

annual income. The median annual income for miners is USD1,044 and for diggers, it is USD300. As such, it is difficult for them to make a living exclusively from diamonds. In fact, the majority of miners and diggers participate in other income-generating activities. Even with the additional income, the large majority do not have any savings.

Many mining activities in the western region are artisanal and small-scale. The average number of diggers under the direction of a miner is generally composed of an eight-person-team. The field research team estimated the monthly cost of running the artisanal diamond mining activities with eight diggers to be USD463.67.

The biggest issue as self-reported by both miners and diggers, is their inability to sell diamonds at a fair price. Largely attributed to: 1) their inability to evaluate the market-value of diamonds; 2) the lack of bargaining power; and 3) their dependence on supporters. In many cases, miners cannot afford to pay the up-front cost to run mining activities in his/her own mining claims due to their low-level of income. As such, miners ask supporters to bear the up-front cost. In return, they agree to sell their diamonds to them, at a lower than market-price. Supporters buy the diamonds at the lower prices arguing that they are carrying the up-front costs for the mining. This creates a vicious cycle, whereby miners on an on-going basis are unable to pay the cost of mining their claims, due to the under-priced diamond-sales to supporters, perpetuating a continuous reliance on them.

The biggest issues faced in mining claims, as self-reported by miners and diggers, are violence and theft. The team heard about many cases of diamond thefts which resulted in violent fights. While the survey included questions regarding human rights and environmental destruction as potential significant challenges, few interviewees shared this view.

Overall, the interviews and conversations pointed to a widespread lack of trust among stakeholders in the artisanal diamond mining. Miners claim that diggers (are trying to) steal diamonds. Diggers criticize miners and supporters for exploiting them. The main reasons for the trust-gap may be attributed to: 1) the lack of a transparent and inclusive consultation process with all stakeholders, including diggers on the agreed price (as diamond sales are carried out in a closed-door meeting between the miner and the supporter—where the two alone agree on the set price, and only afterwards inform diggers); 2) the lack of systematic record-keeping—such as receipts which provide proof of diamond sales and can also serve to establish a more systematic trail of their valuation informing future transactions); 3) the lack of a system of redress and/or a support safety-net for diggers when injustices arise, with the exception of Bellekpalamu Town in Gharpolu County which have a self-organized diggers' group to discuss common issues and challenges, as well as Zalekai Mining Agency in Gbarpolu County—where diggers are also organized; 4) and the lack of options for additional income-generating opportunities which provide sustainable wages.

The majority of diamonds mined in Liberia seems to be either smuggled or sold on the black market. Largely attributed to the fact that many miners are unable to renew their mining licenses because of a lack

of funds, and thus unable to register the diamonds with GDO, barring their circulation in the formal market. As such, those with expired licenses sell their diamonds to informal brokers. According to both miners and diggers, it is very easy to sell diamonds without registering them with GDO.

67% of miners were aware of MLME's policy to organize miners/diggers into cooperatives. On the other hand, only 12% of diggers were aware of it. 61% of miners responded that they knew what a cooperative was, but only 18% of diggers concurred. After the team explained the concept of a cooperative, 89% of miners and 82% of diggers agreed that it would be a beneficial undertaking.

Although there are many issues in the artisanal diamond mining sector, there are some good practices that have been devised by these communities to try and solve their own challenges. For example, the team witnessed: an annual mining meeting organized by a mining agency, a self-organized group of diggers in Bellekpalamu Town, Gharpolu County, and a self-initiated school construction project.

Living Conditions of Miners' and Diggers' Family Members and of Other Community Members

89% of the interviewees were women. About half of them had never been to school and are unable to read or write English, the official language of Liberia. All of them responded that they could do basic mathematical calculations—a livelihood asset which allows them to run their small businesses.

On average, household size varies somewhere between five to eight family members. The majority of households (57%) have two meals per day, while the rest have only one meal per day. Women are solely responsible for meal-preparation. Their main staple food is rice. They use fuel-wood or charcoal for cooking.

About half of the respondents had school-aged children. However, two out of the six communities surveyed do not have access to a primary school.

The most frequent diseases reported to have ailed respondents during the past year were malaria and fever/cough/diarrhea. 97% of the respondents had visited a medical facility when sick. In terms of accessibility of care[2], 26% of the respondents were more than two hours away from a health-care facility, while the rest was less than two hours away—with 21% being more than 10 minutes away but less than 30 minutes and 10% having a facility just 10-minutes away from home.

Overall, these communities tend to be highly under-served in terms of infrastructure. 80% of the interviewees did not have access to electricity. They depend on flash lights or Chinese lamps (similar but bigger than flash lights). There is also a big gap in terms of access to sanitation facilities as well—63% of the respondents void outside and 65% of them calculate that the distance to their voiding place is less than 300 meters. 13% had either private or shared access to either a flush or pour-flush facility connected to a septic tank, and the rest a mix of access to hanging toilets, hanging latrines or pit latrines. In terms of

[2] Please note that 3% of respondents did not know the distance to the closest health facility. Details on health-related responses are available on p. 60.

access to water, 70% get drinking water from hand pumps, while 27% get their water from a nearby river/lake/pond. About three-quarters (74%) have access to a water source located less than 300 meters from their home. In terms of water safety, 69% drink water treated with chlorine and 29% drink untreated water.

40% of the respondents own land in the community where they live, while 51% do not. 60% have livestock and 87% raise chickens. Among those who raise chickens, 38% have small flocks composed of one to five chickens and 33% have slightly larger flocks composed of six to ten chickens.

There was no mobile phone network in the majority of the communities that the team visited. More than half of the respondents had mobile phones and radios. Very few had smart phones. 85% of respondents get their news and information from friends/acquaintance, and 13% of them from radio programs.

For entertainment, most people in these communities, enjoy playing soccer and/or watching soccer, and dancing at clubs. The team often encountered boys and men playing soccer across these communities.

Poverty is rampant. In terms of annual household income: about a third (29%) of the respondents reported that their households earned nothing, 23% were unsure, 18% reportedly earned USD100 or less, 14% between USD101-300, 6% had earnings estimated between USD301 and 600, and a small minority of 11% earned more than USD2,000/annum. For the interviewees, the idea of annual household income is a foreign concept due to their daily struggle to meet urgent subsistence needs, without the assurance of a daily wage. In terms of monthly income reported for October 2016, which is part of the dry season, and therefore positively characterized by higher earnings in comparison to the rainy season, it was equivalent to USD26 to USD50 for 20% of respondents, for another 20% it was estimated to be between USD101 to USD300, 17% earned USD25 or less, 14% earned zero, another 14% were unsure or unwilling to report, 6% earned between USD51-100, another 6% had earnings over USD1,000, and 3% earned between USD301-600. The dry season is characterized favorably, in terms of income, because small businesses gain vibrancy in response to the increased demand around the bustling activities generated by mining. On the other hand, during the rainy season, mining is dormant, flooding and bad road conditions prevail, making transport difficult, and the prices of goods increase, thus decreasing sales. The main household expense cited is food, with 33% of respondents spending between USD76 to USD100 on food per month and 37% spending somewhere between USD101 to USD250.

Over two-thirds (71%) of respondents did not think the artisanal diamond mining activities benefitted their communities. Half (50%) expressed concern that their communities were in fact disadvantaged by mining. Some benefits cited were the payment raised (a part of the profit or in-kind donation) for the town chief based on the amount of production, and that the cook for the diggers could receive a share of the profits. On the other hand, the disadvantages reported included: (i) the inflow of workers from outside the community; (ii) the lack of interest by workers in community development; (iii) the flight of workers to the capital city once they find diamonds and their eventual return only once they are left penniless; and (iv) the

prevalence of theft in mining claims and/or the community.

54% of respondents belonged to some kind of resident association. These were mostly financial associations referred to as "SUSU,"—savings clubs that help members financially through an informal means of collecting and saving money. Other associations mentioned included: community watch-dog groups that prevent crimes, agricultural groups, and tribal groups. When respondents were asked to describe activities that they had undertaken to improve their own and their families' well-being, they mentioned coming together as a community to construct a school, and giving lessons to children. These responses signal to the team that it is possible that residents cooperate with one another on mutually beneficial endeavors to improve their living conditions.

Roles and Activities of CDA

CDA is a Liberian government agency that encourages workers to self-organize and its responsibilities include providing: (i) guidelines and procedures for initiating a cooperative; (ii) capacity-strengthening and training for cooperatives; (iii) cooperative monitoring and oversight to ensure that they are abiding by the law; and (iv) support and advice, as necessary. In order to establish a cooperative, a minimum of 15 members are needed of which one-fourth must be female. When CDA confirms that a cooperative is running its activities properly for a given period of time, it is provided with an official permit, granting it "cooperative" status for life.

Proposed Activities for Efficient Income Generation and Reduced Mining Related Costs

To have fair diamonds in the future, it is necessary to break the cycle of dependence on supporters. The key to breaking this cycle, is to raise miners' and diggers' income sufficiently so that they may sustain their mining activities on their own, which can be achieved by both reducing their mining costs and providing them with an additional income-generating activity. The team researched options, and considers beekeeping as an efficient income generation activity and Nerica (New Rice for Africa) farming as a viable way to reduce mining related costs.

Regarding beekeeping, the more honey the beekeepers harvest, the more income they can access because supply has not yet met neither domestic nor international demand. Furthermore, beekeeping needs only 10 dedicated minutes per week for tending the beehives, after the initial set-up. Since there is a NGO which provides beekeeping training and the necessary follow-up at a reasonable price, it is a viable option as an additional income generating activity for miners and diggers.

In terms of reducing mining-related costs, the team considers that miners could grow their own rice, which was calculated to amount to USD119—about a quarter (26%) of the total cost (USD463.67) for sustaining an average 8-person team of diggers in the area. The team considers Nerica (New Rice for Africa) as one option, as this hybrid crossbred African and Asian rice, is strong in withstanding disease and dryness, and produces high yields. Additionally, there is an organization named CHAP experimenting with Nerica, which provides trainings in Liberia. According to CHAP, the productivity of Nerica in Liberia is about four

MT per ha. CHAP provides two-year trainings, focusing on basic skills in the first year and advanced skills in the second year. The only challenge, is that farmers need to buy a USD5,000 imported machine which has dual cultivation/weeding functionality. If DFP's project incorporates the Nerica farming activity, it is necessary to consider options for the cooperative to purchase this machine and use it sustainably.

Input into Project Design

The team recommends that DFP consider and incorporate the following into the project design:

1. Break the cycle of dependence on supporters
2. Include the leaders of diggers as members of a cooperative
3. Encourage diggers to organize themselves and to hold their own regular activities
4. Provide practical strategies for making record-keeping a habit, and clearly communicate its benefits (i.e. helpful in standardizing diamond valuation)
5. Raise awareness and understanding by miners/diggers on the benefits of registering diamonds with GDO
6. Raise awareness and understanding by miners and diggers on the benefits of a cooperative
7. Set up economic incentives for members of a cooperative
8. Use the existence/progress of self-initiated community projects as an indicator
9. Communicate the project's benefits clearly through awareness-raising campaign
10. Think about sustainability when the project is completed and exit strategy when all the diamonds are exhausted in the community

Project's Tentative Plan

The team proposes the following tentative plan for a model project to promote miners' and diggers' self-reliance through a fair diamond trade.

- ✓ Overall Goal: Fair diamonds mined in the targeted diamond mining community located in the Western Region of Liberia to be distributed in international markets.
- ✓ Project Purpose: Miners and diggers increase their income and improve their living conditions by instituting a structure that produces and distributes fair diamonds.
- ✓ Outputs

  Output 0: The project is ready to start.

  Output 1: The targeted artisanal diamond mining community has a mining cooperative registered with GoL.

  Output2: Capacity to run a democratic cooperative is developed.

  Output 3: Traceability from mine to market is created.

  Output 4: Fair price and practices for maintaining it are introduced.

  Output 5: The Project's progress is publicized.

Methodology

Methodology

The team conducted the survey in English utilizing the methodology described below.

1. Preliminary Information Gathering

DFP selected Margibi, Gbarpolu, Grand Cape Mount and Bomi Counties to conduct the survey which are located mainly in the Western Region of Liberia, as MLME had indicated this geographic area to be its priority for organizing artisanal diamond workers into cooperatives, under the Roadmap.

As indicated in the table below, poverty rates in the counties of the western region (Gparpolu, Grand Cape Mount and Bomi Counties) are higher than the national average according to the household survey results from 2014, conducted by the Liberia Institute of Statistics & Geo-Information Services (LISGIS). Therefore, DFP considers it of particular importance to implement a model project in the western region of Liberia and support workers' self-reliance, as they are among the most vulnerable, by encouraging them to organize into cooperatives.

Counties Selected and Rationale for Selection

County	Reason of Selection
Margibi County	Proximity to the capital city Monrovia
Gbarpolu County	Prioritized in the Roadmap. The ratio of poverty is high.
Grand Cape Mount County	Ditto
Bomi County	Ditto

Poverty Rates

Region	Ratio of Absolute Poverty Absolute Poverty: state that the minimum needs of food and essential items are not satisfied.	Ratio of Extreme Poverty Extreme Poverty: the total expenditure of food and other items is less than the cost of minimum food requirement.
National Average	54.1%	18.5%
Western Region (Gbarpolu, Grand Cape Mount, and Bomi Counties)	66%	24.3%

Source: Household Income and Expenditure Survey 2014, Statistical Abstract, March 2016[3]

[3] Liberia Institute of Statistics and Geo-Information Services (LISGIS), Household Income and Expenditure Survey 2014, Statistical Abstract, March 2016 http://microdata.worldbank.org/index.php/catalog/2563/download/37616 Accessed on 3rd May 2017

Geographic Location of the Selected Counties

Source: d-maps.com (http://www.d-maps.com/)

DFP's coordinator visited some mining agents' offices and some local mining authorities in those counties to collect their basic information and characteristics of the Diamond Mining Communities (DMCs) and then proceeded to make a list of DMCs in those four counties. However, it should be noted that the information provided was only partial—as not all miners were willing to disclose full and complete information. DFP selected six DMCs for the field visits and survey, as shown below. The selection criteria attempted to include a combination of communities varying in population size (from small to large), with variance in religious make-up (including communities with more homogenous vs. more heterogenous religious affiliation), a range of ethnic and tribal diversification (ranging from homogenous to more heterogenous communities), and a mixed prevalence of predominant minerals (selecting some communities where only diamonds were mined and others where both diamonds and gold were mined).

6 DMCs Selected for the Survey

No.	County	Name of Mining Agency	Predominant Mineral	Name of DMC	Estimated Population of DMC	Estimated population of ARTISANAL miners	Estimated population of Diggers	Tribes	Religion
1	Margibi	Kakata	Diamond	AB Anderson (Known as Taylor's Farm)	300	1	2	Kpelleh	Christianity
2	Gbarpolu	Zalekai	Diamond	Bellekpalamu	2000	30	100+	Kpelleh, Mandingo	Islam, Christianity
3	Grand Cape Mount	Varguay	Diamond, Gold	Varguay	2500	10	30	Mende, Vai, Gola	Islam, Christianity
4	Grand Cape Mount	Kwallahum	Diamond	Mano River Congo	6,000+	50	700	Mende, Vai, Gola	Islam, Christianity
5	Bomi	Suehn Mecca	Diamond	Gbongor Village	800+	7	60	Gola	Islam, Christianity
6	Bomi	Suehn Mecca	Diamond	Balikan Town[4]	1000+	13	100+	Gola, Mandingo	Islam

Information in the above table was collected before the field survey was conducted and thus may differ from the information collected during the field survey.

2. Field Survey

The team paid visits to the above six DMCs from the end of October to the middle of November 2016. In the field, the team carried out the following activities:

2-1. Information gathering from mining related personnel, included the following: regional coordinators, mining agents, mining chairmen, patrol men, and diggers' group leaders.

2-2. Information gathering from leaders in DMCs such as town chiefs, chairladies and town elders.

2-3. Interviews with: a) miners, b) diggers, and c) their families, as well as other community members.

When the team arrived in a DMC, team members explained the purpose of their visit to town leaders and to the local mining authority and then requested that the mining chairman provide the names of all miners. The team then made a list of all miners and numbered them, similar to lottery tickets, and then local people randomly selected three tickets, ensuring a process of random selection.

After the selection of three miners, the team requested each miner to give all the names of diggers under his employment, made a list of the diggers and numbered them, using the same lottery approach as above, and then local people randomly selected three tickets, once again, ensuring a process of random selection.

One team (including one Japanese and one Liberian) interviewed a) miners and b) diggers about diamond mining activities, and the other team (including one Japanese and one Liberian) interviewed c) their family

[4] Balikan Town is geographically located in Grand Cape Mount County. However, the team puts it under Bomi County because MLME classifies it under Suhen Mecca Mining Agency in Bomi County.

members about their living, health, and sanitary conditions, as well as on the effects of diamond mining activities on their communities. In cases where their family members did not reside in the DMCs, the team interviewed women 18 years old or older living in the DMCs, and they were also chosen randomly.

The total number of people interviewed under each category is shown below.

The Number of Interviewees

Category	The number of people interviewed
a) Miners	18
b) Diggers	17
c) Family members of miners and diggers interviewed and women in DMCs	35
Total	70

2-4. Observance of the artisanal diamond mining sites.

The team visited the artisanal diamond mining sites in above six DMCs, with the exception of Gbongor Village in Bomi County due to its inaccessibility—as team members lacked the proper gear to walk through the muddy bush. Between February and March 2017, the team paid field visits and included a large DMC. In total, the team observed artisanal diamond mining sites in the following DMCs listed below.

Artisanal Diamond Sites Observed

#	County	Name of Mining Agency	DMC	Scale*
1	Margibi	Kakata	AB Anderson (Known as Taylor's Farm)	Small
2	Gbarpolu	Zalekai	Bellekpalamu	Medium
3	Gbarpolu	Zalekai	Yeamah	Small
4	Grand Cape Mount	Varguay	Varguay	Small
5	Grand Cape Mount	Kwallahum	Mano River Congo	Medium
6	Grand Cape Mount	Kwallahum	King Stone	Large
7	Bomi	Suehn Mecca	Balikan Town	Medium
8	Bomi	Suehn Mecca	Sackie Town	Small
9	Bomi	Suehn Mecca	Gbongor Village	Small

*The measures the artisanal mining sites in each DMC, based on the team's observation.

3. Information Gathering from Other Organizations

DFP paid visits to other organizations in Monrovia such as CDA, EPA and GIZ. These agencies welcomed DFP and supported its intention to start the model project in Liberia, offered some information and knowledge, and agreed to exchange ideas/views in the future.

Limitations

Given the low educational attainment of the majority of DMC residents, whereby most have not finished primary school and some have never attended a school at all, it was difficult for them to understand the DFP mission, purpose of the field survey, and the concept of random sampling although all the miners and diggers interviewed could speak English to some extent. It was challenging for miners' and diggers' family members and women living in DMCs to understand English. In those cases, villagers helped interpret the questions from English to their local languages.

In some DMCs, the mining chairmen only gave the team a partial list of miners, rather than disclosing all the names, perhaps attempting to bias the sample with more positive input, or for other reasons not understood nor disclosed to the team.

Most interviewees answered all the questions to the best of their knowledge, but some miners refused to answer some personal questions, such as annual income.

Therefore, the results of the field survey do not necessarily reflect the voices of all the miners and diggers in the western region of Liberia.

Definition of Terms

In this report, the authors use the below terms, as per the stated definitions.

Miner

A miner is a person who possesses (or is supposed to possess) a Class C License which allows him/her to carry out artisanal mining. Some miners dig the land on their own, while others hire teams of diggers to dig his/her mining claim.

Digger

People refer to diggers as “diamond boys” in the field. A digger is a person who digs the land in a quest for diamonds.

Broker

A broker is a middleperson who buys diamonds from miners or supporters and sells them to a dealer. A broker needs a license from MLME to officially operate.

Dealer

A dealer is an exporter who exports diamonds abroad. In order to officially operate, a dealer needs a license from MLME. Dealers are not allowed to visit diamond mining areas.

Supporter

A supporter is a person who provides miners and diggers with tools/meals/overall up-front costs needed to run the mining activities. In return, a supporter claims his ownership of a diamond mined in a mining claim he supports. In many cases, supporters are brokers.

Major Findings

The team would like to present the major findings, observation and analysis as follows.

1. General Information on Artisanal Diamond Mining in the Western Region of Liberia

1-1. Mining Agencies

In Liberia, DMCs are grouped into mining zones which then constitute mining agencies. In the Western Region, there are 14 mining agencies as shown in the table below. MLME assigns one mining agent per agency to oversee the artisanal and small-scale mining activities which fall under Class B and Class C Licenses. (Please see next section below for more information).

Mining Agencies in the Western Region of Liberia

#	County	Mining Agency	Predominant Mineral
1	Bomi	Suehn Mecca Mining Agency	Diamond, Gold
2	Gbarpolu	Gbarma Mining Agency	Diamond
3	Gbarpolu	Zalekai Mining Agency	Diamond
4	Gbarpolu	Weisuah Mining Agency	Diamond
5	Gbarpolu	Kungbor Mining Agency	Diamond, Gold
6	Gbarpolu	Belleh Mining Agency	Gold
7	Gbarpolu	Henry Town Mining Agency	Gold
8	Gbarpolu	Bopolu Mining Agency	Gold
9	Grand Cape Mount	Kwallahun Mining Agency	Diamond, Gold
10	Grand Cape Mount	Varguay Mining Agency	Diamond, Gold
11	Grand Cape Mount	Keita Mining Agency	Diamond, Gold
12	Grand Cape Mount	Bangoma Mining Agency	Gold
13	Grand Cape Mount	Camp Freeman and Timber Village Mining Agency	Diamond, Gold
14	Montserrado	Bentol Mining Agency	Gold, Diamond

Source: Reported by MLME officers interviewed.

1-2. Licenses

i) Diamond Mining Licenses:

MLME issues three types of diamond mining licenses, that is, Class A license, Class B license, and Class C license. In the case that a miner wants to mine both diamond and gold in one mining claim, s/he needs to have the two pertinent diamond and gold mining licenses. Information on each license is summarized in the table below.

Types of Diamond Mining Licenses

Type of License	License Fee	Description
Class A	USD35,000 (Valid for one year, can be renewed for 25 years)	-Industrial diamond mining. -Granted to both individuals and companies. -No nationality restrictions.
Class B	USD10,000 (Valid for five years)	-Small to medium scale diamond mining. -Use of heavy machinery allowed. - Restricted eligibility to Liberian nationals and residents. -Claim's maximum area must be equivalent to less than 100 acres.
Class C	USD300 for a new license USD150 for renewal (Valid for one year)	- Artisanal diamond mining. - Use of heavy machinery not allowed. - Access limited to alluvial deposits. - Only Liberian nationals are eligible. - Four license maximum per Liberian national. - Claim's minimum area must be equivalent to 500ft x 500ft, and its maximum 1,060ft x 1,060ft.

Source: Interviews with MLME Officers and UNDP (2008)[5]

ii) Broker and Dealer Licenses

The broker's role is to buy diamonds in mining towns, transport and sell them to dealers in Monrovia who then export them to international markets. Dealers, according to national regulations, are not supposed to visit the mining fields. Instead, dealers support brokers financially so that they can run their brokerage business in mining towns. Brokers and dealers are supposed to have licenses to operate their businesses. However, there are many black-market brokers who buy diamonds under covert operations. Information on each type of broker and dealer license is summarized below.

Broker and Dealer Licenses

Type of License	Annual License Fee	Description
Broker	USD1,500 (Valid for one year)	-Some brokers are based in mining towns but the majority are based in Monrovia. They send their agents to mining towns to purchase diamonds.
Dealer	USD25,000 (Valid for one year)	-GoL has a quota for a dealer to export, a minimum of USD100,000 per quarter. Even if a dealer does not meet the quota, s/he is still liable to pay royalties equivalent to exports of USD100,000. -Since the cost and the quota are high, the number of officially

[5] Poverty and Social Impact Assessment and Strategy Formulation on Artisanal Diamond Mining Reform in Liberia, UNDP 2008

		registered dealers is less than ten in Liberia. -Only Liberian nationals are eligible for dealer licenses. Foreign nationals can operate their business in a partnership with a Liberian national with a dealer license. -Dealers are not allowed to visit the mining areas.

Source: Interviews with MLME Officers.

The team had opportunities to talk with brokers and found that some did not have the adequate tools to evaluate the diamonds. One broker with whom the team met, demonstrated his simple and traditional tools including a scale, loupe and sieves, as shown in the photo below.

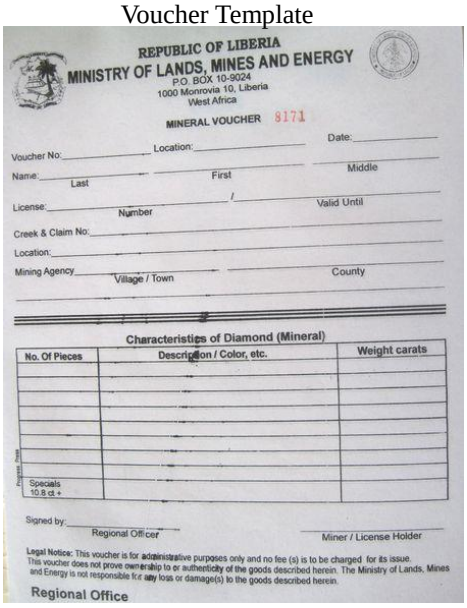
A Broker's Tools

From left: digital scale, sieve, loupe

1-3. Government Diamond Office (GDO)

MLME allocates five Government Diamond Offices (GDOs) in the Western Region as shown in the table below. GDOs numbered 1 to 4 in the table are estimated by the team to be located in the center of high diamond-yielding areas. GDO number 5 is located in the capital city of Bomi County.

Voucher Template

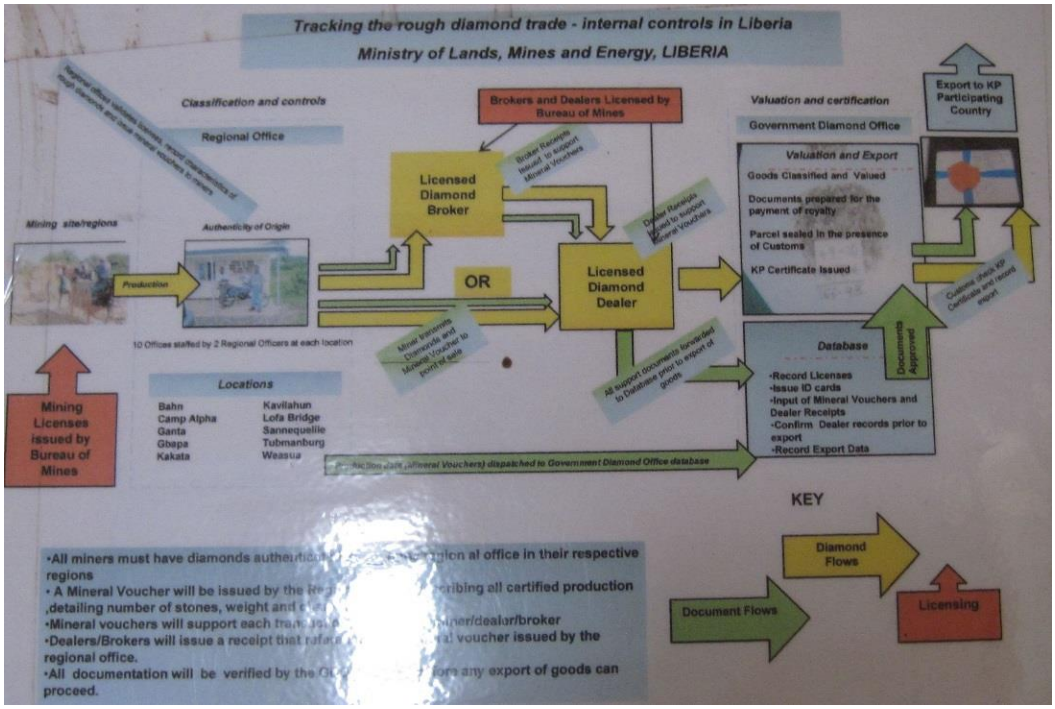

REPUBLIC OF LIBERIA
MINISTRY OF LANDS, MINES AND ENERGY
P.O. BOX 10-9024
1000 Monrovia 10, Liberia
West Africa
MINERAL VOUCHER 8171
Voucher No: Location: Date:
Name: Last First Middle
License: Number / Valid Until
Creek & Claim No:
Location:
Mining Agency Village / Town County
Characteristics of Diamond (Mineral)
No. Of Pieces | Description / Color, etc. | Weight carats
Specials 10.8 ct +
Signed by: Regional Officer Miner / License Holder
Legal Notice: This voucher is for administrative purposes only and no fee (s) is to be charged for its issue. This voucher does not prove ownership to or authenticity of the goods described herein. The Ministry of Lands, Mines and Energy is not responsible for any loss or damage(s) to the goods described herein.
Regional Office

GDO also plays a role in evaluating the rough diamonds that miners bring and issues a voucher certifying the carat and color of the diamond. The sequencing of the regulatory process, when following the guidelines, is as follows—upon a sale, the miner submits a copy of the voucher to a broker, who then submits it to the dealer, who then exports it with a Kimberley Process Certificate. A GDO officer told the team that a miner could sell a diamond directly to a dealer instead of a broker, once it is registered with GDO, which can potentially result in increased profits.

GDOs in the Western Region of Liberia

#	Location	County
1	Lofa Bridge	Grand Cape Mount
2	Mano River Congo	Grand Cape Mount
3	Weasua	Gbarpolu
4	Camp Alfa	Gbarpolu
5	Tubmanberg	Bomi

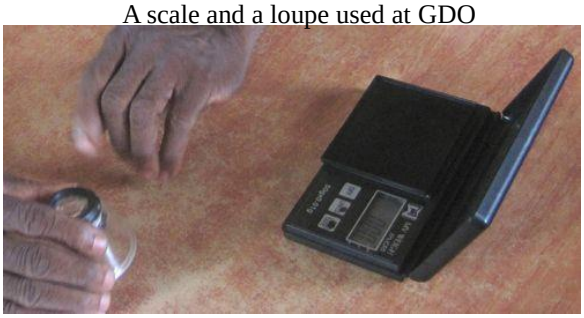
Internal Control System of Diamonds in Liberia Posted at GDO



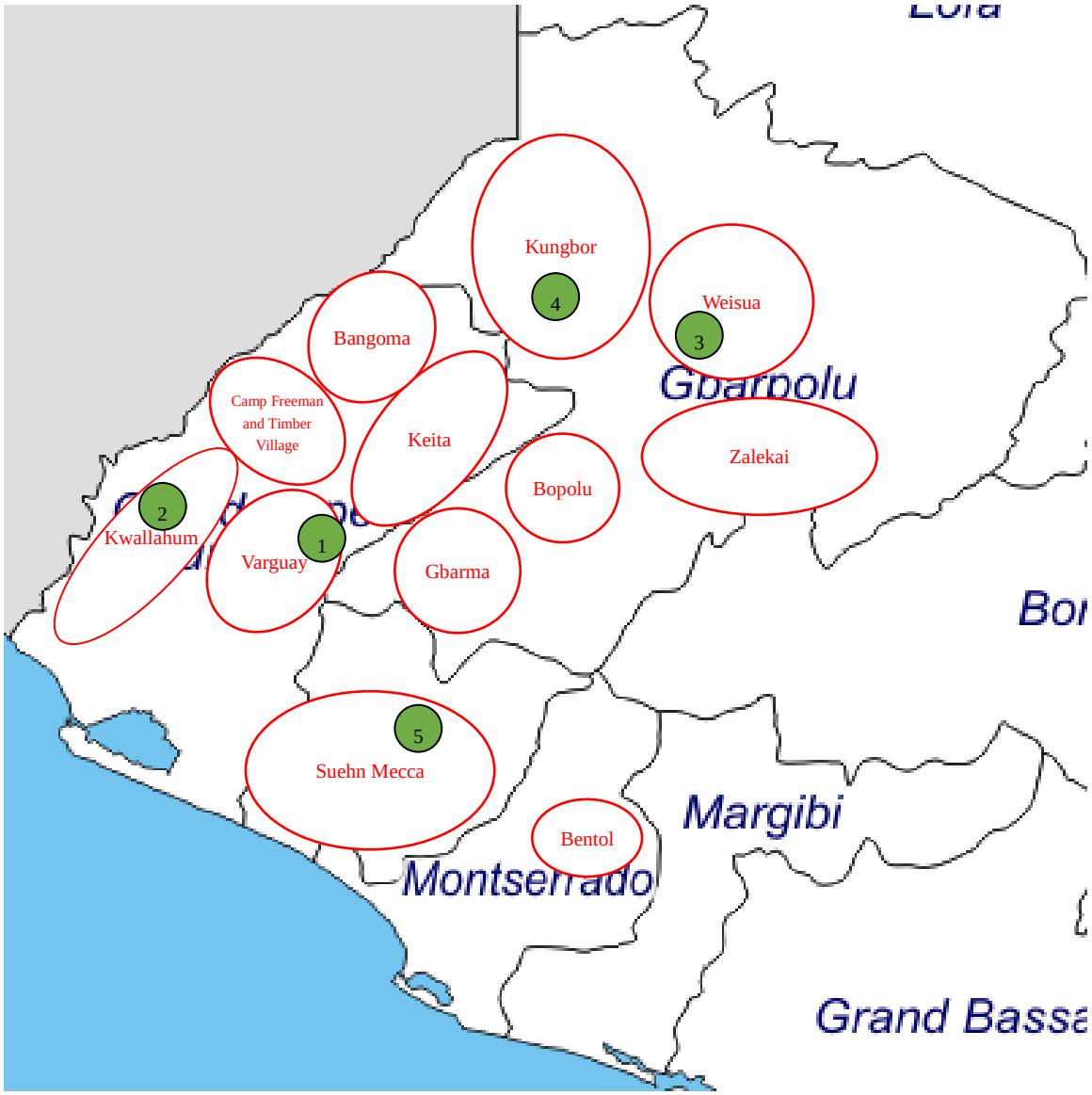
GDO officers work with simple tools. An officer demonstrated his tools to the team, including—a scale and a loupe as shown in the below photo, reporting that he does not have a diamond tester. He also told the team that an officer from MLME trained him to evaluate the diamonds. Given the current situation, the team considers it very important to carry out a blanket evaluation of GDO officers and ensure that they are well-equipped with the right knowledge and adequate tools to provide solid assessments, offering needed re-skilling, as required.

Another role GDO plays is to educate miners and raise their awareness on the importance of registering diamonds and in encouraging them to follow-through with registration. The team speculates that the majority of diamonds miners recover are not registered with GDOs. During field visits, the team never saw any miner visiting GDOs.

A scale and a loupe used at GDO



Approximate geographic locations of mining agencies and GDOs in the Western Region of Liberia



[Legend] Red Circle: Mining Agency, Green Circle: GDO

1-4. General Information on DMCs

There are no official statistics available for the population of artisanal diamond miners and diggers. Liberian team members visited DMCs in the Western Region which were accessible by motorbike, and gathered the relevant information by interviewing mining agents, local mining authorities and community members about the predominant minerals, estimated populations of miners and diggers, as well as to the affiliation of community members to tribes, religions, miners' groups, diggers' groups and self-help community projects, as shown in the annex. Please note that there are DMCs accessible only by foot and some of them are not reflected in the table.

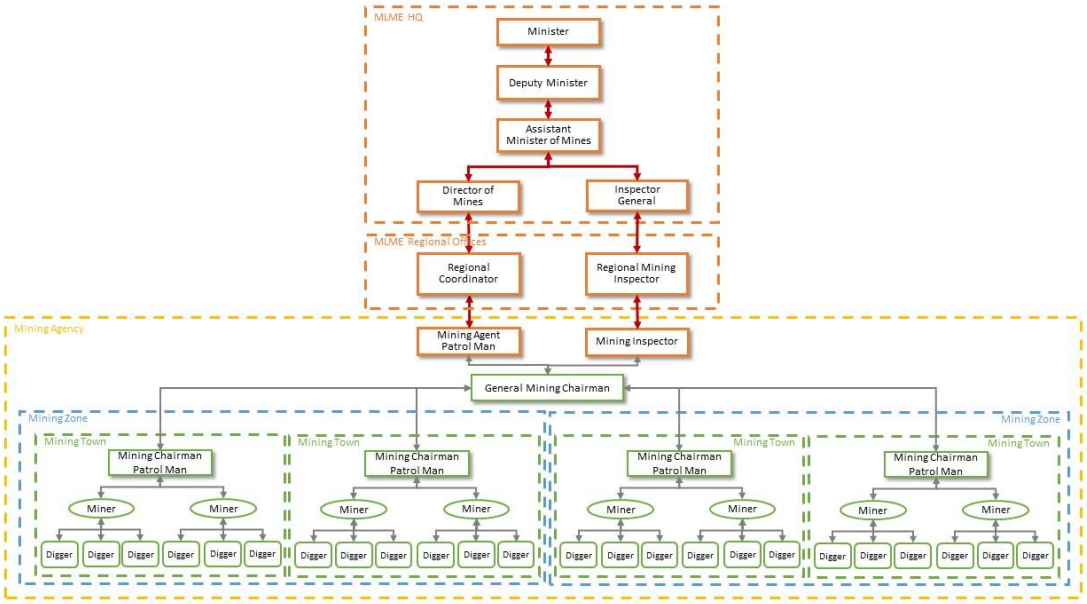
1-5. Artisanal diamond mining stakeholders

The key stakeholders of artisanal diamond mining on the ground are the regional coordinators at the regional headquarters for the Western Region in Lofa Bridge, who report to the director of Mines at MLME

headquarters. Each mining agency has a mining agent and a patrol man—officers employed by the MLME— and the general mining chairman, who represents all the mining chairmen across the different DMCs liaising with MLME. Each DMC has a mining chairman and a patrol man, both of them are unpaid volunteer, miners, and diggers called "diamond boys." Their reporting responsibilities are detailed in the figure below.

MLME allocates mining inspectors in the high-yielding areas. They play a substantial role in cracking-down on illegal mining and illegal brokers, and also monitor mining agents. They report to the regional mining inspector who subsequently reports to the mining inspector general at MLME headquarters.

Figure: Reporting Responsibilities of Key Artisanal Diamond Stakeholders



Source: Interviews with MLME Officers

2. Reality of Artisanal Diamond Mining on the Ground

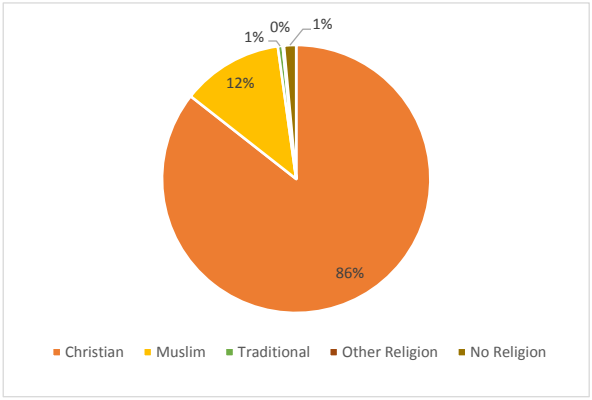
Basic information on the interviewees:

2-1. Religion

According to the national population and housing census from 2008, 86% of the population is Christian and 12% Muslim.

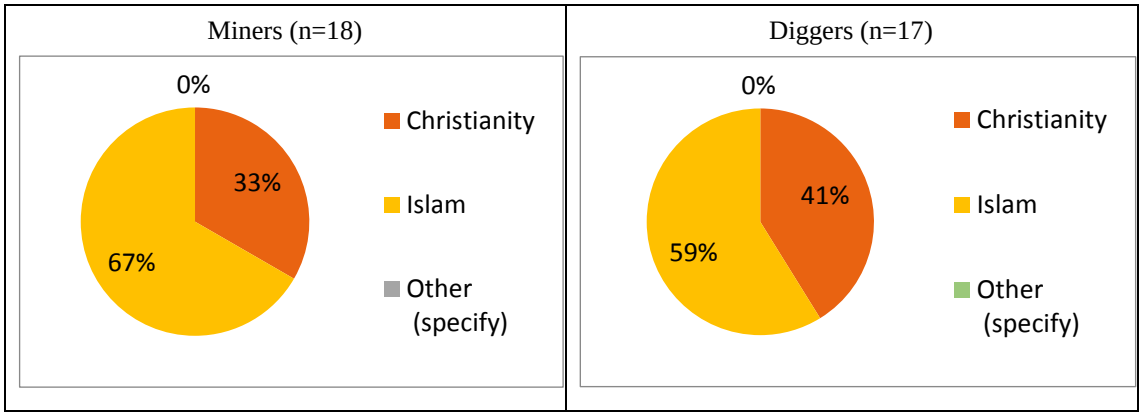
On the other hand, 67% of miners and 59% of diggers interviewed practice Islam, and 33% of miners and 41% of diggers practice Christianity. This can be largely attributed to the fact that the majority of the population in the Western Region, especially in Grand Cape Mount County, is made up of Vai people who practice Islam.

Distribution of Population by Religious Affiliation in Liberia



Source: 2008 Population and Housing Census, Republic of Liberia

Miners' and Diggers' Religious Affiliation



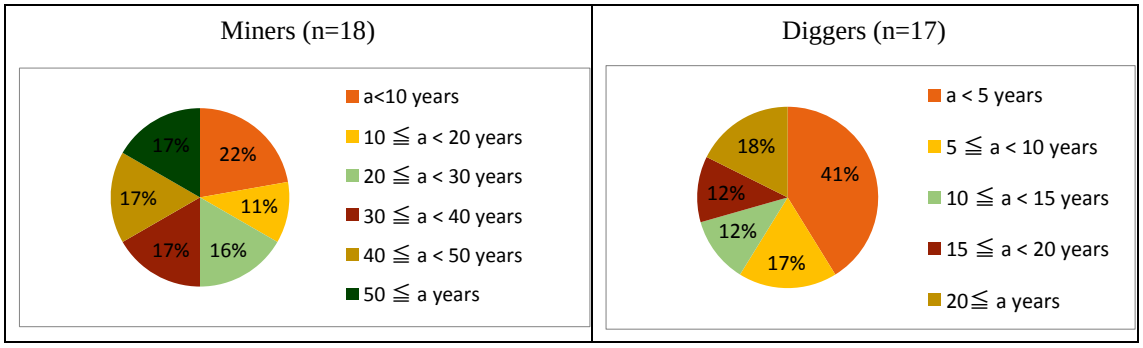
Islam combined with traditional indigenous beliefs significantly influence people's behaviors in artisanal diamond mining activities. For example, miners sacrifice goats and other animals periodically in the belief that this will help them increase their diamond yield. A miner told the team that God would increase the amount of diamonds in the land if he is able to provide enough sacrifices. In some areas, women are not allowed to step in a mining claim in the belief that this will negatively impact the mining yield. According to some miners' statements, a woman entering the mining claim was considered as "Zina," unlawful sexual intercourse, which would cause God's anger and wrath, resulting in a decreased mining yield..

2-2. Migration

Miners largely tend to stay in one place, in fact 78% of the miners interviewed have lived in the same mining town for more than 10 years.—understandable given the investment required by a mining operation. 41% of diggers interviewed have lived in the same mining town for less than 5 years and 59% have lived in the same mining town for over 5 years. Diggers tend to move a bit more frequently than miners. However, the ratio of diggers who stay in one mining town for more than five years is higher than the team expected.

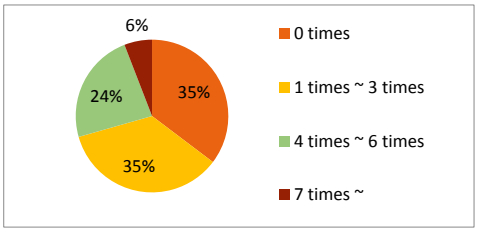
While some diggers stay in one town only for several months, the majority tend to stay much longer.

Number of Years S/he Has Lived in the Mining Town of Current Residence



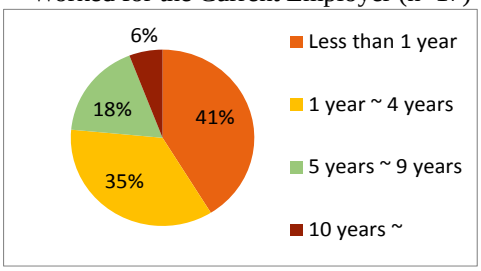
The team asked diggers how many times they had moved after starting diamond mining. 35% had never moved, 35% had moved between one to three times, 24% four to six times, and 6% seven times or more. Contrary to what local people usually say "diggers are constantly on the move," the majority of diggers that the team interviewed do not move frequently. Some diggers commute to another mining town once they are established in a certain place.

The Number of Times Diggers Have Moved After Starting Diamond Mining (n=17)



The team also asked diggers how many years they had worked for their current employer (either a miner or a supporter depending on the individual case.) 41% reported having worked for less than one year for their current employer, 35% one to four years, 18% five to nine years, and 6% for over 10 years.

The Number of Years Diggers Have Worked for the Current Employer (n=17)



2-3. Reasons People Work as Miners/Diggers

The team asked miners and diggers why they chose this trade, and for the majority this was simply an income-generating activity. Many had started working as diggers to get out of poverty. Some—this is especially true about miners—are attracted to the trade due to the enticing possibility of fast money. The team asked some diggers if they were willing to do another job, given that it could provide them with a stable income. They were agreeable and demonstrated no particular attachment to mining. Thus, reflecting the limited choice in income-generating activities, outside of mining.

Reasons People Work as Miners/Diggers

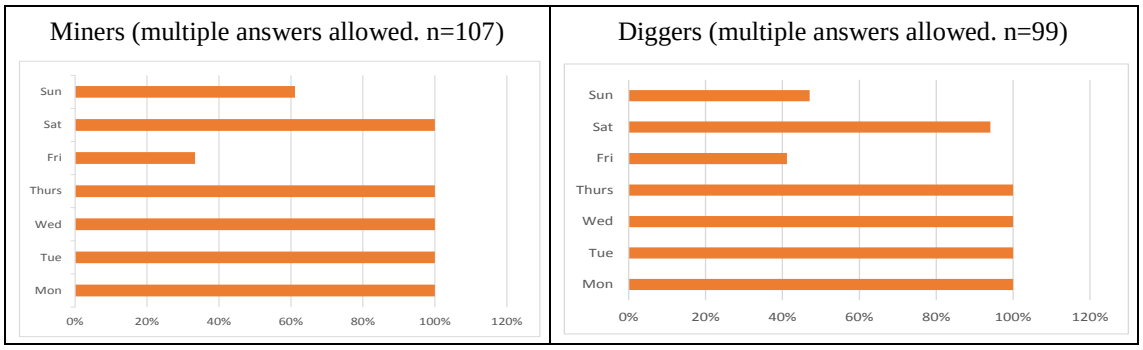
Miners	Diggers
- It brings fast money. - Because all the land my family acquired is through mining. - Started from age 4 therefore developed interest. - To help myself, God gives me the idea to mine diamonds. - First started buying gold, I was later encouraged by a friend to get involved with mining diamonds.	- Just to make a living. - To get experience from the diamond field. - Financial difficulty. - To get daily bread. - Poverty - Because I had no money, miner gave me a shovel.

- Source of income for generations. - I want to develop my country. - To get money and send kids to school. - Instead of sitting here doing nothing, I wanted to earn money. - Because I am a citizen. I wanted to get a claim to support my children. - Because I had land. If I don't mine, other people will mine my land. - I am a mining chairman, and can't maintain my position unless I own a mining claim. - Because I want more money. - Because mining can make people rich overnight. - I saw my mother in it, so I grew interest. - Mining is important to me, it is what I feel I can live by. - To help myself survive.	- To get my own. - To look after myself. - I wanted money to support my children. I studied and passed driving school but license expired. - To go to school. - To get money. Citizens can mine. - Hard times - Only diamond work I believe can prosper me. - I am a yellow machine operator, but don't have a job right now, so I am digging diamonds. - It is the simplest way to get money. - No other work to do. - Friends influence.

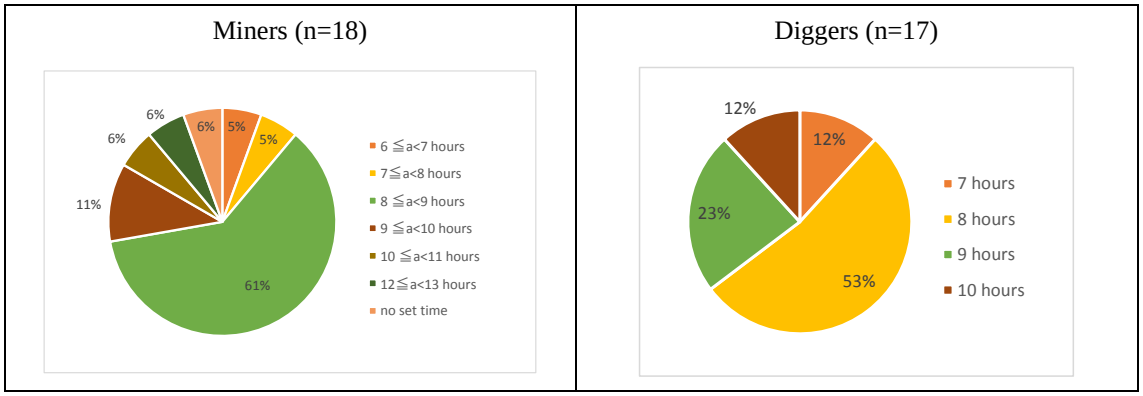
2-4. Labor

The work-week for the miners and diggers interviewed is Mondays to Thursdays and Saturday. This is largely because Muslims rest on Fridays and Christians rest on Sundays. The team observed that Christian diggers do not work on Fridays in Muslim-dominated mining claims. The majority of miners and diggers work eight hours per day, usually starting at 8am and finishing at 4pm.

The Work Week

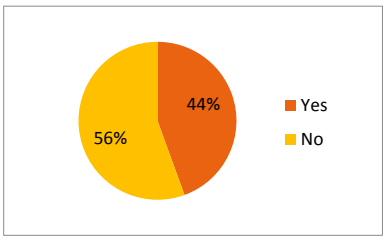


Number of Work Hours



44% of miner-respondents labored and dug diamonds alongside a group of hired diggers, while 56% operate the mining activity by managing a hired team of diggers.

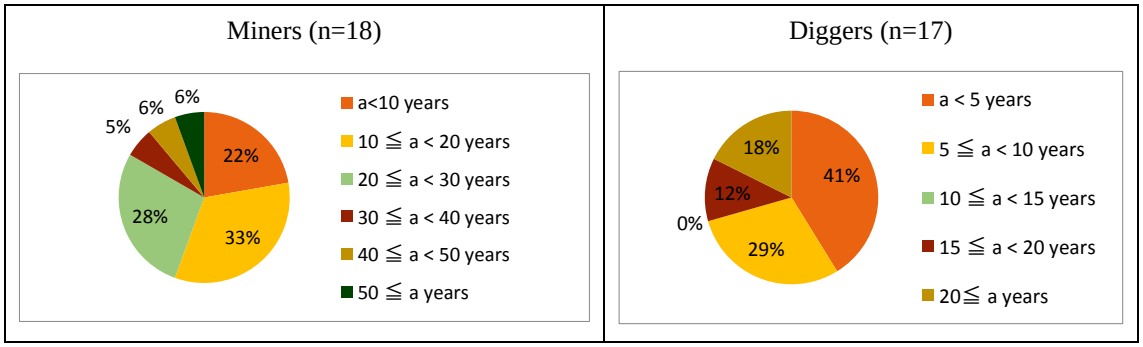
Do you mine diamonds yourself? (n=18)



2-5. Mining Experience

Miners have more years of experience in artisanal diamond mining than diggers. 22% of miners interviewed have less than 10 years of experience and 78% of them have more than 10 years of experience. On the other hand, 70% of diggers have less than 10 years of experience and 30% of them have more than 10 years of experience. These figures may be attributed to the fact, that some miners started the artisanal diamond mining activities as diggers, and only once they earned enough money, they were able to obtain a Class C diamond mining license.

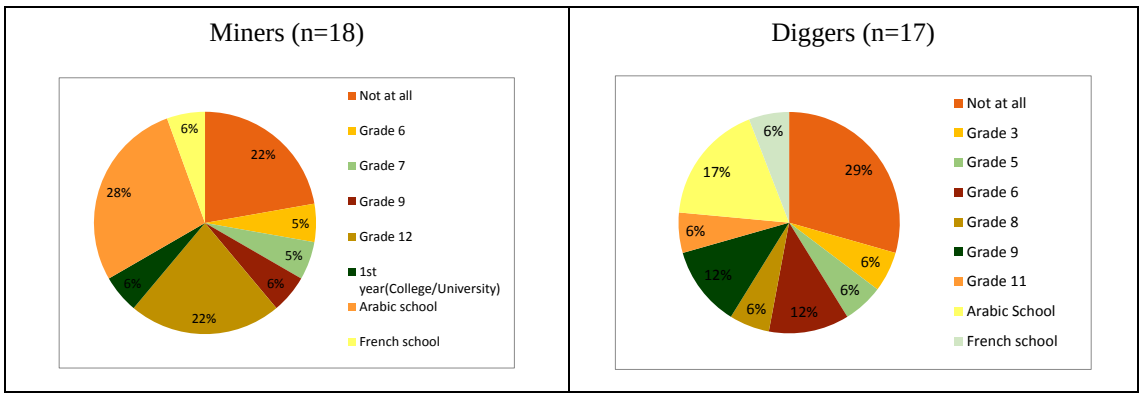
Number of Years S/he Has Mined Diamonds



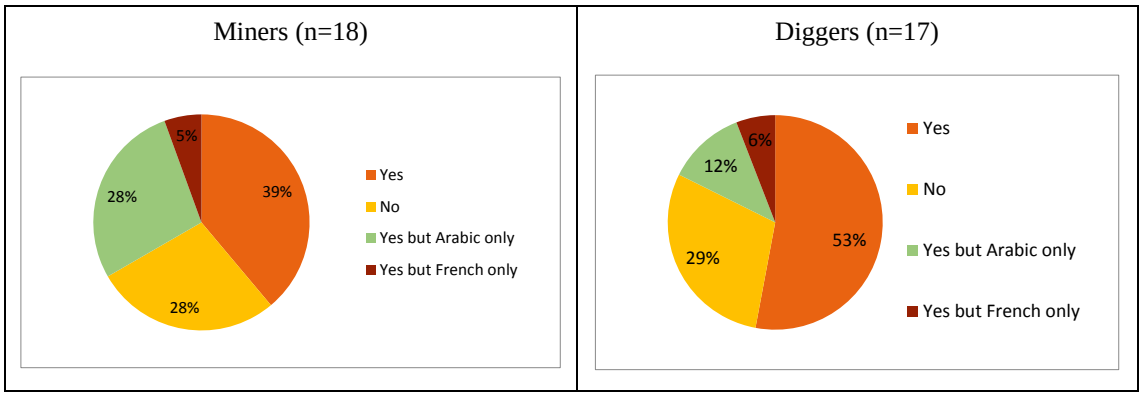
2-6. Literacy

Although all miners and diggers interviewed spoke English, literacy in English is very limited among them. In fact, 22% of miners and 29% of diggers interviewed never attended school. 28% of miners and 17% of diggers attended an Arabic school which means that they are unable to read or write in English. Only 39% of miners and 53% of diggers are able to read English. 67% of miners (12 miners) and 76% of diggers (13 diggers) are able to write in English. Out of those who are able to write in English, 6 miners and 3 diggers responded that they were able to write English without a problem.

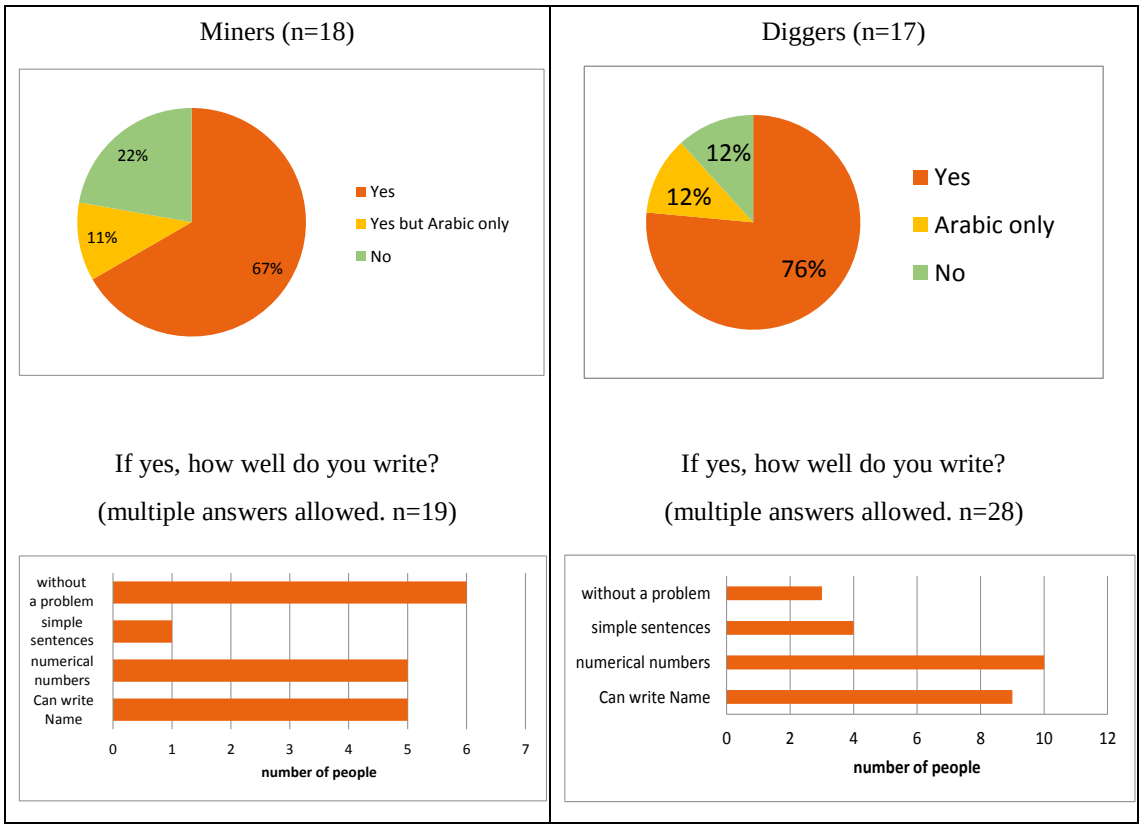
Educational Attainment



Do you read?



Do you write?

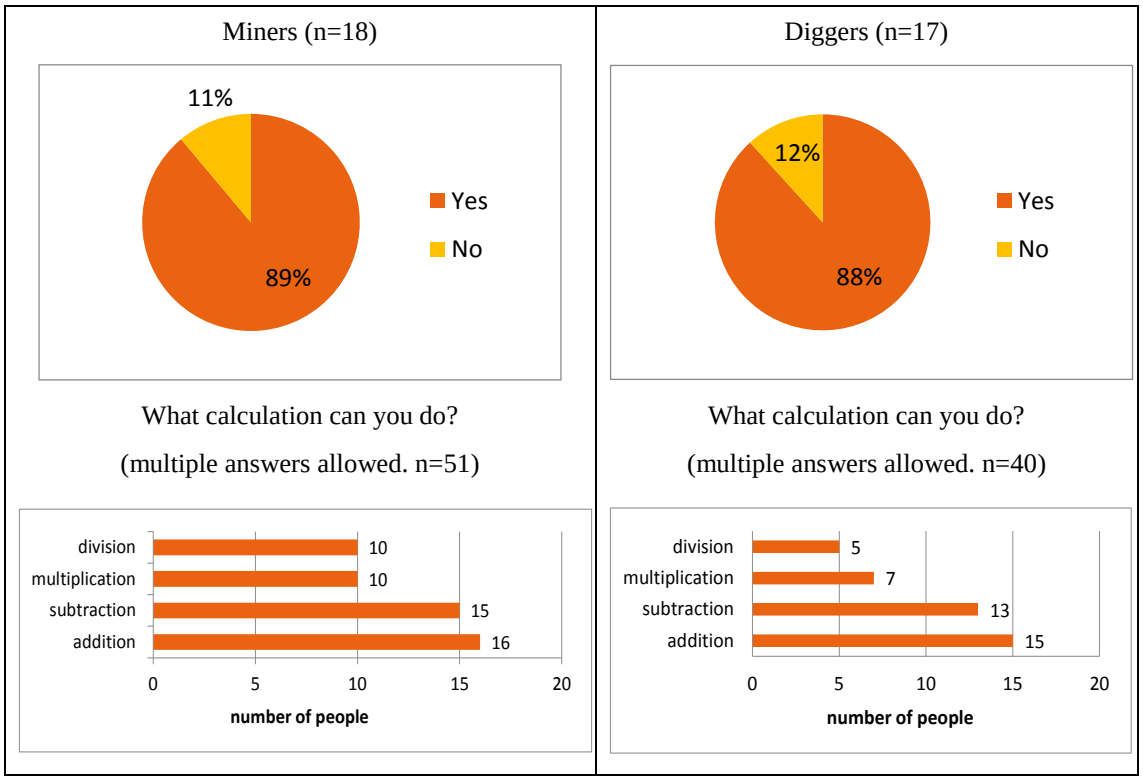


2-7. Numeracy

89% of miners (n=16) and 88% of diggers (n=15) interviewed had basic numeracy skills. Most of the interviewees are capable of doing basic math.

However, some miners and diggers do not have basic numeracy skills. For these miners, it is particularly challenging to negotiate a fair price and to get a fair share of the profits. The majority of miners lacking numeracy skills were women. Their husbands are also miners who manage the mining operation on their behalf.

Do you calculate?

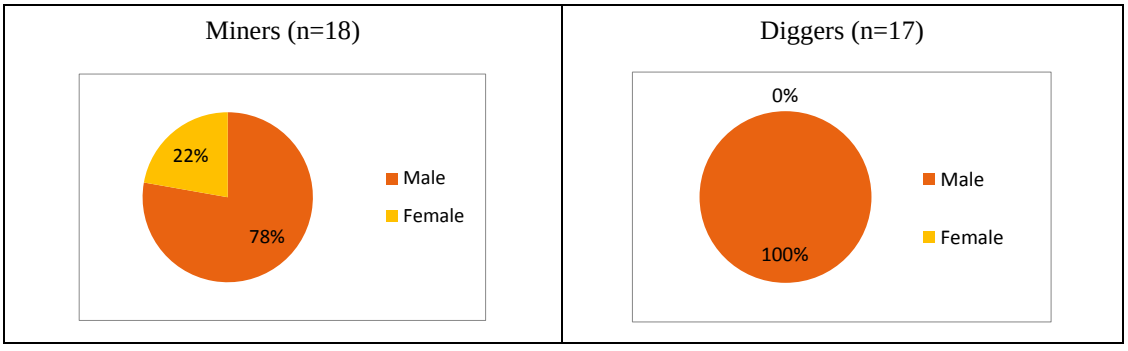


2-8. Gender

Diamond mining is considered to be men's work in the DMCs that the team visited according to the interviewees and local mining authorities. 100% of diggers that the team interviewed were males. Although there are some female miners, this is largely in support of their husbands' expanding business interests, as the number of licenses that one individual can obtain is limited to four.

The team also came across cases where foreign men come to Liberia to marry local Liberian women in order to obtain mining licenses. In these cases, the husbands are the ones in charge of running the mining activities. The wives who own the mining licenses do not play any role in managing the claim. Almost all the female miners interviewed by the team are illiterate, which may be a contributing factor for entrusting their husbands to manage the mining operation.

Miner and Digger Respondents by Gender



Some diamond mining claims do not allow women to come into contact with the land as they believe that

it would have a negative impact on the diamond yield. According to some miners, a woman entering the mining claim is considered as "Zina," unlawful sexual intercourse, which angers God and causes his wrath to decrease the amount of diamonds in the claim. According to the men in those areas, even female miners cannot enter their own mining claims.

The team did not deeply look at roles of men and women and how they make rational decisions in the artisanal diamond mining in this survey. Therefore, the team would like to suggest DFP to look into this issue through a more in depth analysis in the future.

2-9. Mining: A form of gambling

Artisanal diamond mining is inherently similar to gambling. The lack of adequate exploration and thorough land surveillance assessments, insufficient technical know-how of efficient mining techniques, as well as restrictions disallowing the use of heavy duty equipment under the Class C mining license, contribute to luck being a great determinant of results. Making it difficult to assess and forecast where, when and how many diamonds will be recovered. In fact, some miners and diggers interviewed reported that they had not found any diamonds during the past year.

Miners and diggers continue mining, hoping that they will get what they refer to as "lucky tickets," roughly translated as a "lucky break," which can in fact, either mean winning the lottery, or as used in this case, finding a diamond. Another reason cited for continuing is the possibility of "fast money." The individual hustle for survival requires great effort propelled by a faithful belief in the randomness of the lucky break, and the high-adrenaline rush from the seldom win of finding a diamond.

If people get used to, and depend on a lottery-type "lucky ticket and fast money" system, it may be difficult for them to make consistent daily efforts towards endeavors which may not, at least aspirationally, yield such a high level of income.

Moreover, financial management and long-term planning are not inherent values when living in such precarious subsistence-level circumstances. As such, when finding a diamond, some diggers excitedly spend all the money from its sale, without a view to the longer-term future. In fact, one digger told the team that when he received USD2,000 from the sale of a sizeable diamond, he partied with his friends, drank every night and gave away his earnings to friends. In the end, his full earnings were spent in just two months.

Economic Reality of Artisanal Diamond Mining

2-10. Profit-sharing

Miners do not usually provide daily wages to diggers, except under special arrangements. In a mining claim with a large number of diggers, they are divided into groups, each usually consisting of four to six diggers. Only members of the group that finds a diamond receives a share from the sale.

The customary profit-sharing arrangement dictates that a miner take 50% of the profits from the sale and

that the group of diggers take the other 50%, divided equally among group members. In some DMCs, diggers are also responsible for paying 10% of his individual share to the cook who prepares the group's meals, and another 10% for the engine oil and gasoline used to run the water pump.

Some miners erroneously believe that providing two meals a day and sharing the profits this way are government regulations.

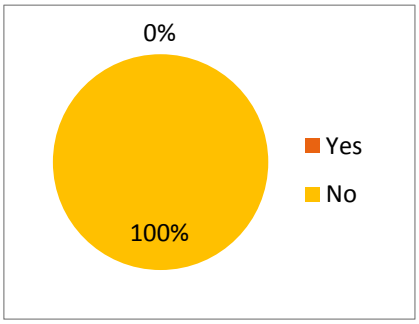
2-11. Income

i) Annual income

39% of miners earn less than USD1,000 and 44% earn between USD1,000 and USD5,000 annually. Very few miners earn more than USD10,000. This is a very low amount considering that miners need to renew their licenses on an annual basis and to keep the mining activities operational. Miners' median annual income is equivalent to USD1,044 which averages out to less than USD100 per month, resulting in their heavy dependency on supporters and brokers to provide for their operational expenses, such as meals for diggers, tools (i.e. shovels and jigs), and small machines like the water pump.

Diggers earn even less. 6% of diggers claimed that they did not earn anything over the past year. This is largely attributed to the fact that employers do not pay diggers a daily wage but only after a diamond is found and sold. Digger's annual median income is equivalent to USD300 which translates to an average of USD25 per month. With this amount, it is very difficult to sustain themselves and their family members, given that 65% of diggers support five family members or more, and 41% support non-family members as well. The average family size is five, and the median is 6.

Do diggers receive a daily wage?

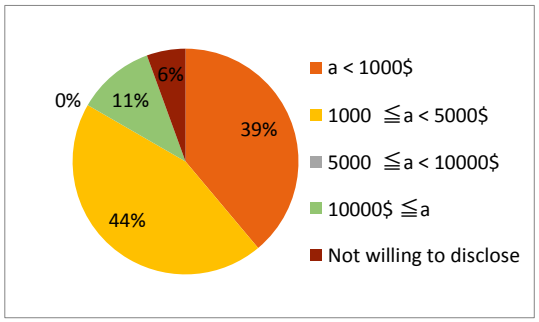


Annual Income (USD)

Miners (n=18)

Median: $1,044

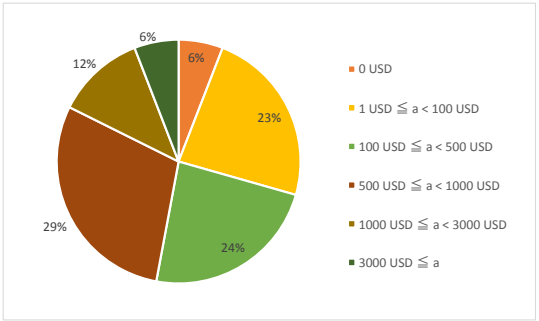
Average: $3,414



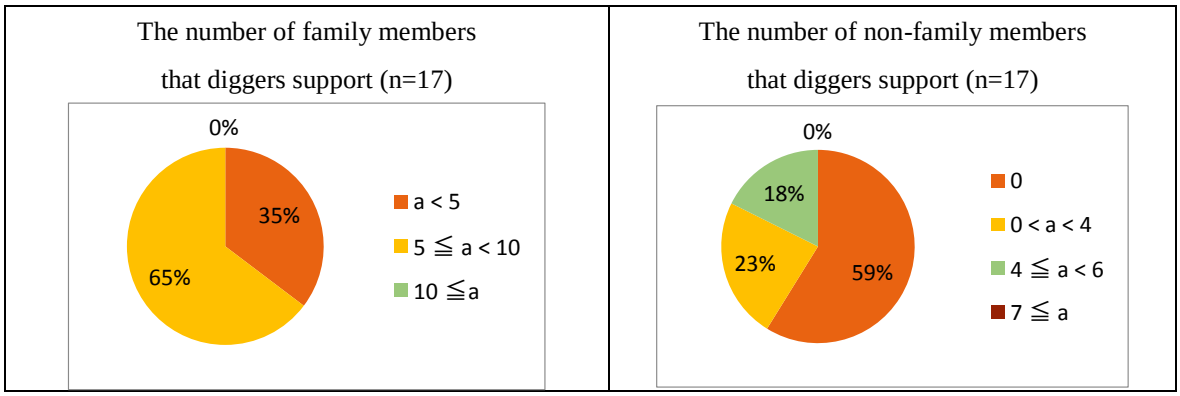
Diggers (n=17)

Median: $300

Average: $627



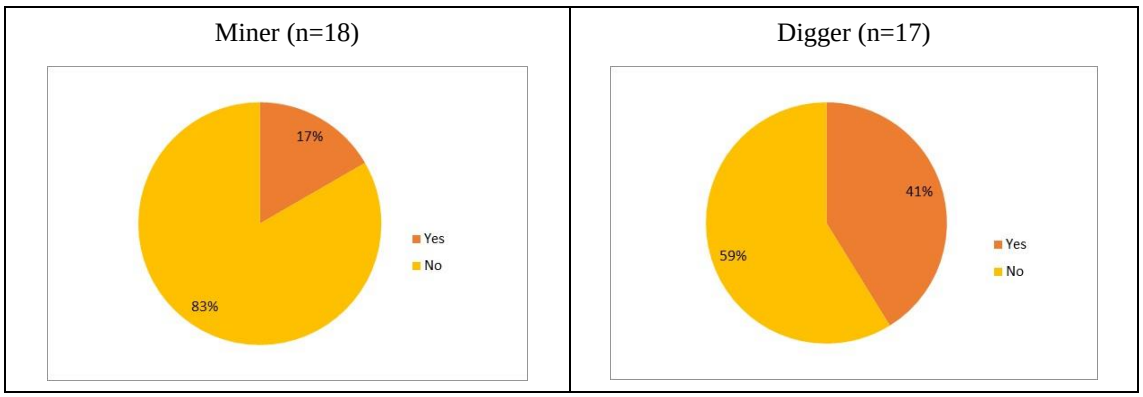
The Number of People Diggers Support



ii) Additional income-generating activities

Mining diamonds alone does not sustain a miner/digger and his family in many DMCs. 83% of miners and 59% of diggers responded that they held additional jobs especially during the rainy season when mining is difficult. Popular side jobs for miners are farming and selling daily commodities. Those for diggers are day labor jobs, and farming.

Is mining diamonds your only source of income?



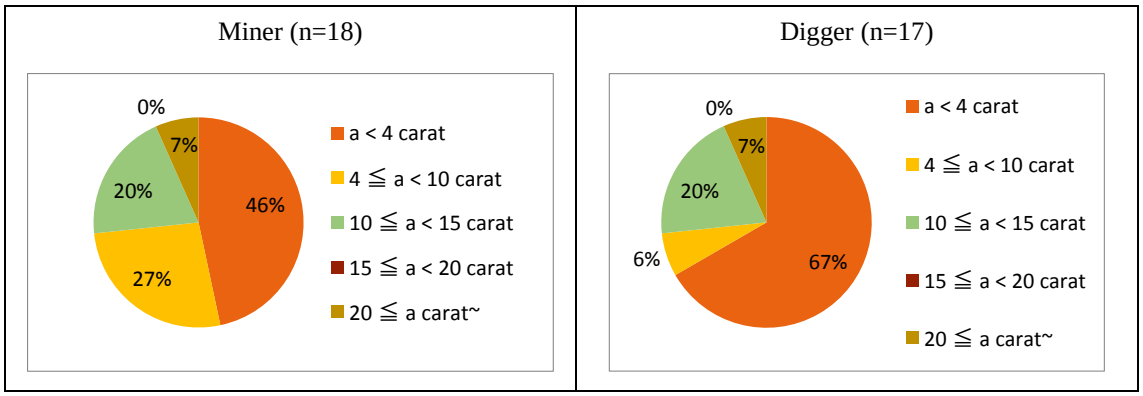
iii) The volume and value of diamonds recovered

The below graphs show both the volume and value of diamonds that respondents, including miners and diggers, said they had recovered over the past year. The majority were less than 10 carats. Regarding the value, miners tended to provide a higher value than the diggers.

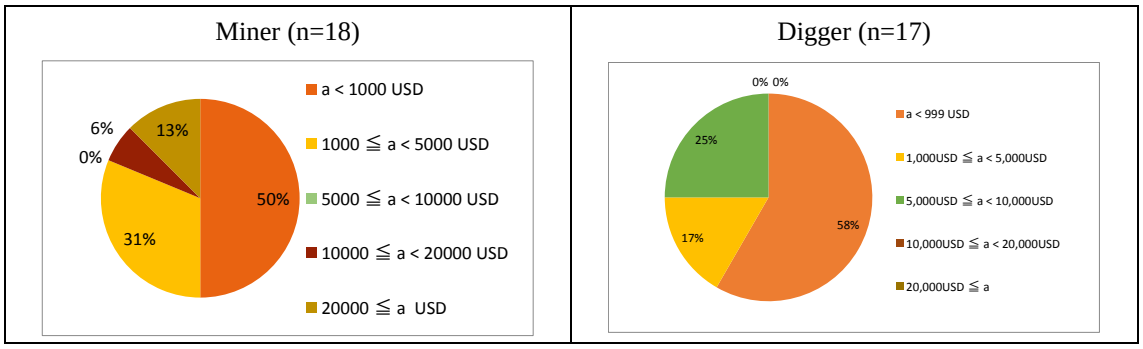
The reasons for the value discrepancy can be attributed to the following:

- Miners tell diggers a lesser value (lower than actual sales price); or
- Miners recover more from multiple mining sites and diggers recover only from the single mining site where they work.

The Volume of Diamonds Recovered Over the Past Year



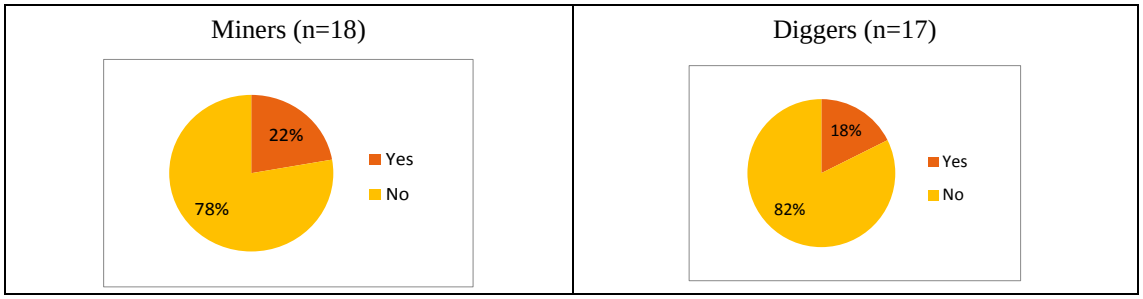
The Value of Diamonds Recovered Over the Past Year



iv) Savings

Only 22% of miners and 18% of diggers interviewed had savings. While a substantial majority, including 78% of miners and 82% of diggers did not have any savings. Given the level of income, volume and value of diamonds that they recover, it is understandable that the majority do not have any savings.

Do you have savings?



2-12. Expenditures

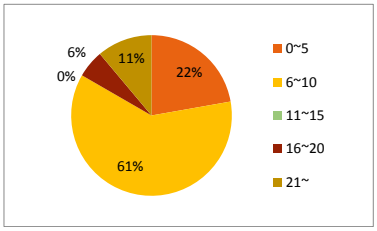
i) Expenses related to mining activities

22% of miners lead small teams of five diggers or less, 61% manage teams composed of six to ten diggers, 6% have large teams of 16 to 20 diggers, and 11% lead large teams composed of 21 or more. The average number of diggers working for a miner is equivalent to 9.6 and the median is 8. As mentioned earlier, diggers are not paid on a daily basis, but only upon a diamond sale. As such one of the largest expenses comes from feeding the diggers. Most miners (94%) provided two meals to their teams of diggers. 17% of miners estimated their total expenses per month to be less than USD100, 55% estimated them to be

between USD100 and USD300, 17% calculated them to be between USD300 and USD500, and the remaining 11% estimated them to exceed USD500. 58% of miners interviewed pay these expenses themselves and 42% depend on their supporters.

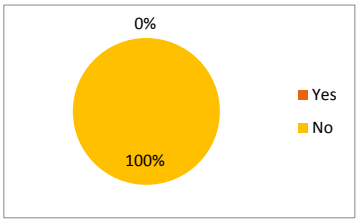
The number of diggers that miners have

Average: 9.6, Median: 8 (n=18)



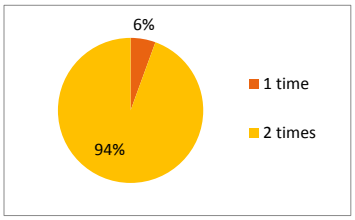
Do you pay to a digger per day?

(n=18)



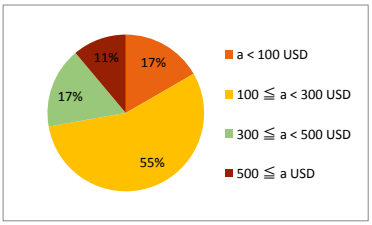
The number of times

miners feed diggers per day (n=18)



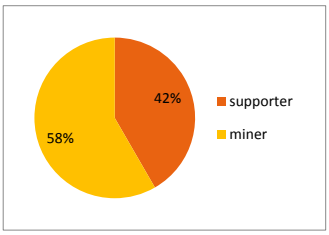
Total expenses for mining per month

(n=18)



Person who pays the mining expenses

(n=18)



The essential expenses for operationalizing an artisanal diamond mining claim include: meals for diggers (rice, soup), tools (shovels, and jigs), engine oil and gasoline for a water pump. The team calculated the running cost of a typical mining claim with 8 diggers per month based on local prices, as shown below.

[Total Cost: LD 48,685= USD463.67[6] per month]

✓ Food

Subtotal LD33,280 per month

- Rice: LD30/cup x 2 times x 8 diggers x 26 days= LD12,480
- Soup can: LD50 x 2 times x 8 diggers x 26 days= LD20,800

✓ Tools (to be replaced every other month)

Subtotal LD9,880 / 2 months =LD4,940 per month

- Shovel: LD735 x 8 diggers=LD5,880
- Jig: LD500 x 8 diggers=LD4,000

✓ Oil and Fuel for a water pump

Subtotal LD10,465 per month

- Engine oil (it needs to be changed every four days): LD250/quart x 6.5 times=LD1,625
- Gasoline (half gallon to two gallons per day: average one gallon per day):

  LD340 x 26 days=LD8,840

[6] As of March 30th 2017, the exchange rate of LD to USD is LD105=USD1 according to the Central Bank of Liberia. https://www.cbl.org.lr/ accessed on March 30th 2017

ii) Expenditures to support a family

Expenditures related to supporting a family varies, very much depending on the household. In this report, the team summarized the typical expenses most likely incurred by a Liberian family, based on prices in the local markets at the time of the field work.

Typical Cost to Support a Family (LD: Liberian Dollar)

	Food	Healthcare	Entertainment (alcohol, cigarettes, etc.)	Transportation	Miscellaneous (good will, sacrifice etc.)
Monthly Cost	LD1,520 /person	LD854 /household	LD1,009 /household	LD0-4,000	-
Annual Cost	LD18,240 /person	LD10,248 /household	LD12,108 /household	LD0-48,000	LD0-20,000

Source: Interviews with locals

Annual School Fees Including Uniform and Books (LD: Liberian Dollar)

	Nursery	Primary School	Junior High School	High School
Government	-	Up to LD3,800	Up to LD6,000	Up to LD10,000
Private	Up to LD35,000	Up to LD15,050	Up to LD20,000	Up to LD40,000

Source: Interviews with locals

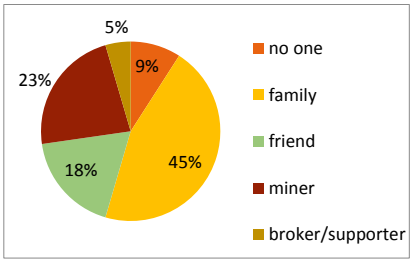
iii) Financial support for diggers

It is not easy, especially for diggers to sustain themselves, when comparing their actual income to the required basic expenditures. The team asked diggers to whom they turn to when in need of financial support; and who actually provides them with financial support.

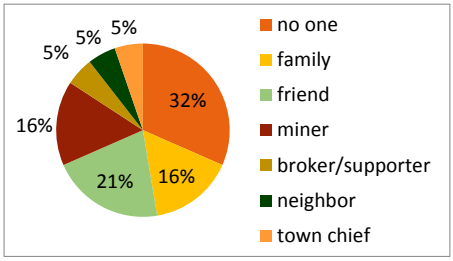
In answer to the former question: 9% ask no one, 45% seek support from their families, 18% ask friends, 23% request a loan from the miners for whom they work, and 5% ask their broker/supporters for financial support. On the other hand, in terms of financial support received: 32% answered that no one lent them money, 16% received support from their families, 21% from friends, 16% from the miners they worked for, 5% from their brokers/supporters, 5% from neighbors, and the remaining 5% from town chiefs.

People whom diggers ask for financial help

Who do you ask for financial help? (n=17)



Who lends you money? (n=17)



2-13. Price of diamonds

One of the biggest challenges miners think they face is that they cannot sell diamonds at a fair price. The team considers the following factors to be contributing to this issue:

i) Lack of adequate tools and technical knowledge to ascertain the precise market-value of diamonds: Miners complained that it is difficult to ascertain the precise value of diamonds. When a buyer says to a miner "the color or the clarity of this diamond is not good," he does not have the adequate tools to counter-argue and prove differently. Also, market values are not easily accessible due to the lack of internet access.

ii) No bargaining power:
For a miner working individually, it is much more challenging to bargain, than if he could leverage the collective power of a cooperative. This lack of bargaining power is further eroded by the fact that he is dependent on a supporter—a broker (buyer) in most cases—to run his mining site and is obliged to sell his diamonds to his supporter (buyer) at whatever price is offered, in order to continue accessing the credit funding to cover the operational costs.

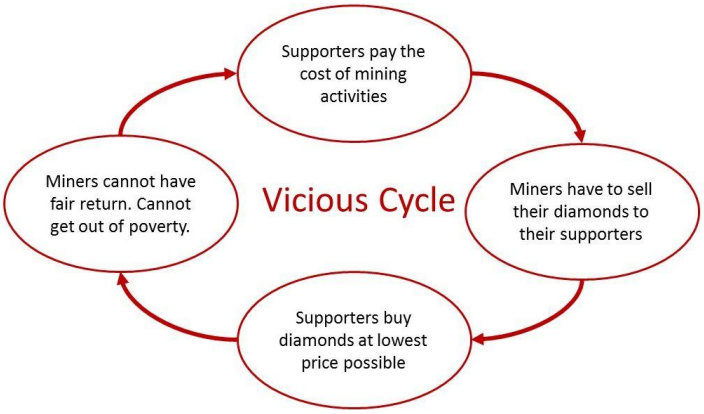
iii) Dependency on supporters:
As explained above, many miners depend on supporters for covering the cost of operationalizing the mining claims. This is provided in exchange for exclusive buying rights to any diamonds found. Supporters buy diamonds at the lowest price possible because they have financed the operation up-front. Given this situation, miners are unable to reap much profit, which creates a vicious cycle of perpetual dependency.

Interestingly, some brokers confessed to not being able to ascertain the precise value of diamonds either. The team had a chance to talk to brokers in one DMC, where they were trying to figure out the value of diamonds. Their usual strategy was to present the price based on their past experience.

2-14. Vicious Cycle of Interdependence with Supporters/Brokers

The majority of miners do not earn a sufficient income to sustain the mining activities on their own mining claims. When they start artisanal mining, they seek help from supporters (brokers) to buy equipment such as shovels and water pumps, and to provide meals to the diggers. In return, miners have to sell their diamonds to their supporters at whatever price the supporters demand, as stated in the previous section. The price is usually substantially lower than market-price, according to miners' statements. Unfortunately, this results in their continuous dependency on supporters and undercuts their chances to get out of poverty.

Vicious cycle of dependency on supporters



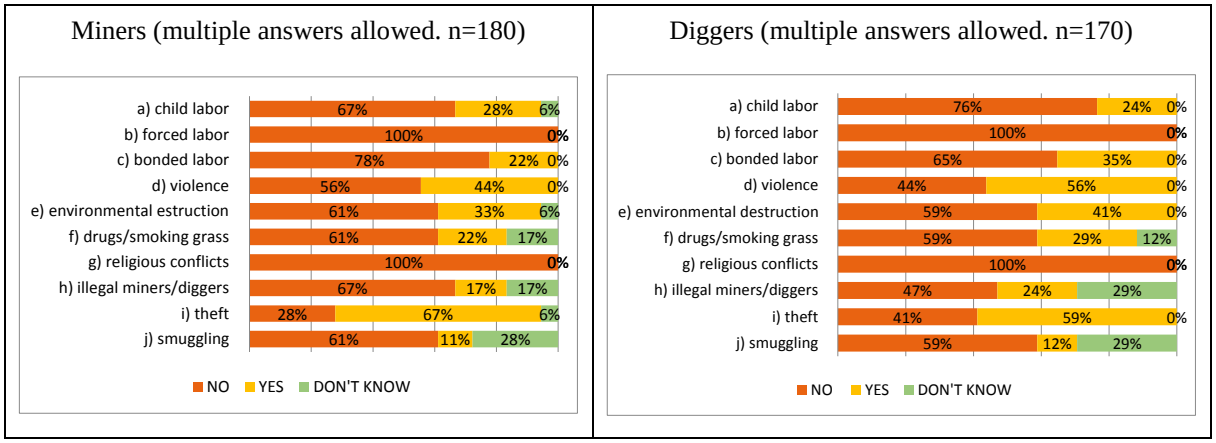
Some miners are trying to break this vicious cycle. One miner said he stopped receiving support from his supporter and runs his mining site with what little resources he has. However, because his funds are limited, his mining activity is operational only on an "on and off" basis. In one DMC, the miners sold their diamonds to brokers who were not their supporters, seeking better prices. After this, the supporters left the DMC realizing that the miners broke the tacit exclusive sales-rights agreement. However, miners complain that the price is still not fair and falls substantially below market price. It is in effect, very challenging for miners to tell if the price is fair or not without knowing the market-value of diamonds and without access to the right tools to more precisely ascertain their value.

Issues at the Artisanal Diamond Mining Claims

2-15. Issues at the Mines

The below table shows the challenges facing artisanal diamond mines, as reported by miners and diggers. The biggest issues reported are violence and theft.

Issues at Diamond Mines



2-16. The lack of trust among stakeholders

The team found that the stakeholders of artisanal diamond mining do not trust one another. Miners say "supporters cheat us" "diggers are stealing diamonds at the mining claims." On the other hand, diggers say "supporters and miners present low diamond prices to us and exploit us" "if someone in the group I belong

to does something wrong, I cannot be paid even though it has nothing to do with me" "The miner has not paid me saying he lost the diamond I found."

The team presents the possible main reasons for the prevalence of lack of trust among miners and diggers below, based on a number of interviews with stakeholders:

i) Transactions and decision are un-transparent and taken behind closed doors:

When a diamond is found in a mining claim, a digger passes it to a field agent who oversees the activities. The field agent then passes it to the miner, for whom he works. The miner sells it to his supporter (broker) behind closed doors. Either the miner or the supporter announces the agreed sales price to the diggers and they settle the profits. However, diggers, who did not take part in the negotiations, remain skeptical regarding the veracity of the price communicated to them.

The same applies to decision making. Leaders in a DMC make important decisions behind closed doors. The voices of diggers, the most marginalized group of people, are rarely heard during the process. Therefore, diggers remain suspicious, largely because they are excluded.

ii) Lack of record-keeping:

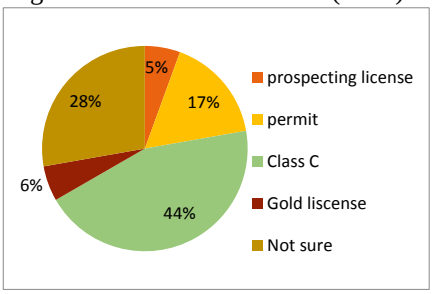
People in the DMCs, where the team conducted the field survey do not keep records of the diamond sale transactions. A receipt of the transaction would help not only to build trust, but also in establishing a more systematic trail of the valuation of diamonds.

Issues in Formalizing the Artisanal Diamond Mining Sector

2-17. Mining Licenses

Miners seem to be confused regarding the licensing process. In principle, they need a Class C diamond mining license, which is only valid for one year, and must be renewed on an annual basis from thereon.

Mining License that Miners Have (n=18)



The team asked miners regarding their licenses. 5% responded that they had a prospecting license, 17% said they had permits, 44% answered that they had a Class C license, 6% possessed a gold license, and 28% said they did not know.

Some miners are well-aware that they need a Class C diamond mining license and that it must be renewed on an annual basis, but complained that they have no funds to do so. Other miners are either not aware or feign ignorance in regards to what kind of license they must have, as well as to its renewal requirements. One miner proudly showed the team his gold mining license, which he obtained many years ago believing it was still valid. Some miners insisted they had permits which the team could not confirm.

There are a large number of miners whose Class C license expired but continue diamond mining. In one of the DMCs surveyed, only four out of thirty-one miners had a valid Class C license.

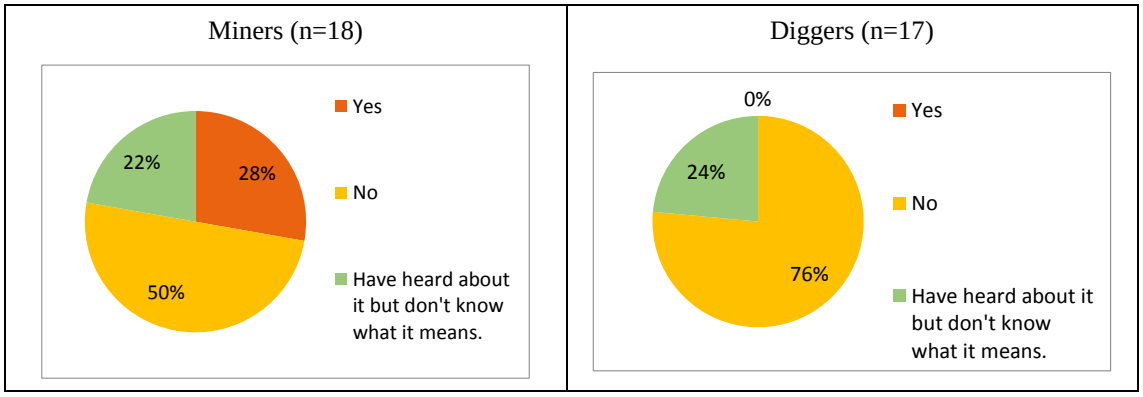
Regarding the cost of a Class C diamond mining license, miners provided different figures. The figures varied from USD150 to USD500, including survey and clearance fees. It seems that some mining agents ask miners to pay extra fees for processing the license themselves.

2-18. Lack of knowledge on the Kimberley Process Certification Scheme (KPCS)

Liberia is a member country of KPCS which tries to prevent the circulation of rough diamonds that help to finance conflicts. It is important that miners and diggers are aware of the risk that their diamonds may fuel a conflict, to which they can relate easily, given Liberia's recent experienced with a devastating civil war (1989-1997).

Only 28% of miners and no diggers interviewed had any knowledge about KPCS. Many people confused it with Kimberlite, the igneous rock containing diamonds.

Do you know KPCS?



2-19. Registration of diamonds with the Government Diamond Office (GDO)

In order for diamonds to circulate within legitimate channels, the Liberian government requires miners to register their diamonds with GDO prior to selling them to brokers. Miners are supposed to take the vouchers issued by GDO when finalizing a diamond sale with brokers, who subsequently take the diamond and corresponding voucher to dealers, so that they can then export the legitimate merchandise with a KPCS certificate.

This system seems not to be working as intended in Liberia for the reasons below:

i) There are only five GDO locations in the western region, which makes accessibility an issue. The distance to the GDO offices is often a barrier to registration, given miners' limited resources.

ii) There are no tangible incentives for miners to register their diamonds with GDO.

iii) GDO officers start off by checking the validity of a miner's current license—
a deterrent for miners without valid licenses.

iv) Anyone can easily sell diamonds to brokers without vouchers issued by GDO.

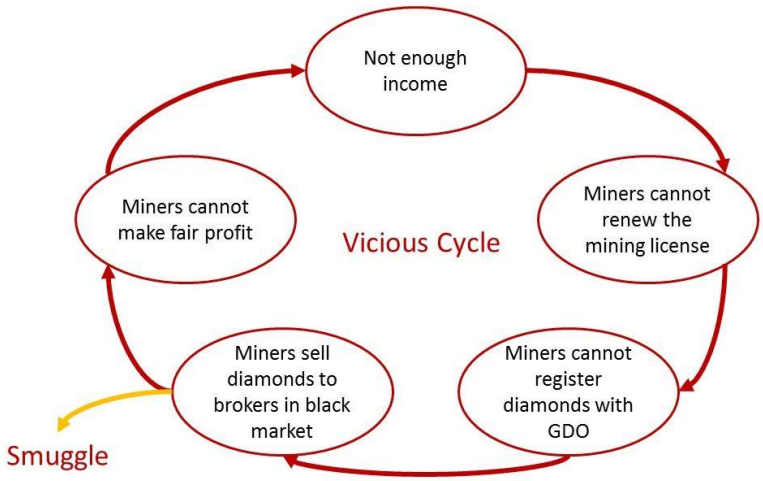
2-20. Supply chain of diamonds

In Liberia, diamonds are usually supposed to go through the following supply chain: *digger – miner – broker(s)/(supporter) – dealer (exporter)*. Miners, brokers and dealers need to be licensed by the government. However, given that miners are often unable to register their diamonds with the Government Diamond Office (GDO), it is reasonable to assume that the majority of diamonds are sold through informal channels or sold to licensed brokers/dealers who buy unregistered diamonds and distribute them through formal channels.

Miners and diggers reported that they could sell diamonds easily to brokers. They were unconcerned regarding brokers' licensed status. The most critical factor for a sale to go through is the price. This shows that the government is unable to control the brokers and dealers who buy diamonds, including unregistered ones, allowing these to come through legal channels.

The team considers that the mining license, registration of diamonds with GDO, and circulation of diamonds in a legitimate market are correlated, as shown in the figure below.

Correlation of license, registration and circulation of diamonds

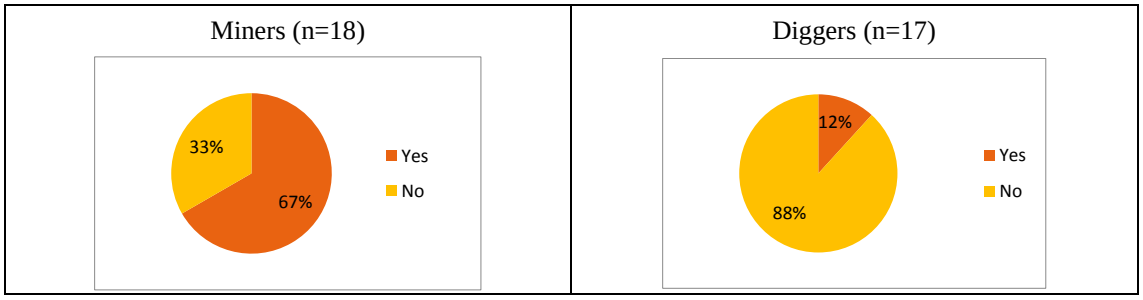


2-21. Cooperatives

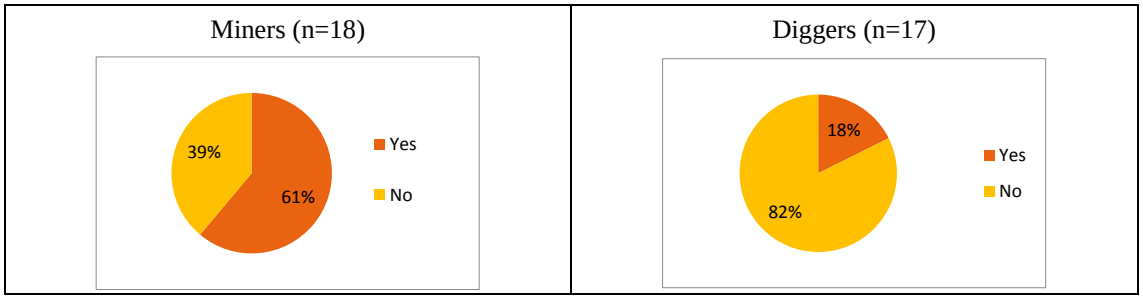
67% of miners interviewed have some idea about what a cooperative is, reflecting the MLME's efforts to hold workshops and raise miners' awareness on the benefits of organizing themselves in this manner. On the other hand, only 12% of diggers demonstrated awareness of the concept. Similarly, the majority of miners are apprised that the government is planning to have miners/diggers organized into cooperatives, but few diggers had been informed of this initiative.

The team explained the concept of cooperative to those who had not heard of it previously, and then asked if they thought it could be beneficial. 82% of miners and 89% of diggers agreed that they found it could be beneficial, 5% of miners and 0% of diggers did not think it beneficial, and 6% of miners and 18% of diggers remained unsure.

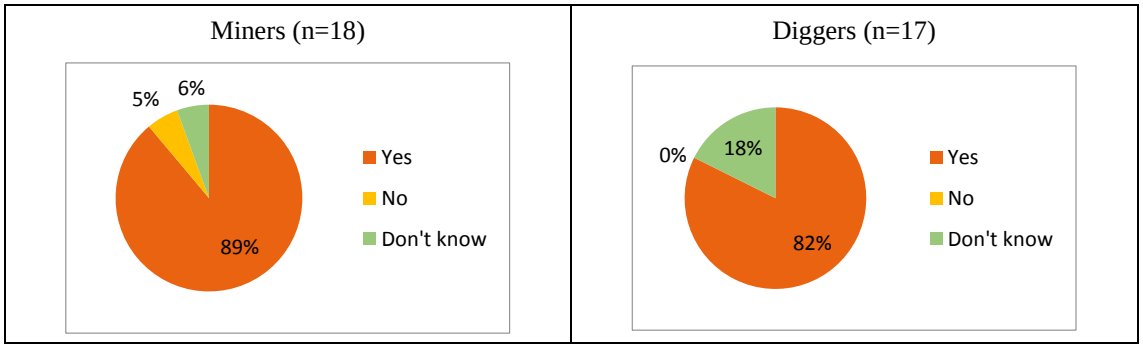
Do you know what a cooperative is?



Have you heard of the government's idea to organize miners/diggers into cooperatives?



Do you think getting miners/diggers organized into cooperatives beneficial?



Voluntary Activities in the Artisanal Diamond Mining Communities

2-22. Good practices

Although there are many challenges, as stated above, the team would like to highlight some good practices they encountered in DMCs.

i) Annual Mining Meeting

The team was fortunate to observe the Suehn Mecca Mining Agency annual meeting in Tubmanburg, Bomi County—organized through people's self-initiative. Each participant, including the mining chairman and patrolman, from all over the County attended and contributed LD1,000 (about USD10), many travelling long hours to participate.

In the meeting, each stakeholder gave remarks, the new regional coordinator made a speech stressing 3Cs, Coordination, Collaboration, and Cooperation, followed by a Q&A session. The content of the meeting included the need to renew licenses and keep them up-to-date, the need to share profits fairly, and that the

mining chairman needs to be represented by a miner.

Suehn Mecca Mining Agency Meeting

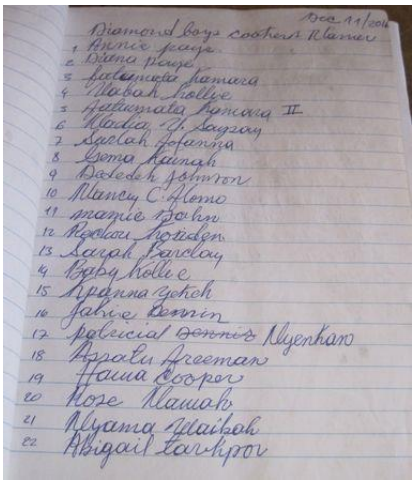
ii) The Diggers' Group

In Bellekpalamu Town, Gbarpolu County, diggers are organized into a group. They elect their group's leadership team including the chairman and secretary, through elections held every two years. The last election was held in December 2016. They keep the membership list and rules in a notebook. The rules are focused on non-violence, including: 1) do not kill, 2) do not rape, and 3) do not fight. They meet every Sunday to discuss issues and challenges that they face. The meeting is open to others, including miners, supporters, brokers, and cooks.

At one of their regular meetings, held while the team was visiting, diggers complained that they had to pay 10% of their profits for engine oil and gasoline to run the water pump in the mining claim where they worked. Diggers claimed that 10% was too high and supporters claimed that they also paid, while miners argued that they, on the other hand, had to pay the cost of license renewal, and thus should not also be responsible for bearing the cost of the oil and gas. After some discussion, they voted to contribute 5%, rather than 10%. After the vote, one miner stood up and said "I will not accept 5% in my mining claim." Diggers also discussed when the new 5% rule would become effective and decided that it would go into effect when a group moves to a new mining field. However, not all miners and supporters were present in the meeting. It is unclear, if in fact, the new 5% rule will go into effect.

In some DMCs in Zalekai Mining Agency in Gbarpolu County, diggers are also organized into groups. However, (as of March 2017) the team did not come across any other diggers' group which holds elections to select its leadership team, organizes regular meetings, and keeps a list of membership and agreed rules.

Diggers' Group Activities in Bellekpalamu

Regular Meeting	Recorded names of diggers
	
Not only diggers but miners, supporters, brokers and cooks also attended the meeting.	

iii) Community Project

There are some community projects organized through community members' own self-initiative. For example, the Bellekpalamu Community is building a school, and its members including miners, contributed some money and materials, while the diggers' group provided the labor, as in-kind support.

In Varguay, Grand Cape Mount County, the community is trying to build a guest house, an initiative launched by the town chief. The project has just started as of November 2016 and the progress has not been made as of February 2017 for a lack of funds.

There is no school in some DMCs. In Gbongor Village, Bomi County, a woman volunteers to teach children at night at a community meeting space. It is also very fortunate that this village has a literate woman who can be a role model for other girls in the village, and support their further education

School-Building Community Project in Bellekpalamu

November 2016	March 2017
	

Photos

2-23. Photos from the Field Survey

Interview with a miner	Explaining the survey to miners and diggers
	
Interview with a digger	Interview with a MLME officer
	
Rough diamonds	Artisanal diamond mining activity
	

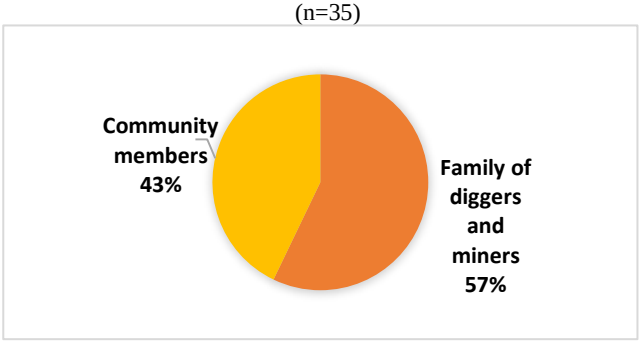
3. Living Conditions of Miners, Diggers and Community Members

In this section, the team would like to detail the living conditions of miners, diggers and other community members including, their health status, access to sanitation facilities, and the effects of artisanal diamond mining on their lives.

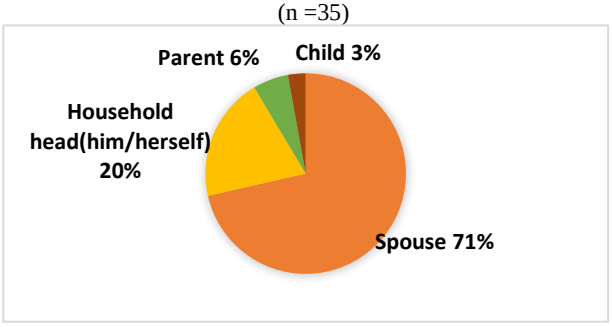
3-1. Characteristics of Interviewees

The survey included a total of 35 respondents from six communities across four counties. Among the 35 respondents, 57% of them were family members of the miners and diggers and 43% were community members randomly selected. Almost three-quarters (71%) were spouses of the household head and 20% of them were the household head themselves. Eighty-nine percent of the interviewees were female and eleven percent were male. In terms of their age—40% were in their 30s, 31% of them were in their 20s and 14 % of them were in their 40s. The ethnicity of the interviewees, is as follows: 29% were Gola, 26% of Kpelle, 26% Other, 9% Mende, and 6% Vai. Sixty percent of them were Christians, while 40% of them were Muslim.

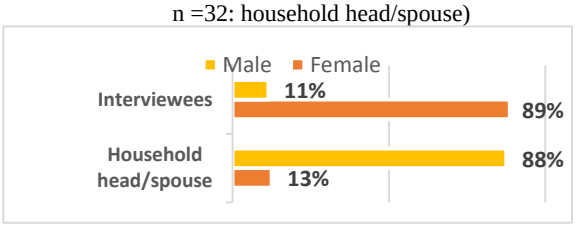
Characteristic of interviewees (n=35)



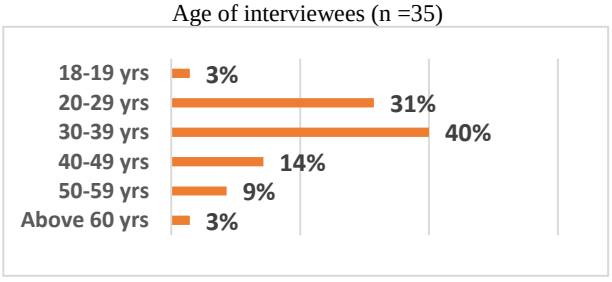
Interviewee's relationship with household head (n =35)



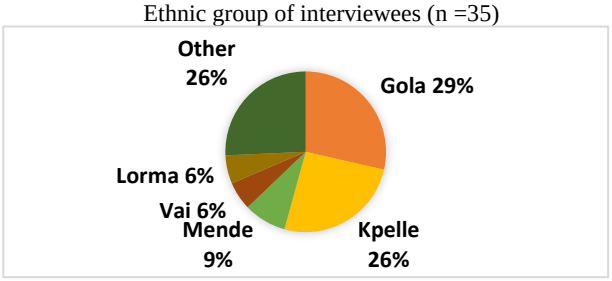
Sex of survey participants (n =35: interviewees, n =32: household head/spouse)



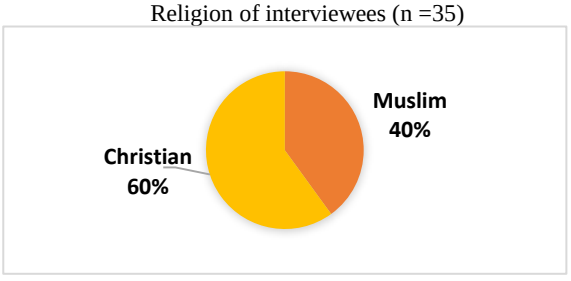
Age of interviewees (n =35)



Ethnic group of interviewees (n =35)



Religion of interviewees (n =35)



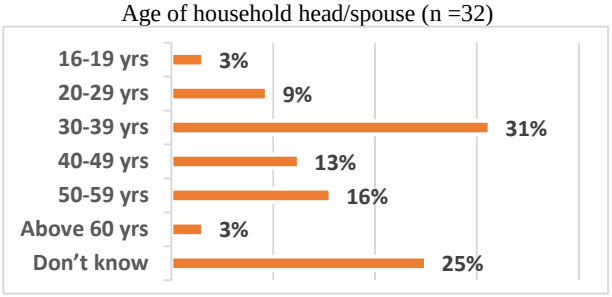
3-2. Characteristics of Interviewee's Family (household head and spouse of interviewees[7])

Eighty-eight percent of interviewees' family members were male and thirteen percent were female. Thirty-

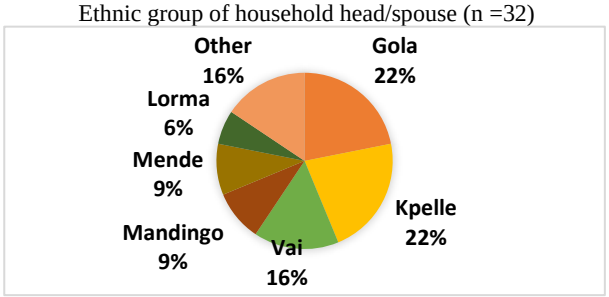
[7] Including a "son" of interviewee.

one percent of them were in their 30s, while 25 percent of them did not know their age. Their ethnic groups were; Gola (22%), Kpelle (22%), Vai (16%), Other (16%), and Mandingo (9%). Fifty-nine percent of them were Muslim and 41% of them were Christian—an inverted proportion to the religious make-up identifying interviewees.

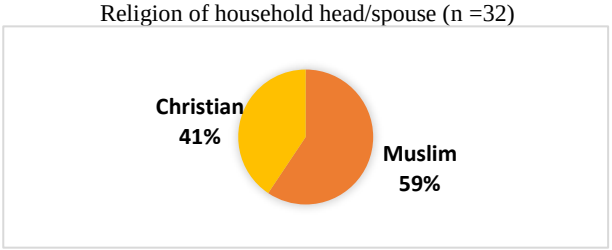
Age of household head/spouse (n =32)



Ethnic group of household head/spouse (n =32)



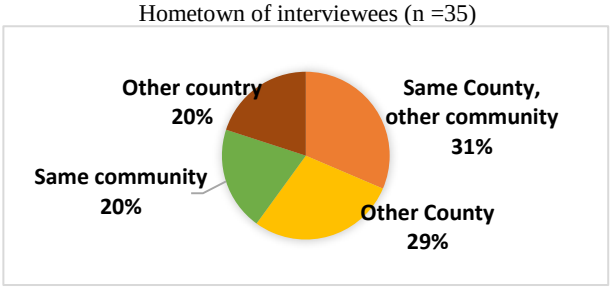
Religion of household head/spouse (n =32)



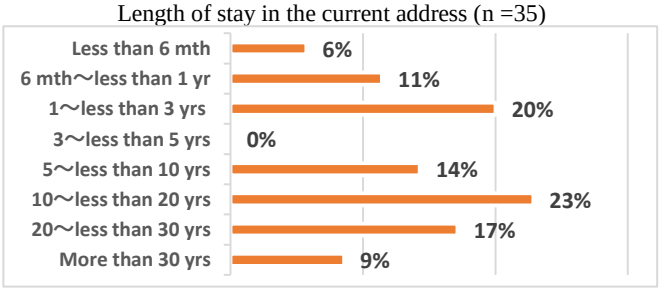
3-3. Migration

About a third (31%) of the interviewees were from other communities in the same County, while another third (29%) were from other counties, twenty percent were natives from the same community, and the remaining 20% were migrants from other countries. In other words, 80 percent of the residents in the mining communities are from other areas. Almost a quarter (23%) of the respondents have lived in their current residence for "over 10 years but less than 20 years" and one-fifth have lived in their current residence for "over one year but less than three years". Thirty-seven percent of them have lived in their current residence for less than three years, while a significant majority (63%) of them have lived there for over five years.

Hometown of interviewees (n =35)

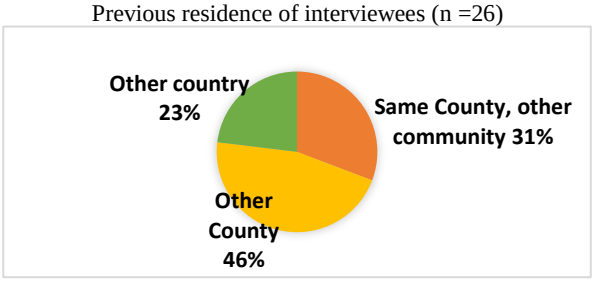


Length of stay in the current address (n =35)

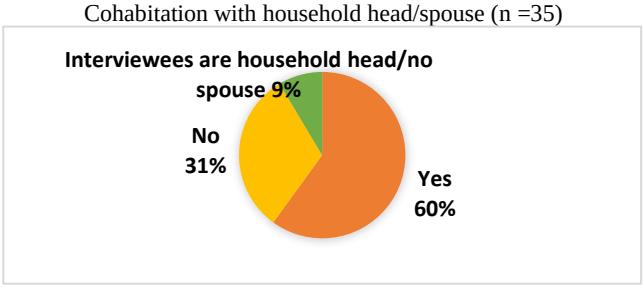


Of those who used to live in other communities, 46% used to live in other counties, while 31% used to live in the same County but other communities. Sixty percent have lived with their household head or spouse all the time, while 31% sometimes live separately due to the migration required by mining and other jobs. Respondents tended to stay in one location for a relatively long time—attributed to the fact that 90 percent of the interviewees were female and the jobs of some household heads or spouses were not related to mining.

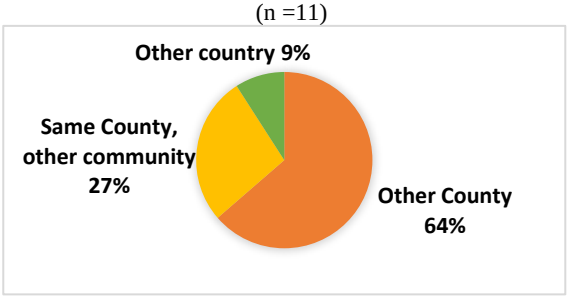
Previous residence of interviewees (n =26)



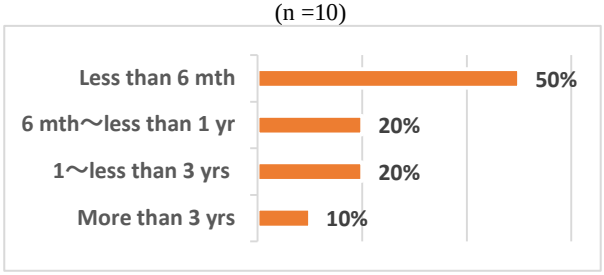
Cohabitation with household head/spouse (n =35)



Residence of household head/spouse
(n =11)



Length of living separately with household head/spouse
(n =10)

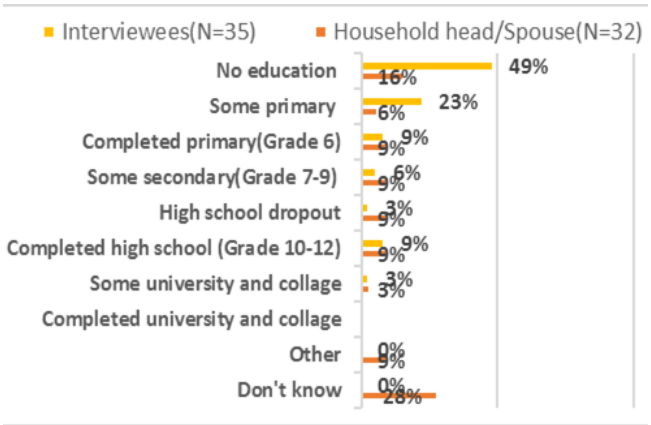


3-4. Educational Background

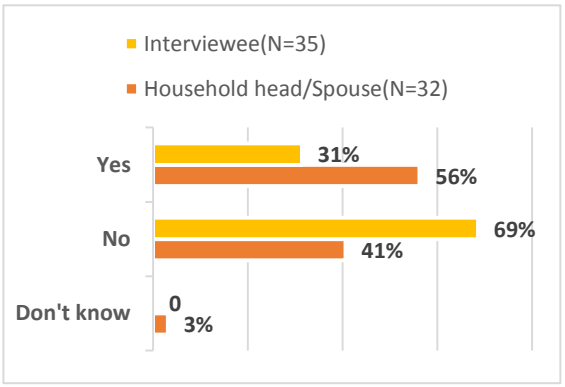
Almost half of the interviewees (49%) do not have any education, while about a fifth (23%) dropped out from primary school. 69% of respondents were not able to read English, half of them were not able to write, and all of the respondents reported that they had the ability to do simple math calculations. Twenty-eight percent did not know the education level of their household head and spouse; 16% did not have any education. Forty-one percent of them did not have the ability to read in English, 28% of them did not have the ability to write in English. Ninety-seven percent of them responded that they had the ability to do simple calculation.

Eighty-nine percent of the interviewees were female, while 88% of household heads or spouses of the interviewees were male. Interviewees and their household head or spouse can be interpreted as “female” and “male”, respectively. These communities had a low level of education overall, but especially in terms of female education attainment. On the other hand, women were engaged in small businesses, selling food and grocery items, therefore they had the ability to do simple calculation. Women would greatly increase efficiency in their businesses by enhancing their English literacy.

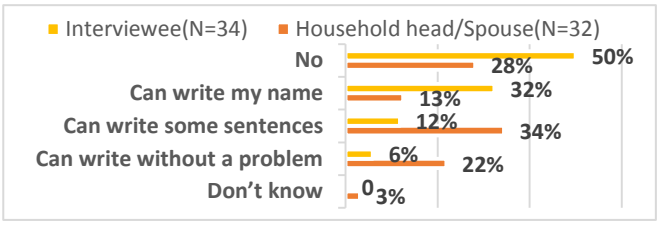
Educational background of survey participants



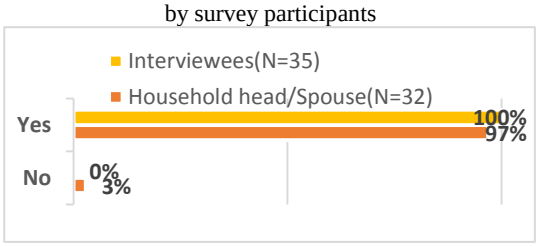
Ability to write English by survey participants



Ability to write English by survey participants



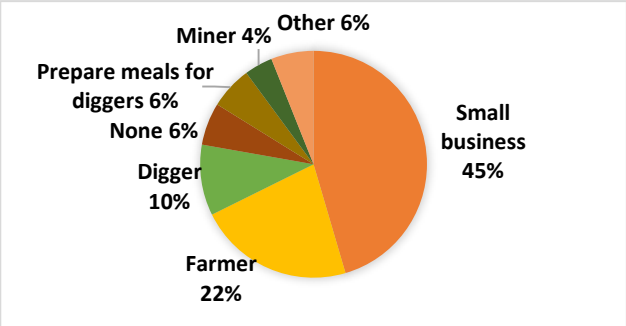
Ability to conduct simple calculations by survey participants



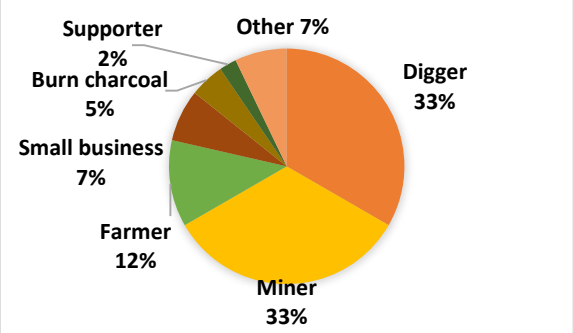
3-5. Occupation

Forty-five percent of the interviewees were running small businesses, such as grocery stores and clothing business, 22% of them engaged in agriculture and 10% of them were diggers. Those who engaged in agriculture tended to sell their crops themselves. On the other hand, 33% of household heads or spouses were miners and diggers, 12% of them were engaged in agriculture, and 7% of them were running small businesses. Some interviewees who were currently running retail stores started their business with the cash their spouse had earned from mining diamonds, ensuring a more stable source of income to support the family. In these communities, most people held a job—anyone in good health, irrespective of gender, was engaged in economic activities of some form. Given that earnings from each business were small and unpredictable, it is very important for households to have different avenues for income generation. Seventy-two percent of interviewees answered that they were satisfied with their spouse' occupations because "it helps to increase income" or "there are no other options". Twenty-four percent of the interviewees were not satisfied with their spouse's occupation, mainly because they did not earn enough to support the household, even as hard as they worked. In these communities, it was difficult to find the additional more stable income-generating sources.

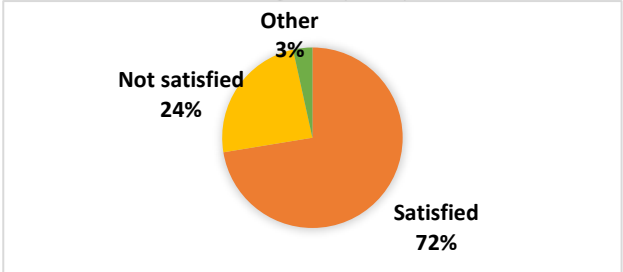
Occupations of Interviewees (Multiple ans. allowed, n =49)



Occupations of household head/spouse (Multiple ans. allowed, n =42)



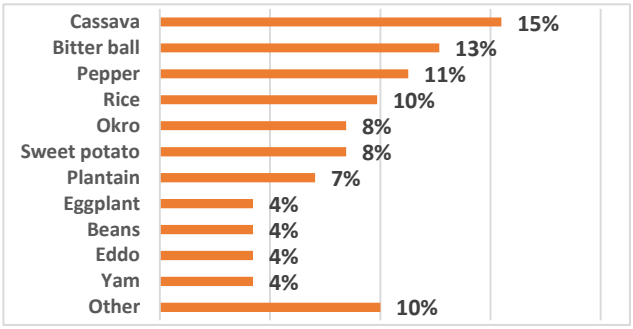
Interviewees' perception towards the occupation of household head/spouse (n =29)



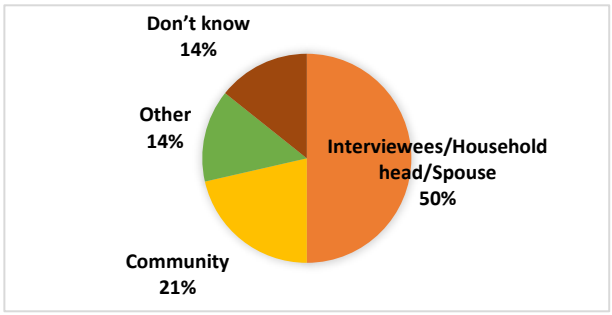
3-6. Agriculture

Fifteen percent of the interviewees who engage in agriculture cultivate cassava, followed by bitter ball (13%), pepper (11%), and rice (10%). Half of them cultivate land of their own (or belonging to their family) and 21% of them cultivate the community's lands. Provided that they are able to pool enough funds for seedlings and the required farming tools, they are able to use the community's land free of charge, after attaining prior permission from the community chief.

Type of crops growing
(Multiple ans. allowed, n =71)



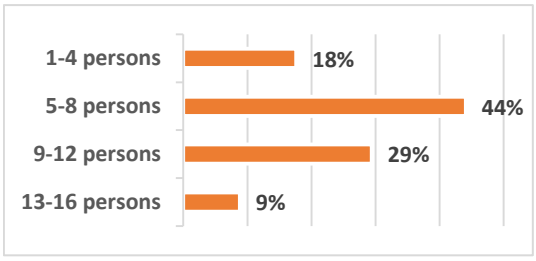
Owner of the farm field
(n =14)



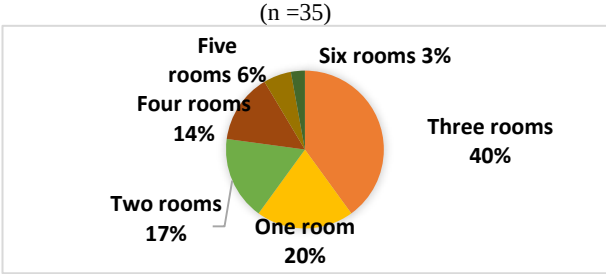
3-7. Size of Household and Meals

Forty-four percent of the respondents' households consisted of 5-8 members, approximately one-third (29%) of them consisted of 9-12 members, nine percent had larger families composed by 13-16 members, and eighteen percent had small family units of 1-4. Even though the size of the household in the community was typically 5-8 members, there were many people whose children had remained in Monrovia, with their relatives or friends, and as such, were also responsible for sending money home regularly. Forty percent of the respondents had three rooms, one-fifth (20%) had only one room, and 17% had two rooms.

Number of people in the household
(n =34)



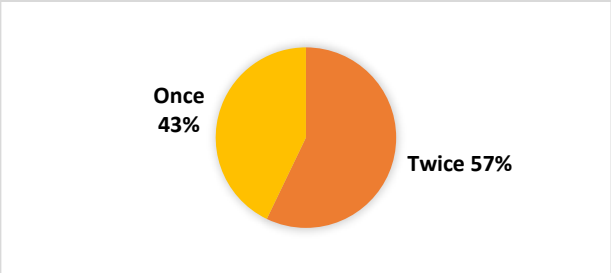
Number of rooms
(n =35)



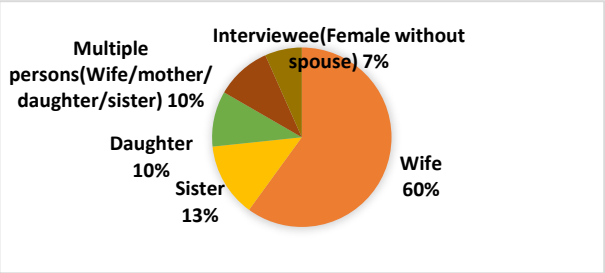
Fifty-seven percent of respondents have meals twice a day, while 43% eat only once on a daily basis. No respondents have three meals a day. Meal-preparation is deemed to be part of a woman's responsibilities and is largely managed by the household head's wife (60%), and on a minority of cases by his sisters (13%), and/or daughters (10%). 94% of the respondents reported rice as their staple food. In addition, people eat cassavas, sweet potatoes, eddos and plantains. People either buy food at the local shops, from their friends or in the market; or they farm it themselves. The majority (65%) walk to get their food, while a quarter use a motorcycle and 10% go by car. Forty-three percent walk only 10 minutes or less to get their food, about a third (31%) spend an hour or less, and the rest spend more than one hour, as detailed in the below

graph.

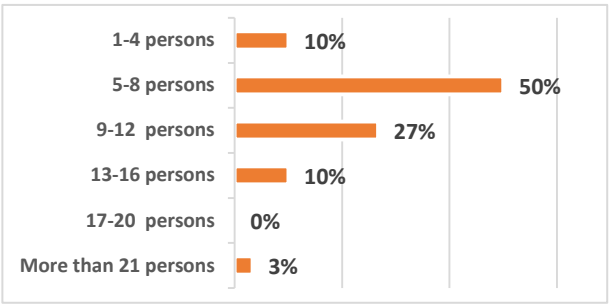
Number of meals per day (n =35)



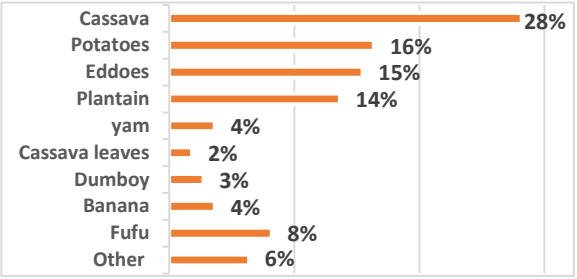
Persons who prepare meals
(Relationship with household head) (n =30)



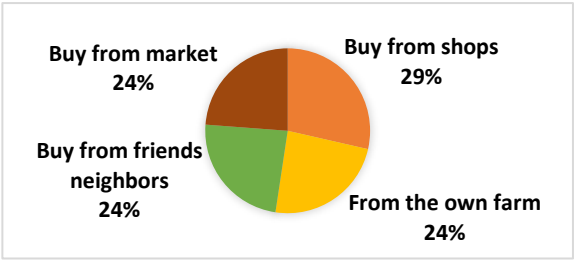
Number of dishes to prepare for a meal (n =30)



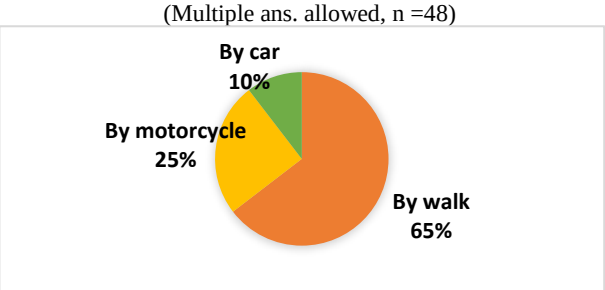
Other foods to eat frequently
(Multiple ans. allowed, n =110)



Place to get foods (Multiple ans. allowed, n =63)



Means of transportation to get foods
(Multiple ans. allowed, n =48)



Times to get foods (n =35)

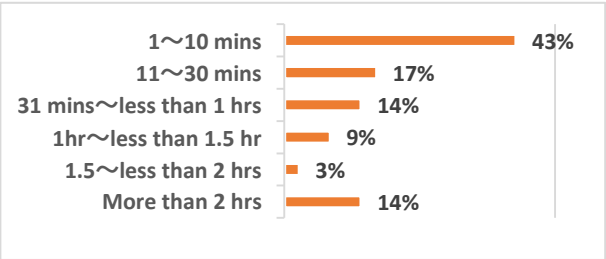


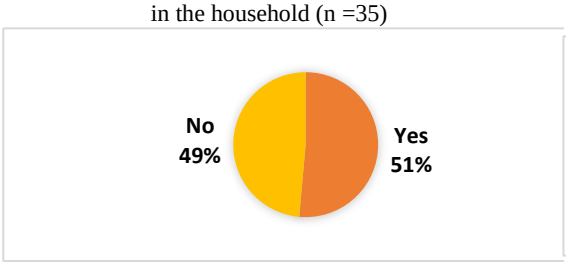
Photo: A miner's daughter prepares meal.

Photo: A bedroom with mosquito net to prevent malaria.

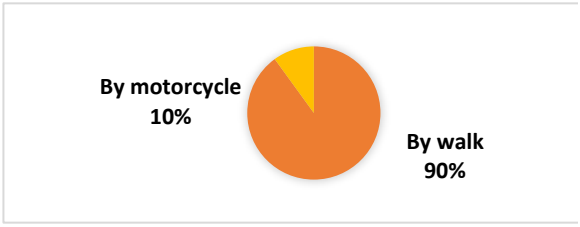
3-8. Education for Children

Fifty-one percent of the respondents had school-aged children in their household. Ninety percent of the children walked to school and it was within a 10 minute-walk for the majority (78%) of them. It was assumed that the children in respondents' households went to mainly to either a kindergarten or a primary school. As there was no secondary school near the communities, therefore secondary-school-age children are placed with relatives or friends in Monrovia or nearby cities. Some children were forced to drop out because of affordability issues. Out of six communities where the survey was conducted, two of them lacked a primary school. In Bongo community in Bomi County, a female volunteer who lived in the community provided free 2-hour nightly lessons for children who could not afford to go to school.

Existence of a child/children who go to school in the household (n =35)



Means of transportation to go to school (n =20)



Time to go to school (n =18)

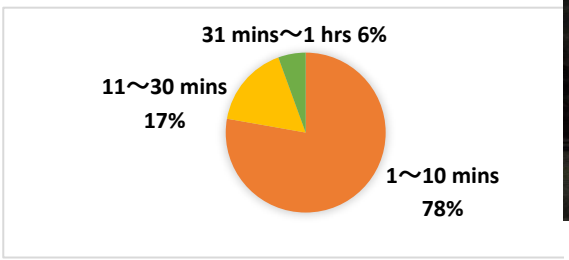
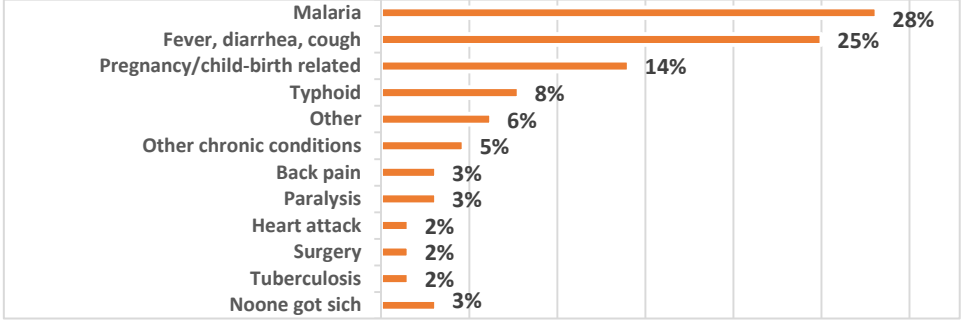


Photo: A night school by a volunteer

3-9. Health

When asked about the family's medical history over the past 12 months, 28% of the respondents had experienced a family member's suffering from malaria and 25% of them had experienced a family member's bout of fever and/or diarrhea. Fourteen percent of them had experienced pregnancy, childbirth, and miscarriage within the family.

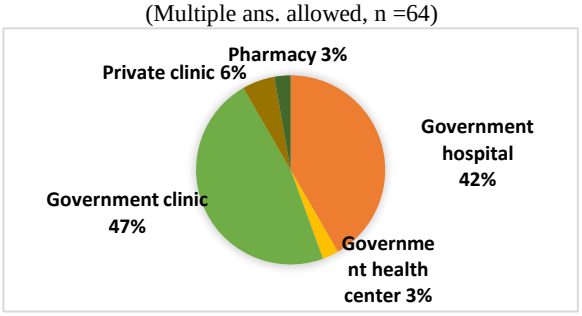
Health status of household members in the past twelve months (Multiple ans. allowed, n =64)



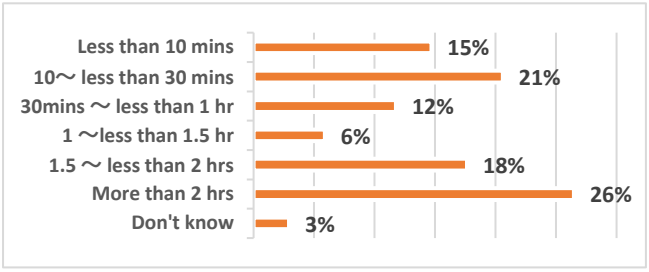
Ninety-seven percent of the respondents go to health facilities when they are sick, among them 91% go to

public health facilities (including hospitals, health centers, and/or clinics). It takes over two hours to go to a health facility for 26% of the respondents, while it takes 10 to 30 minutes for 21% of them. It takes over two hours to go to a hospital (higher level of health facility), and less than 30 minutes to go to a clinic. The transportation fee to go to a health facility is 0.1 to 5 US dollars for 47% of them, while 41% answered 0 US dollars. The reason cited by respondents and/or their family members for opting not go to a health facility is that "there are no health facilities in the community" (50%), they "do not feel the necessity" (25%), or "cannot afford it" (13%).

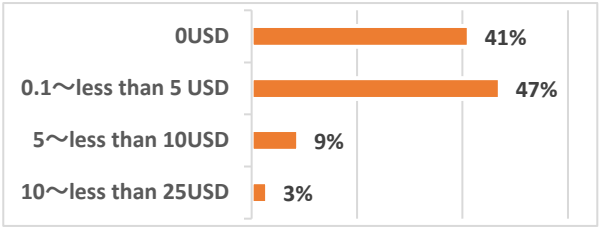
Type of health facilities go for treatment (Multiple ans. allowed, n =64)



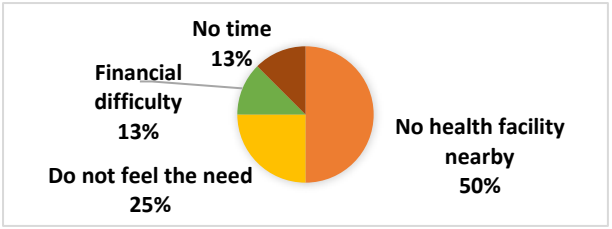
Time to access to h the health facility (one way) (n =34))



Cost to reach to the health facility (n =34)



Reasons not to seek treatment at health facility (n =8)



During the survey, some respondents mentioned that more people go to health facilities than they used to, since the pandemic of the Ebola virus outbreak, back in 2014. Among the communities where the survey was conducted, three of them did not have any public clinics, however, one of them (AB Anderson community in Margbi County) had easy access to a public hospital, as they were close to the County's capital.

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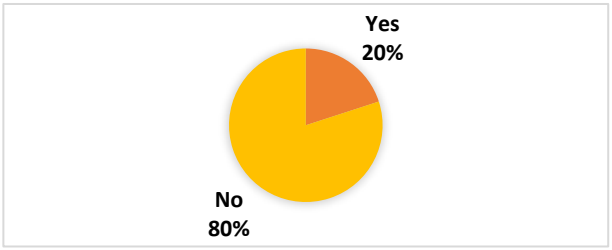
3-10. Residence, Water and Hygiene

Eighty percent of the respondents did not have electricity. At night, half (49%) of them use flashlights and 29% of them use "Chinese lamps" (a larger type of flashlight). Eighty-six percent of them reported having a bathroom at home, defined as a very simple, small space outside the home, covered with clothes, branches and leaves (as pictured below).

Availability of electricity (n =35)



Type of lighting facility (n =35)

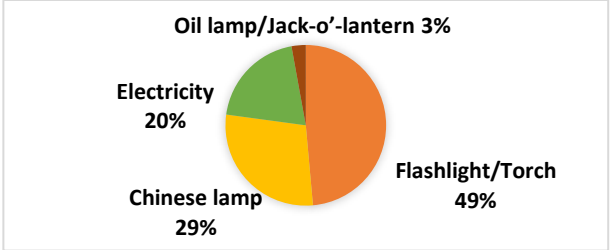
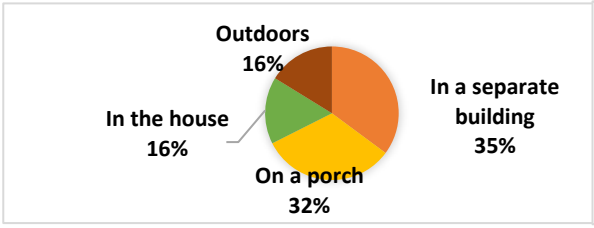


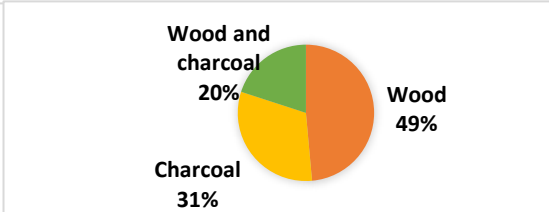
Photo: An outside bathroom

Only 16% of the respondents cook inside their houses, while 35% of them cook in another building and 20% cook in front of their houses. Firewood (49%) and charcoal (31%) and a mix of both (20%) are used as cooking fuel.

Place of cooking (Multiple ans. allowed, n =37)

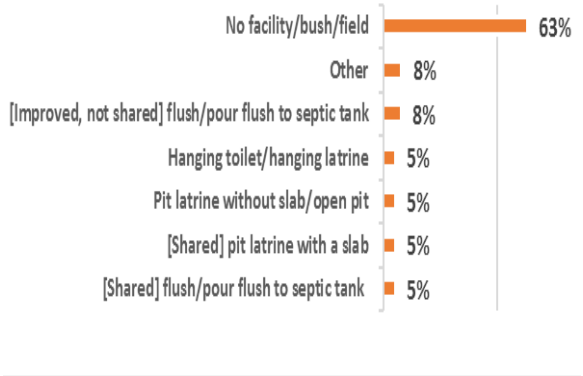


Type of fuels for cooking (n =35)

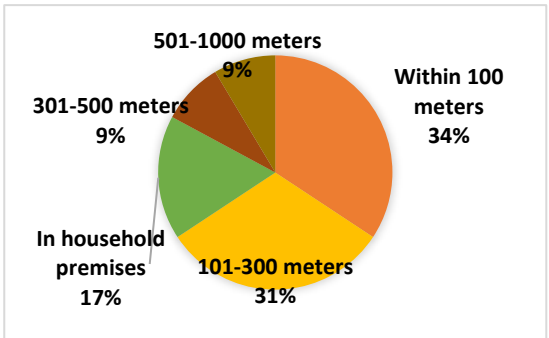


Sixty-three percent of respondents defecate outside the home (in the bush) and among them 65% of them reported that the distance to their voiding places were "within 300 meters". Defecating outside contributes to diarrhea and to the spread of intestinal infection, which can lead to malnutrition. It is, therefore, critical to set up adequate sanitation infrastructure in these communities. Seventy-percent of them get drinking water from "hand pump/protected dug well" and 25% from a "surface water source (river/lake/ponds/stream/canal". The large majority, eighty-three percent, of them had access to a water source within 300 meters. 69% of them drank water treated with chlorine, while 29% drank untreated water. In terms of waste disposal, 56% of them used a dumping ground nearby, while 22% of them threw out the trash in the bush.

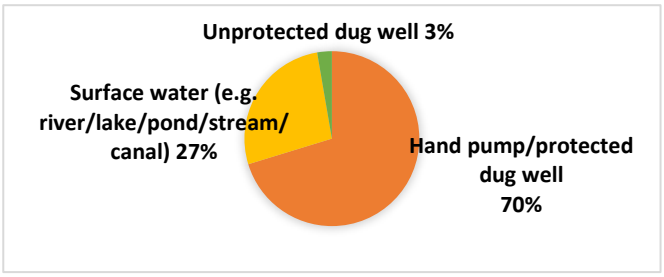
Place to defecate
(Multiple ans. allowed, n =38)



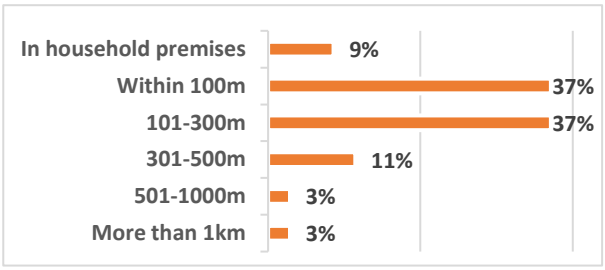
Distance to toilet/sanitation facility
(n =35)



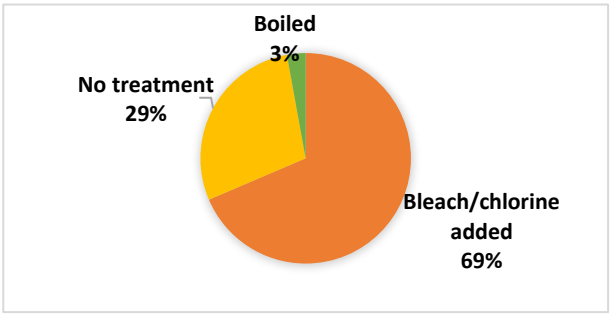
Place to go for drinking water
(Multiple ans. allowed, n =37)



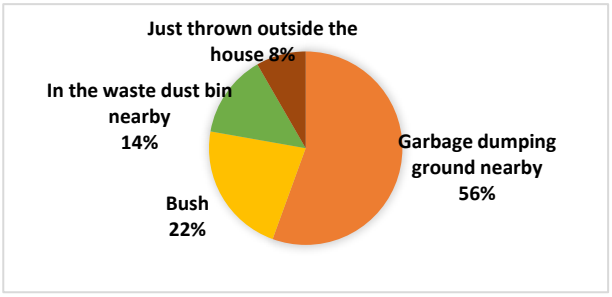
Distance to water source
(n =35)



Means to purify drinking water
(n =35)

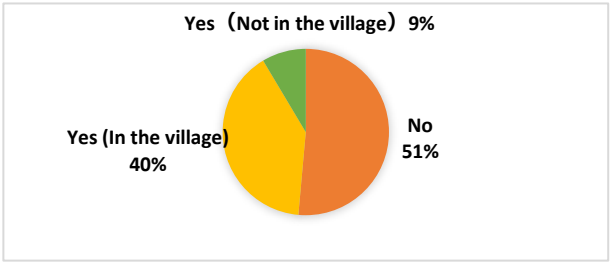


Places to dispose solid waste
(Multiple ans. allowed, n =36)

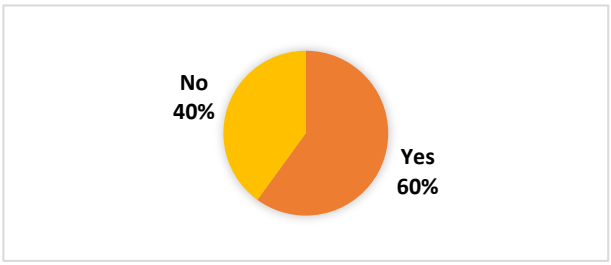


With regards to land ownership, 40% of respondents own land in their community, 9% of them own land in other areas, and 51% of them were not land-owners. 60% of them raise livestock and 87% of them raise chickens. Of those raising livestock, 38% of them raise 1-5 livestock, while a third (33%) of them raise 6-10 livestock. The majority of the respondents had a mobile phone (66%) and a radio (51%). Only very few people had a smart phone. The majority of communities were not connected to a mobile network. Over 80% of the respondents did not have a PC/tablet, TV, motorcycle, nor generator. Eighty-five percent of them got information from their friends through mobile phones, while 13% of them got information from a radio.

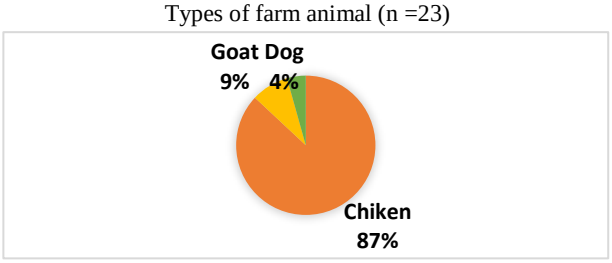
Possession of land (n =35)



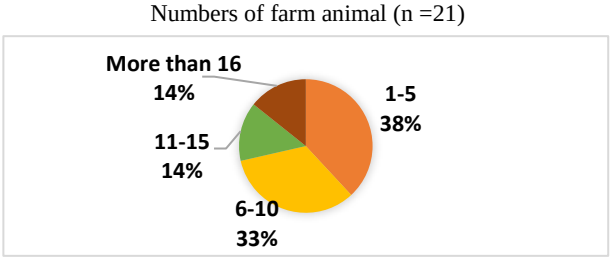
Possession of farm animal (n =35)



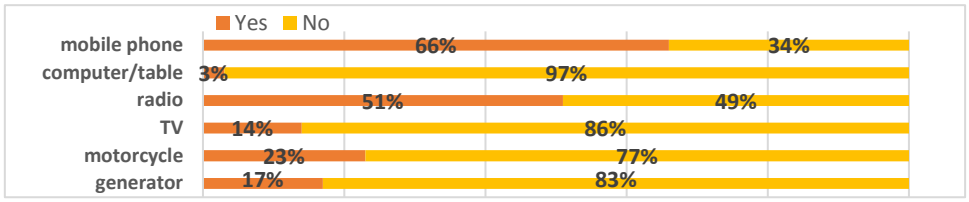
Types of farm animal (n =23)



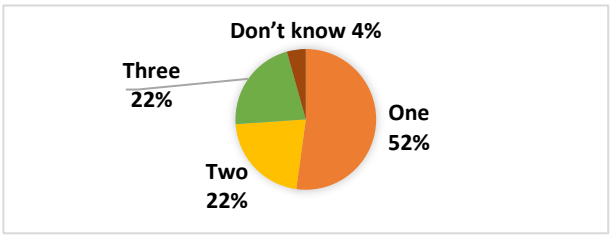
Numbers of farm animal (n =21)



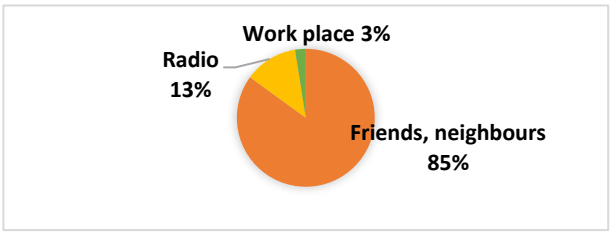
Possession of goods in the household (n =35)



Numbers of mobile phone in household (n =23)



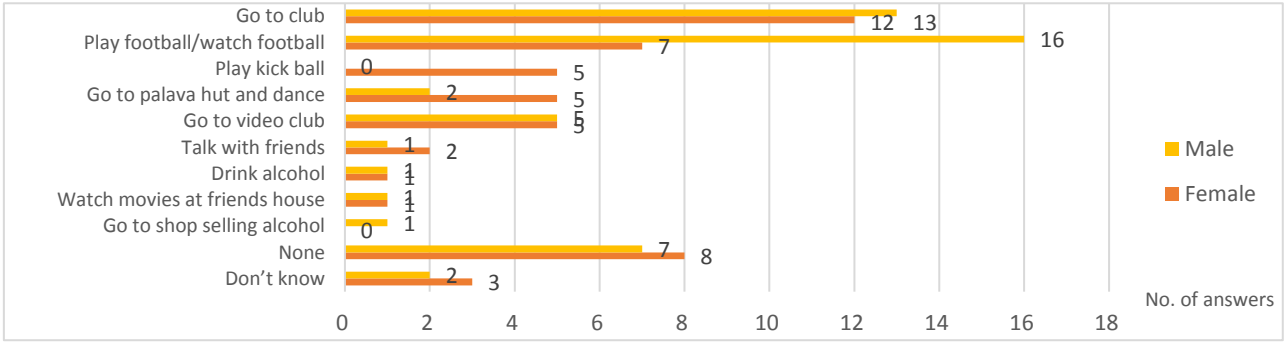
Means to collect information (Multiple ans. allowed, n =40)



3-11. Entertainment

Some respondents answered that playing and watching football, or clubbing were their preferred entertainment activities. Others reported that there was no entertainment in the community.

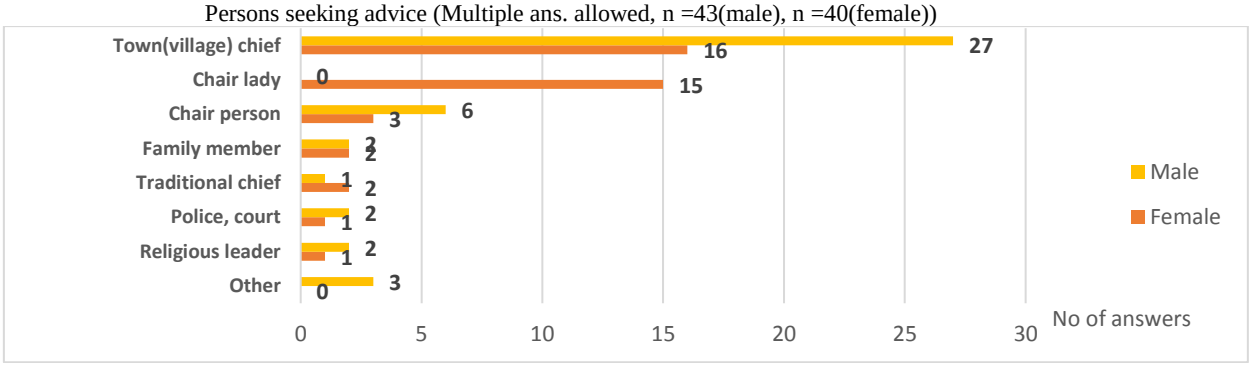
Entertainment in communities (Multiple ans. allowed, n =49(male), n =49(female))



3-12. Who to ask for advice?

Both males and females ask the town (village) chief for advice. At the same time, women ask women leaders for advice as well.

Persons seeking advice (Multiple ans. allowed, n =43(male), n =40(female))

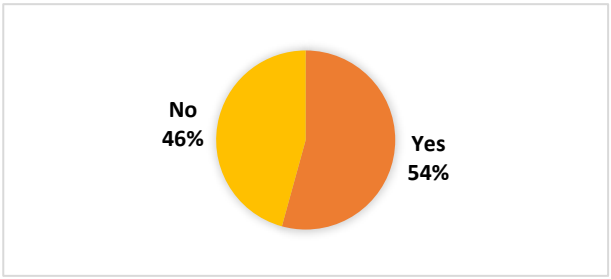


3-13. Membership in Community Organizations

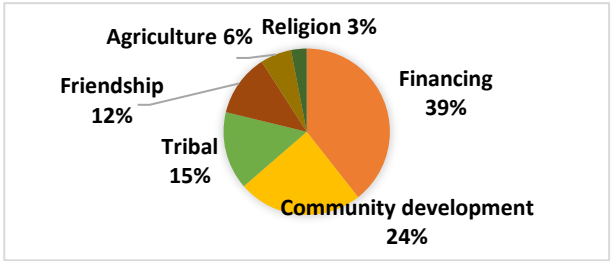
About half (54%) of respondents and their family members reported belonging to some community organizations. Of those, 39% belonged financial organizations, 24% belonged to community development organizations, and 15% to ethnically-based groups. Eighteen percent of the organizations consisted of "21-50 members", 16% of them consisted of "11-20 members" and 29% of them answered that they did not know the size of the organization.

Forty-nine percent of respondents reported that there was no admission fee to join these organizations, while 37% of them paid membership fees, and 14% of them were not aware of the cost, if any. Among the 37% who answered that an admission fee was required, 56% of them reported that the fee was less than USD5. Many of the respondents identified "SUSU" as a financial organization to which they belonged. This is a self-help organization that lends money to its members. Members deposit an agreed amount of money on a certain date to their leader and each member is lent money from those funds in a pre-agreed order. Respondents also mentioned being members of agricultural organizations established with the support of development agencies, such as NGO's. Additionally, there were self-help groups which had been formed in some communities such as a neighborhood watch, to safeguard against theft. Moreover, people from the same tribes come together regularly to discuss common issues/challenges and to support each other in case of illness or financial hardship. There were various organizations that cooperate with each other within these communities.

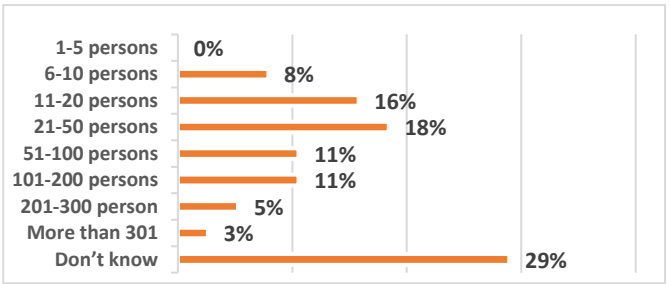
Memberships of community organization (n =35)



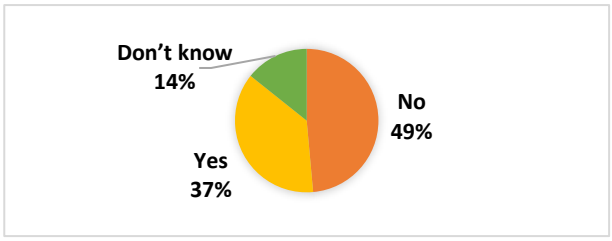
Types of community organization
(Multiple ans. allowed, n =33)



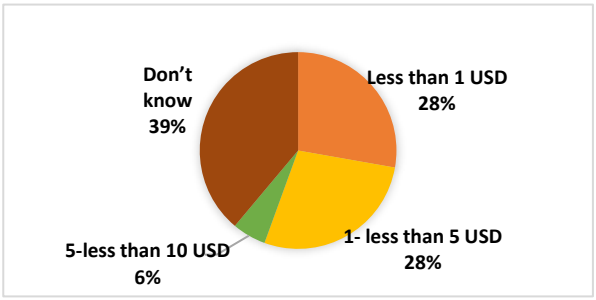
Numbers of membership (Multiple ans. allowed, n =38)



Registration fee for joining organization
(Multiple ans. allowed, n =35)



Amounts of registration fee (n =18)

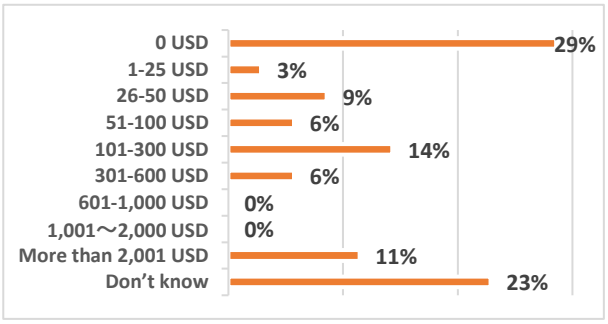


3-14. Household Income and Expenditures

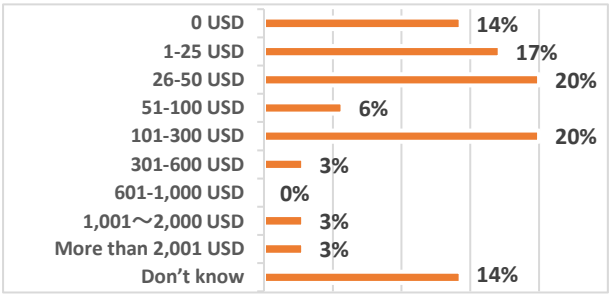
About a third (29%) of respondents reported that annual household income for the previous year was USD0, while about a fifth (23%) of them did not know. The concept of "annual household income" is not common among the respondents. It is assumed that they were making ends meet with what they earn on a daily basis.

Respondents reported household income for the previous month (October 2016: dry season), as follows: "USD26-USD50" (20%), "USD101-USD300" (20%), "USD1-USD25" (17%), "USD0" (14%), and "don't know" (14%). The main source of income was: a small business (40%), mining (by miners) (17%), mining (by diggers) (15%) and agriculture (10%). Ninety-one percent of the responders answered that the income was not stable throughout the year. Ninety-four percent of respondents had more income during the dry season, and conversely 97% spent more in the rainy season.

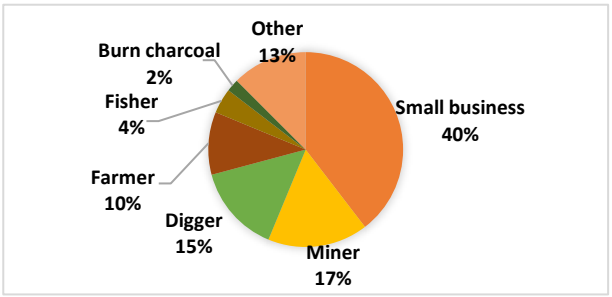
Household annual income (n =35)



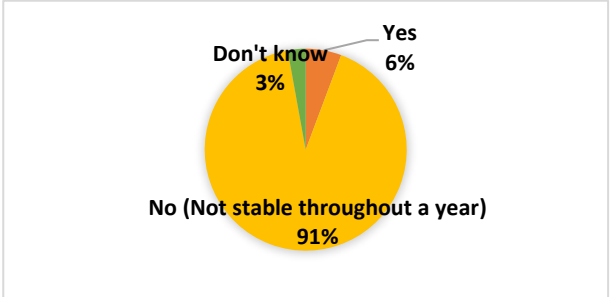
Household income of the previous month (October 2016: dry season) (n =35)



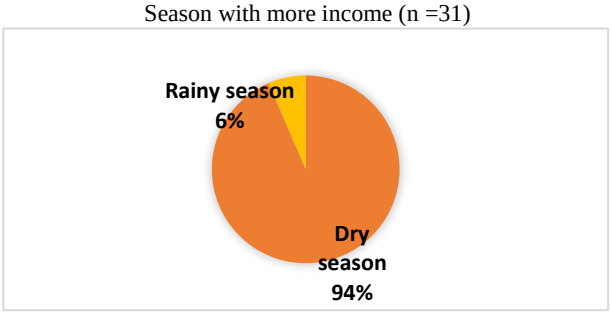
Major source of income (Multiple ans. allowed, n =48)



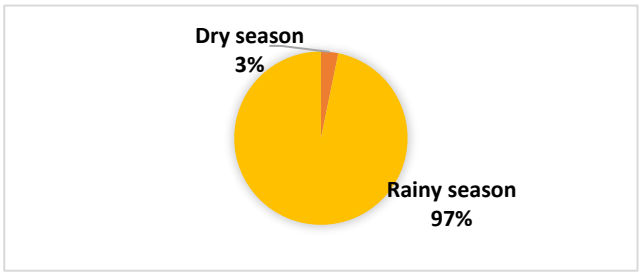
Stability of monthly income throughout a year (n =35)



Season with more income (n =31)

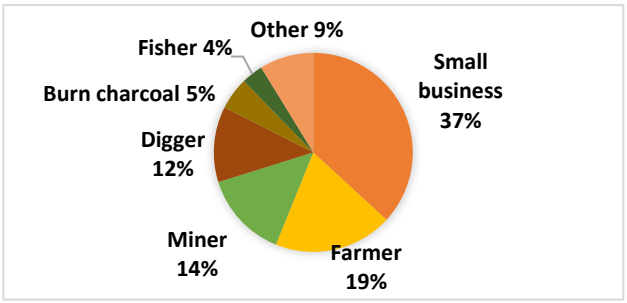


Season with more expenditure (n =31)

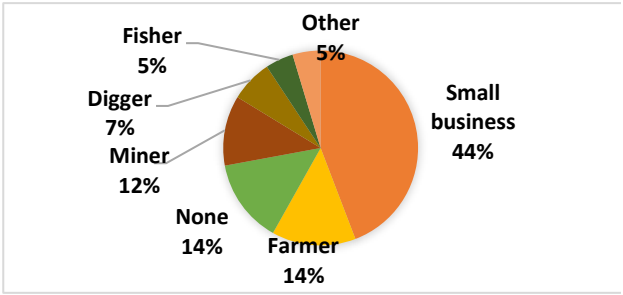


There was no huge disparity between the dry season and rainy season in terms of income sourced from either a small business (37%: dry season, 44%: rainy season), or farming (19%: dry season, 14%: rainy season). The major disparity across the two seasons was most seriously felt in the mining sector, as 26%: of miners and diggers reported gaining income in the dry season, while 14% of them reported no income at all in the rainy season. During the dry season, mining is active, therefore, small businesses gain vibrancy in response to the increased demand around the bustling activities generated by mining. The road conditions are good and there is more traffic, therefore small businesses make more sales. On the other hand, in the rainy season, mining is dormant and related income decreases. In addition, transport is difficult around unpaved roads, which may become unpassable, increasing transportation costs, as well as the costs of all other goods, as well as decreasing traffic flows.

Major source of income in dry season
(Multiple ans. allowed, n =57)

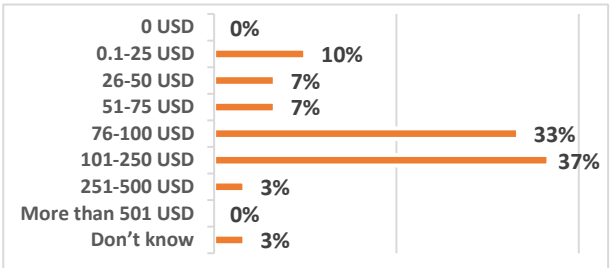


Major source of income in rainy season
(Multiple ans. allowed, n =57)

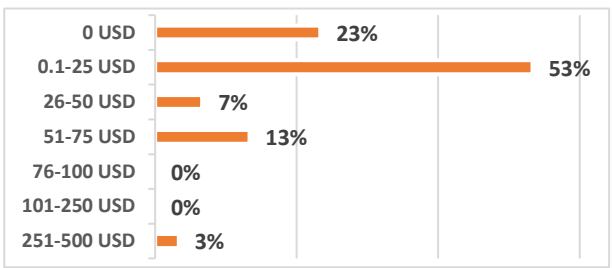


Here is the breakdown and amount of monthly expenditures[8].

Food expenses per month (n =29)

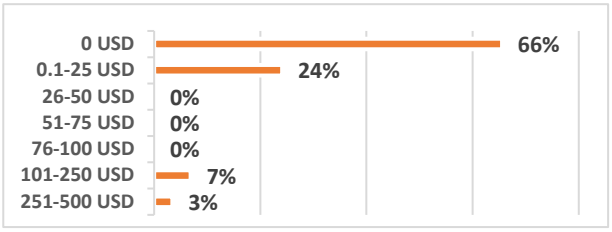


Travel expenses per month (n =30)

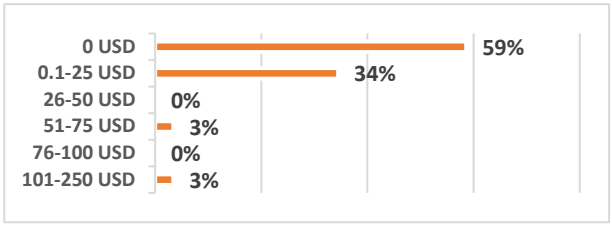


[8] In case respondents answered the annual amount, the amount was divided by 12 months.

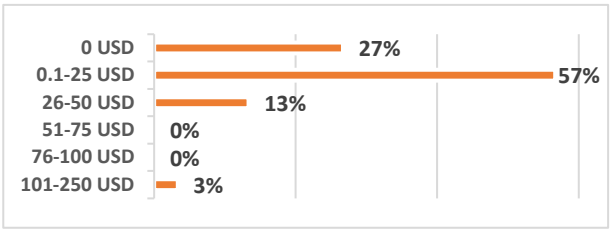
Water, electricity and housing expenses per month (n =29)



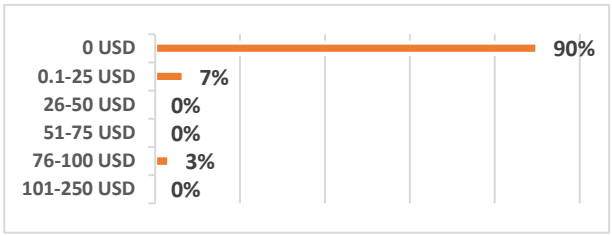
School expenses per month (n =29)



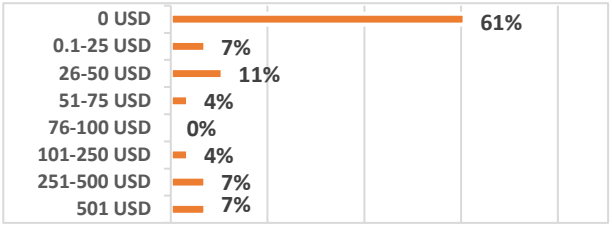
Medical expenses per month (n =30)



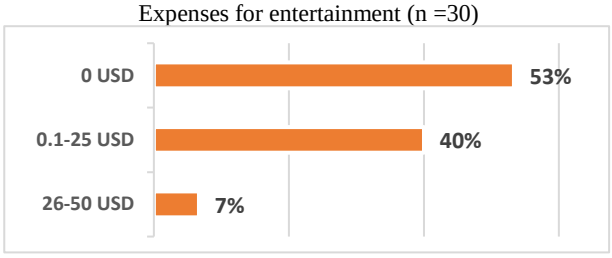
Land lease fees per month (n =30)



Business expense per month (n =28)



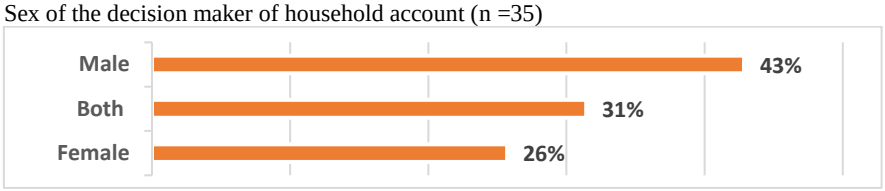
Expenses for entertainment (n =30)



The majority of household income is spent on food. As such, it would greatly ease the financial burden suffered by these communities, if food expenses were reduced.

In terms of household budget allocation, forty-three percent of the respondents reported that men are the decision-makers, while about a third (31%) responded that both men and women had equal say, and a quarter (26%) viewed women as the key decision makers.

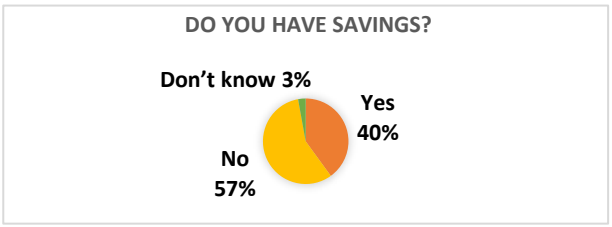
Sex of the decision maker of household account (n =35)



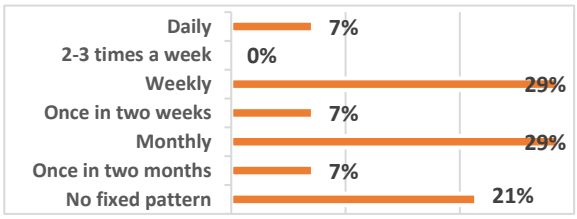
3-15. Savings

Forty percent of the respondents had savings. Among them, 29% saved money either every week or every month, while 21% did not save regularly. The amount of savings put away each time was reported as follows: “less than USD10” (21%), “USD11-USD50” (21%), “don’t know” (21%). 43% of them saved by contributing to the village savings group, SUSU, while 36% of respondents used a bank account.

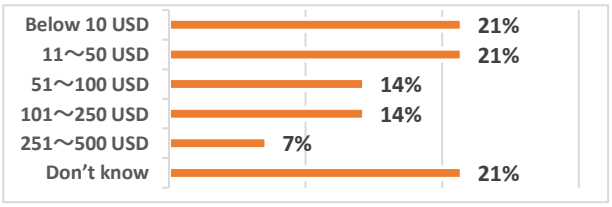
Sex of the decision maker of household account (n =35)



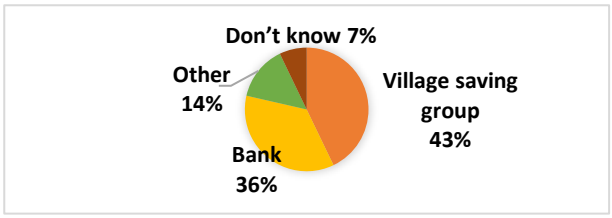
Saving behavior (n =14)



Amount of saving in one time (n =14)



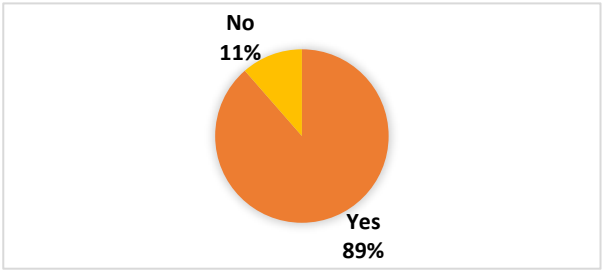
Place for saving (n =14)



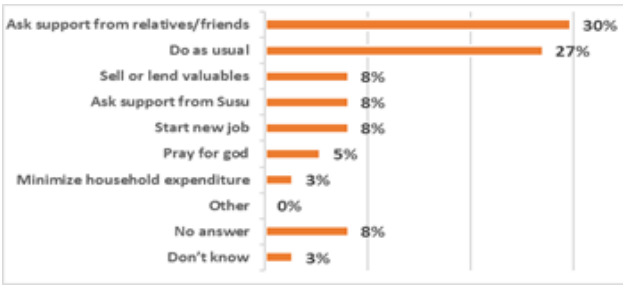
3-16. Debts

Unsurprisingly, given the rampant poverty and financial vulnerability experienced in these communities, a substantial majority, (89%) of respondents had experienced financial difficulty over the past year. When they faced difficulties, about a third (30%) of them asked for support from their relatives or friends, while 27% just continued to work and carry on as usual. When facing a financial difficulty, about a third (30%) of them took on debt or sold valuables. About half (55%) were able to get a loan from their relatives, friends, or a community based financial organization (SUSU). They went into debt for: business expenses (21%), food expenses (21%), mediation costs (14%), clothes (14%), health expenses (14%). The interest rate was: "don't know" (36%), "over 20% of the total debt" (27%), and "no interest" (18%).

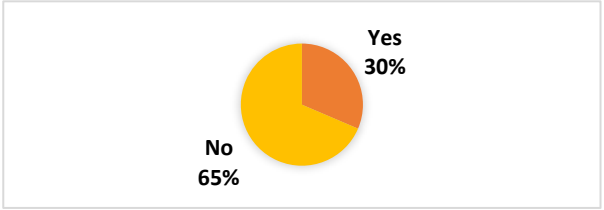
Experiences of financial difficulties in the household last year (n =35)



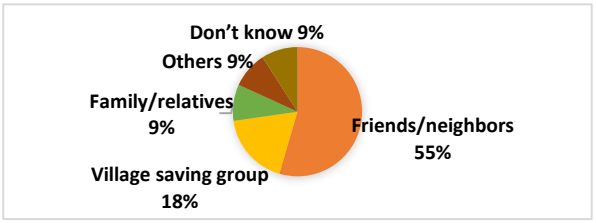
Means to cope household financial difficulties (Multiple ans. allowed, n =37)



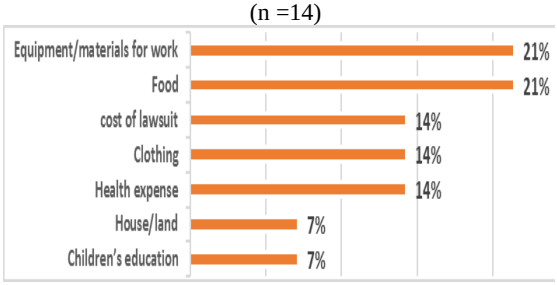
Experiences of loan or sold valuable items (n =35)



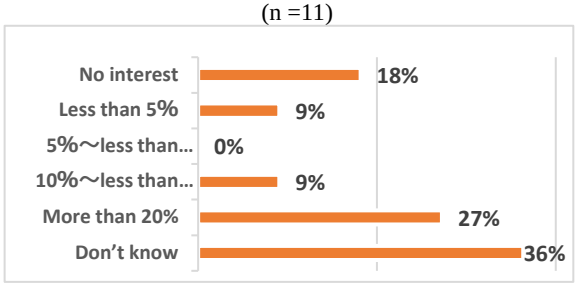
Persons who ask for loan or sold valuable items (n =11)



Reason for loan or sold valuable items
(n =14)



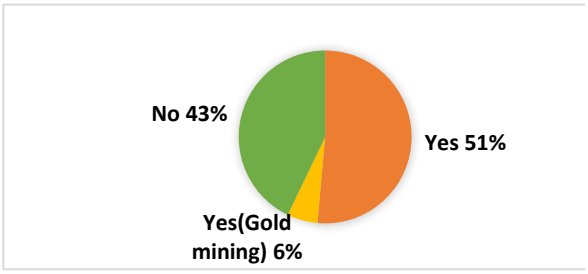
Interest rate for the loan
(n =11)



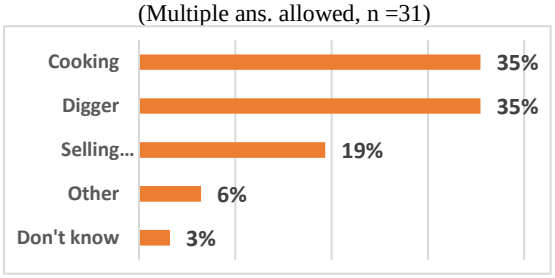
3-17. Situation in the Mining Sites

Fifty-seven percent reported that there were female workers at mining sites: preparing meals for diggers (35%), mining (35%), and selling bread or snacks" (19%). The challenges faced at mining sites are: "stealing," "violence" (21% respectively); "drugs," "child labor" (10% respectively), "There is no issue" (5%).

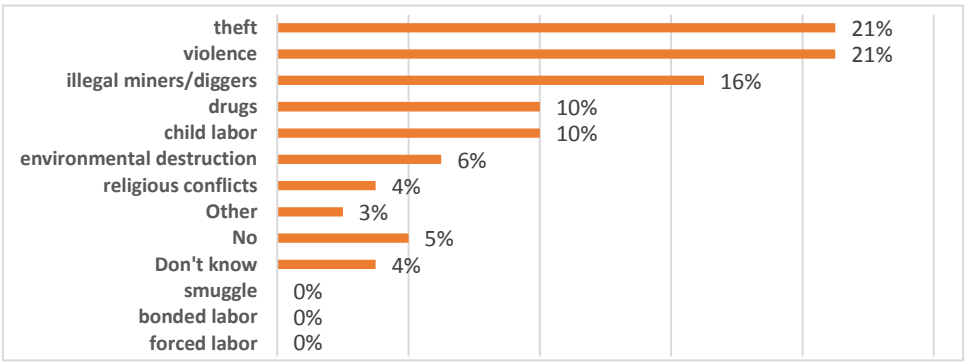
Female labor in mining sites (n =35)



Types of work by female workers in mining sites
(Multiple ans. allowed, n =31)



Problems in mining sites (Multiple ans. allowed, n =80)



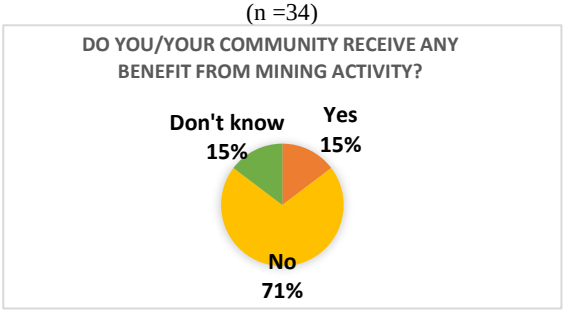
Seventy percent of the respondents believed that mining was not beneficial for their community, while half believed that mining also actually harms their community—these were two separate questions, as noted in the graph below.

The benefits of mining to the communities are: miners have to get permission from the town (village) chief before they start mining and pay part of the earnings from the mining to the town (village) chief[9]. People who prepare meals for diggers get a share when diggers find diamonds. Miners give gratuities to the communities, build community meeting places (palava hut) and pave roads.

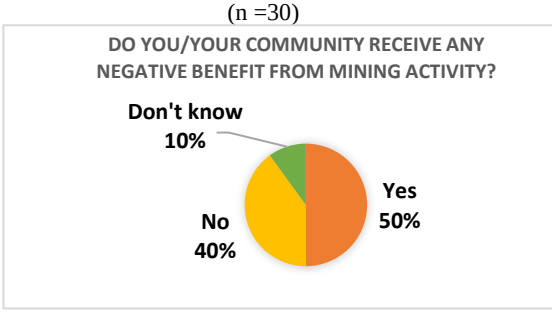
[9] A case from a gold mining site.

The disadvantages of having mining in the community are: many people from outside enter the communities, miners and diggers do not care about the development of the community. Even when miners and diggers find diamonds, they go to Monrovia soon afterwards, and only come back after they have spent all the money. Diggers commit thefts at mining sites or in the community.

Benefit from mining activity to the village (n =34)



Negative impact of mining activity to the village (n =30)



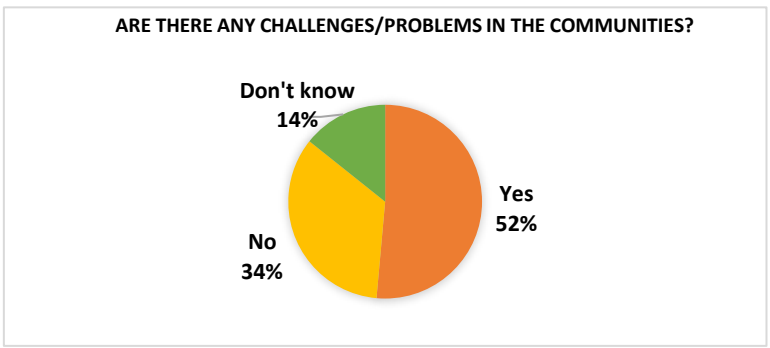
3-18. Future Expectations

Fifty-two percent of respondents reported that their community had issues which needed to be addressed, while 34% didn't think so, and 14% didn't know. The issues include the lack of infrastructure in their communities (bathrooms, hospitals, schools, and paved roads), high costs of consumer goods as these are largely imported from outside communities, and the dearth of job prospects and little entertainment.

When asked what kind of changes they would like to make for themselves and their families in order to live better lives, respondents expressed the following: (i) provide a better education to their children; (ii) build and/or repair a house, (iii) start and/or expand a business; (iv) get a better job and earn higher wages; (v) have access to a hospital, bathroom and clean water.

Following on, they were asked what changes they were making to bring about these improvements, common responses included: "working hard on the current job", "nothing", "praying to God". While a minority had been working to improve their communities by building a school, supporting young people (not detailed), and giving lectures to children. From these examples of community self-help, it is evident that people in these communities could further enhance their cooperation with each other to improve their lives by developing a proper system that makes this possible.

Challenges in the communities (n =35)



Photos

3-19. Photos from the field survey

An interview to a miner's family member  	An interview to a digger's family member 
A small business by a digger's family member 	A kitchen of a digger's house 
A digger's house 	A villager's bathroom 

4. Cooperative Development Agency's Roles and Activities

In the model project, DFP is planning to support artisanal diamond miners and diggers to organize themselves into cooperatives and to run them democratically, as parts of a set of activities to mine fair diamonds.

The Cooperative Development Agency (CDA) is established in Liberia as a government body to: facilitate organizing workers into cooperatives, as well as to monitor and supervise cooperatives' activities. As such, CDA will play an important role in the DFP's model project. Thus, the team collected information on CDA's activities and presents it as follows:

4-1. History of CDA

By enacting the Cooperative Society Act in 1936, cooperative activities became legal in Liberia. Cooperative activities originated from traditional "Kuu and Susu[10]" and from thereon became popularized. CDA was established in 1981, as a regulatory body. Following on, CDA supported the establishment of 408 cooperatives in the 70's and 80's. 324 out of 408 of these, are agricultural related cooperatives. As of now, a total of 450 cooperatives have been established in Liberia.

There is only one cooperative certified as fair trade in Liberia, which is, Foya Maliado Cacao producers' cooperative in Lofa County. GIZ helped that cooperative and it was certified as fair trade in 2014.

Ten to fifteen mining-related-cooperatives were established so far. However, the majority of their activities are not under current implementation, according to CDA.

4-2. Collaboration of CDA and MLME

CDA took part in the workshops that MLME organized to develop the Roadmap in 2016 and raised the awareness of the participants on the benefits of a cooperative. MLME and CDA have largely agreed to work together to organize miners into cooperatives.

4-3. Definition and conditions of a cooperative

CDA defines a cooperative as follows:

"Association/Cooperative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise"[11]

To establish a cooperative, CDA requires a minimum of 15 members and a minimum of 25% female

[10] Kuu is a group whose members provide their labors. For example, the members work on the farm of member A this week. They work on member B's farm next week. They do not exchange any money. Susu is a financial group whose members bring a certain amount of money every time they meet. The group lend the money to members with interest and share the interest at the end of the year. The rules may be different depending on the group.

[11] Cooperative Development Agency (CDA). Basic Steps in Forming an Association/Cooperative. (Year Unknown)

representation. Another requirement instituted by MLME stipulates that a cooperative must have at least fifteen valid Class C mining licenses. While it does not mean that each member has to have a valid Class C license, it does mean that the total number of valid Class C licenses needs to be at least fifteen per cooperative. As such, it would be acceptable if five miners, each have three valid Class C licenses.

4-4. Role of CDA and steps to become a cooperative

CDA plays a role in raising awareness/monitoring/supervising the groups and in providing advice before/during/after the groups become cooperatives so that they comply with the rules set by CDA.

In order to establish a cooperative in Liberia, a candidate group needs to complete the following requirements[12]:

i) Identify persons wishing to set up a democratically run group to deal with shared needs form a provisional committee;

ii) The provisional committee must organize a general meeting of all members for start-up;

iii) Elect a Provisional Board of Directors to prepare the constituting general meeting of the association and set up a by-laws committee;

iv) The constituting general meeting officially creates the association with its statutes and by-laws;

v) Provisional Board of Directors submits a letter of intent to CDA requesting support;

vi) Upon receipt of the letter, CDA conducts a feasibility study and/or baseline survey to ascertain the current activities of the proposed association/cooperative. The proposed group needs pay USD275 to CDA to cover the cost of the study/survey;

vii) Based on the results of the study/survey, CDA conducts trainings in basic association/cooperative principles, governance, leadership and financial management. During this period, CDA also reviews the by-laws of the proposed association/cooperative to ensure that they were established in accordance with the guidelines, as set out by CDA. CDA issues Pre-Association/Cooperative Status Permit Certificate to allow the group to operate for four to six months.

viii) Proposed cooperative conducts democratic leadership elections under the supervision of CDA.

ix) The elected leadership completes the following:
- Prepares the business plan
- Hires a management team
- Secures funding
- Opens a bank account
- Establishes an office
- Sets up a signboard

x) The proposed association/cooperative operates in accordance to the law.

xi) After a certain period of time, CDA conducts its due diligence. In case CDA confirms that the proposed association/cooperative is compliant to the law, it then issues the official association/cooperative permit, which is valid for life.

[12] Cooperative Development Agency (CDA). Basic Steps in Forming an Association/Cooperative. (Year Unknown)

After the association/cooperative starts its activities officially, CDA is charged with the following activities[13]:

i) Annual auditing

ii) Providing refresher training

iii) Periodic monitoring

CDA reportedly has staffing issues (only two officers to cover the whole western region) and insufficient funds to conduct its required activities, according to interviews with CDA officers.

4-5. Observation of trainings conducted by CDA

A team member observed the two-day training of basic principles for a proposed rubber producers' cooperative. The training program was as follows:

1st day	2nd day
- Remarks by CDA, self-introduction of participants - Conditions to be a member of a cooperative - International and domestic history of cooperative activities - Role of CDA - Why establish a cooperative? - Features of a cooperative - Advantages of joining a cooperative - Conditions and basic steps to establish a cooperative	- Conditions and basic steps to establish a cooperative (cont'd) - Structure of a cooperative - Differences between a cooperative and a private enterprise - Cooperative body for governance - Nine basic principles for good governance

4-6. Reflections

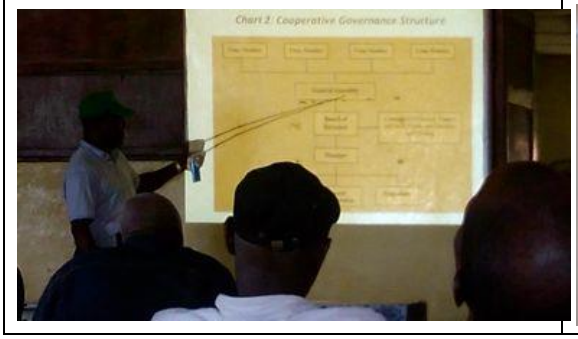
Participants learned a lot of important things during this two-day basic training. However, due to the limited time allocated, it was not possible to cover the full content, as planned. As such, at the end, the instructor asked participants to on their own, read the textbook and review the material not covered during the workshop. The textbook has lots of content which is difficult to understand. In order for participants to better understand it, it would be useful going forward, for the textbooks and teaching materials to be revamped, with a view to making them easily legible (including more visuals). At the same time, follow-up trainings are necessary, ensuring that practical implementation challenges can be adequately addressed.

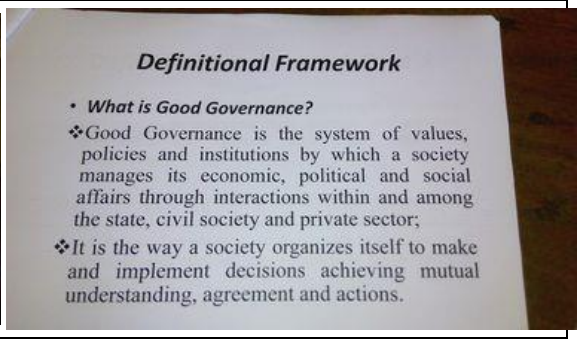
According to CDA, in order for a cooperative to be successful, good governance is key. CDA addresses governance not only in the pre-cooperative training but also in the three-day basic training of leadership,

[13] Based on the hearings from CDA officers

management and governance to be provided after organizing a cooperative.

Photos from a CDA Training: “Basic Principles of a Cooperative”





5. Locally Available Options for Efficient Income Generation Activities

As presented in the Major Findings 2. Reality of Artisanal Diamond Mining on the Ground, miners and diggers are trapped in a cycle of dependence on "supporters." In order to have fair diamonds in the future, this cycle needs to be broken. It is essential that miners and diggers have enough financial resources to break the cycle and sustain their artisanal diamond mining activities. At the same time, they need to reduce the costs associated with their mining activities.

The team researched activities which could either potentially increase their income, or reduce related mining costs. The following assumptions were made, with a view to ensuring viability/sustainability:

i) A side job which can be done while miners/diggers conduct their mining activities;
ii) A side job which can raise their income and produce products efficiently;
iii) An activity which does not require expensive facilities and/or machinery;
iv) Miners/diggers can procure in Liberia the materials necessary to carry out the activity;
v) In a case they need re-skilling, a local organization can readily provide the necessary training;
vi) The trainings to learn new skills and the follow-up are reasonably priced; and
vii) The local organization which provides the training has the capacity to provide follow-up through the entire process from the re-skilling/capacity-building to ensuring that it becomes an income-generating activity for the trainees.

As a result of the research, the team would like to present beekeeping as an efficient income generation activity, and Nerica rice farming as a cost reducing activity. DFP will be flexible to incorporate other activities as well in the project, if more viable options become available in the future.

5-1. Beekeeping

According to a study conducted by USAID, honey production in the USA and Europe has decreased, which brings about unmet demand for imported honey.[14] At the same time, there is a high unmet domestic demand for honey in Liberia. It is estimated that it will take about five to ten years to satisfy the domestic honey market, according to a NGO Universal Outreach Foundation (UOF) which provides beekeeping trainings in Liberia. Liberia Pure Honey, which works with UOF, is undertaking the preparation of a testing laboratory, with a view to making Liberia the base for honey exports in West Africa.

The team met with UOF, carried out interviews, and observed its beekeeping activities. UOF considers two years as the minimum period to fully train beekeepers. UOF provides the basic-skills-trainings in the first year and advanced-skills-trainings during the second year. UOF staff visit the trainees once a month during this period. Prior to starting the first training, UOF staff carry out a feasibility study—visiting the targeted area, observing the ecosystem and then estimating expected amount of honey production potential. If the expected amount is above their minimum standard, UOF launches its activities.

[14] United States Agency for International Development (USAID) (2015), Liberia Market Study for Selected Agricultural Products http://eatproject.org/docs/EATMarketAnalysisLiberia.pdf browsed on 30th March 2017

In launching its activities, UOF trainers start-off by providing a four-day basic training workshop in which trainees set up beehives. The trainer then visits the site once a month, observes the trainees' activities, and gives advice, as necessary. The trainer-trainee ratio is 1 to 20/25, and on average five to seven trainees out of a cohort of 20/25 continue undertaking beekeeping seriously. Others become indirectly involved in beekeeping (such as becoming a manager of a bee-products related business).

During the first month, trainees need some time to undertake the training and set up their beehives. After that, it takes on average, about ten minutes per week to properly care and tend the beehives. Given the level of efficiency, almost all beekeepers in Liberia do it as a side business. The ratio of bees colonizing beehives is 50%.—as such, if a bee-keeper sets-up four beehives, bees usually colonize two of them. They are then advised to move the uncolonized beehives to another area.

Beekeepers usually harvest honey once a year, in June. Once they master the trade, they can harvest twice a year. They usually harvest one to three gallons of honey per hive during the first year. When their skills are improved, they can harvest up to a maximum of five gallons per hive. Liberia Pure Honey buys all the honey at a set price of USD20 per gallon. Beekeepers do not have to spend money on transport to sell their honey because Liberia Pure Honey provides for pick-up. If a person who has not received UOF training directly, but has nonetheless produced and harvested honey in the way that UOF instructs, Liberia Pure Honey will also buy all his/her honey at the same set price.

Once a beekeeper earns money from honey sales, s/he realizes that s/he can efficiently earn income through bee-keeping which has a highly motivating effect. Given this efficiency, as well as the fact that UOF trainers use local materials, and provide robust follow-up and training, this seems to be a highly sustainable and viable option, as a part-time income-generating activity.

One of the challenges that UOF often faces, is that trainees tend to have some difficulties over how they allocate the shared equipment and the profits, especially during the first two months. Trainers support the trainees in setting rules on equipment and profit sharing during the first training.

Beekeeping activity

The amount of honey production depends on the ecosystem in the area. The more native flower trees in the area, the greater the production potential. It is expected that bee-keepers protect their environment and surrounding ecosystem so that they can reap economic benefits. While artisanal diamond mining causes environmental degradation, if miners/diggers keep bees as a side business, their awareness towards the environment can be raised as a side effect.

The cost to carry-out a preliminary assessment/feasibility study, trainings for about 20 trainees, and monthly follow-up's is about USD10,000 per year.

5-2. Nerica Rice Farming

The staple food in Liberia is rice. According to a study conducted by USAID, a whopping 85% of the calories consumed in Liberia come from rice. Since rice plays a very important role in Liberians' diet, no import tax is levied on it. Furthermore, the Liberian government limits the margin of 50kg wholesale rice to USD1. As a result, 60% of the rice circulated in the Liberian market is of low quality, at the mandated low prices. Rice farmers with low productivity in Liberia cannot make profits in the market, which demotivates them.[15]

Productivity of rice in Liberia and other countries

	Liberia Highland	Liberia lowland	Bangladesh	Egypt
Productivity/ha (MT: Metric Ton)	0.8 MT	1.2 MT	2.9 MT	7.25 MT

Source：Liberia Market Study for Selected Agricultural Products (USAID)and Commodity Intelligence Report (USDA)

The team calculated the cost to sustain an artisanal diamond mining activity with a team of eight diggers to be USD463.67. About 26% of it (USD119 or LD12,480) accounts for rice-consumption. If a cooperative can produce the rice necessary to cover the needs of an average 8-digger team, the cost is decreased to USD344.67 per month, which makes it more viable to raise the necessary funds.

The team considers Nerica (New Rice for Africa) as a good potential option for this purpose. Nerica is a hybrid crossbred African and Asian rice, which has more than 3,000 varieties. Some distinctive features of Nerica, include that it is strong in withstanding disease and dryness, and produces higher yields. Farmers can cut the production period, and harvest it twice or three times a year.

There is an organization named CHAP experimenting with Nerica, which is providing trainings in Liberia. According to CHAP, the productivity of Nerica in Liberia is about four MT per ha. Farmers learn the necessary skills to grow it, in an average of two years. CHAP provides basic skills training in the first year and advanced skills training in the second year.

Farmers need to buy a USD5,000 imported machine which includes functionality for cultivating and weeding. If DFP's project incorporates the Nerica farming activity, it is necessary to think about how a cooperative can purchase this machine and use it sustainably.

[15] United States Agency for International Development (USAID) (2015), Liberia Market Study for Selected Agricultural Products http://eatproject.org/docs/EATMarketAnalysisLiberia.pdf Browsed on 30th March 2017

Conclusion

Diamonds are secretive in Liberia. People do not talk about them, unless a rumor of finding a big one goes around. Diamond deals are usually sealed behind closed doors without leaving any transactional record, such as a sales receipt and/or valuation certificate.

Under these circumstances, supporters, miners and diggers cannot trust one another. Miners claim that diggers (are trying to) steal the diamonds in the mining claims, and diggers claim that supporters and miners tell them a lower, false sales price, in order to maximize profits.

Many people in the artisanal diamond mining areas feel that the mining activities have not benefitted their communities. In fact, the areas the team visited do not have paved roads, decent bridges, enough toilets and schools. The areas are off the main grid. The fact that people have mined diamonds for generations in the western region of Liberia, but cannot get out of poverty has made them feel deceived and angry. The team thinks this is one of the reasons that trust has eroded.

The team met some people in the communities who have been trying to solve the issues by undertaking self-initiated projects. On the other hand, the team met people who complain over their situation and are waiting for someone to come to help them without proactively attempting to address their own issues. When DFP is ready to select a targeted community to implement the project, DFP would select a community with self-initiated projects which speak to its people's proactivity and motivation. The communities without self-initiated projects need to apply good practices from other communities and start their own activities first.

Through conducting this survey, DFP came to know and understand the reality of the artisanal diamond mining in the western region of Liberia which has not been thus far documented neither through published print materials nor on the internet. It is necessary for DFP to design the model project applying the lessons learned through this initial assessment, and summarized in the next section.

Key Lessons Learned for Inclusion when Designing Model Project

In order for DFP to design a successful model project, with a view to ensuring that it is viable and sustainable, the following need to be incorporated:

1. Break the cycle of dependency on supporters

In order for miners/diggers to receive their fair share, it is necessary to break the cycle of dependency on supporters. To break the cycle, they need to raise their income sufficiently to be able to manage their own mining activities by: 1) mining a certain amount of diamonds and raising the production through improved mining methods, ensuring sustainable livelihoods for themselves and their families; and/or 2) undertaking additional income generation activities which can be done efficiently as side jobs.

2. Include diggers' representatives as members in a cooperative

The most marginalized group of people in the artisanal diamond mining sector are the diggers referred to as—"diamond boys." Some people say that it is difficult to include them in a cooperative because they are constantly on the move. However, if diggers and their interests are not represented, cooperatives will only provide benefits to miners—which would likely result in exacerbated social tensions and an increased trust-gap.

As explained in the major findings, some diggers do move after a period of a few months and others stay in one community for several years—as shown in the findings, 59% of those interviewed had lived in the same community for over 5 years. While it may be impractical to include all diggers as members of a cooperative because there are usually hundreds of them in an active mining community—a system of representation could be established. Leaders (miners by trade) could be elected, by the miners themselves, to speak on miners' behalf and represent their interests. In order to do so, diggers need to be organized.

Encourage diggers to organize themselves and to have regular activities

As stated in the previous section, diggers need to organize. However, there are only a few communities in the western region of Liberia where this is currently the case. Most of these groups do not hold regular activities, even if they have elected leaders. DFP may be able to work with these groups and support them in formalizing regularly-scheduled activities, as part of the model project. It is also necessary for DFP to encourage diggers to organize themselves, elect their leaders democratically, and have regular activities so that DFP can expand its projects to other areas in the future.

3. Make record keeping a habit

One of the reasons that the artisanal diamond mining stakeholders have trust issues is that they do not keep records of neither the sales transactions nor of the diamond valuations. If a supporter/broker issues a receipt to a miner, the miner can show proof of the sales price and estimated valuation of the diamond to the diggers which can provide a potential platform for building trust.

Additionally, writing meeting minutes may be helpful in decreasing the possibility of disagreement over decisions reached at meetings. It is necessary that DFP raise awareness among its stakeholders on the importance of record-keeping and the value of establishing a trail of documentation, as well as on appropriate follow-up, as necessary.

4. Raise awareness on the benefits of registering diamonds with GDO and encourage registration

The majority of miners interviewed did not know the importance of registering their diamonds with GDO and felt reluctant to do so. They were not aware of the registration benefits—acquiring higher prices for their diamonds— and felt burdened by the associated time and transportation costs required in visiting GDO.

As such, it is important to raise miners' awareness of the registration benefits, encourage them to do so, and increase the amount of diamonds circulating in the formal market.

At the same time, miners need to have valid licenses to register the diamonds with GDO. The major roadblock for registration is the absence of a valid license, due to the associated renewal costs. Again, it is necessary to provide additional income-generating activities, to ensure their business viability.

5. Promote miners' and diggers' understanding about cooperatives

The majority of miners interviewed were familiar with the concept of a cooperative. On the other hand, none of the diggers had any familiarity. MLME and CDA need to raise awareness not only among miners but also among diggers, as well as among the rest of the community members, so that the process of organizing cooperatives will be smoother, and gain further buy-in.

6. Set up economic incentives for cooperative members

In case miners and diggers are organized into a cooperative, its members need to work together on common goals. It is important to clearly communicate benefits/incentives for the whole cooperative and for individual members, in order to keep the retention rate high and develop adequate activities, serving their needs.

For example, incentives can be to facilitate access to microfinance or provide viable options to increase their individual incomes. It is very important that a cooperative understands its members' wants/needs and sets-up appealing economic incentives.

7. Use the progress of self-initiated community project as an indicator

The team met town chiefs and mining chairmen who complained that people were selfish and were not interested to work together towards the common good. The main activity of the model project will be organizing miners/diggers into a cooperative and running/managing them democratically. It means that DFP needs to select a community in which people have proven that they can work together harmoniously.

As an indicator for measuring the degree of how well people can cooperate with others harmoniously, the team suggests the use of on-going self-initiated community project(s). As the existence of such a project can serve as proof that people in the community can work with others, and can also serve as the foundation for a functioning cooperative.

8. Communicate project goals and objectives clearly

One of the risks the team expects confronting in the model project is confusion caused by the lack of understanding of the project's goals and objectives among stakeholders and beneficiaries. It is essential for DFP to communicate clearly, break down content, use straight-forward language and visual aids, as well as repeat the message through different media.

9. Sustainability and exit strategy

Miners/diggers need to sustain their mining and cooperative activities. The model project needs to have a structure in which members can sustain their own activities after completing the project. In order to do so, the project needs to use the resources available in Liberia.

Miners with Class C License are allowed to mine only a secondary deposit. They will deplete artisanal diamond mining in the future. The day that mining does not bring them any income will come eventually. The members of a cooperative need to be aware of this, and think about how they will sustain themselves when diamonds are no longer a viable option in their community.

Tentative Plan of a Model Project

The team would like to present the tentative plan of a model project with consideration of major findings and points to note. DFP has requested MLME to comment on the plan.

The idea is that DFP will implement the model project in one to three DMCs. When it is completed, stakeholders and DFP will analyze what went well, what went wrong and why. DFP will revise the plan of the project and expand it to other DMCs in Liberia.

i.	Project Title (Tentative):	Fair Diamonds Model Project
ii.	Target Area:	1 to 3 Diamond Mining Communities in Western Region, Liberia (the number of the project sites depends on the funding)
iii.	Project Period (Tentative):	Preparation Period: April to September 2017 Implementation Period: October 2017 to September 2020 (3 years)
iv.	Target Group:	Artisanal Diamond Miners and Diggers
v.	Implementing Organizations:	MLME, CDA, DFP

Narrative Summary	Activities
Overall Goal Fair diamonds mined in the targeted diamond mining community in the Western Region of Liberia will be distributed to the international market.	
Project Purpose Miners and diggers have more income and their living conditions are improved by putting a structure to produce and distribute fair diamonds.	
Outputs	**Activities**
0. The project is ready to start. - Pilot site is selected. - MOU is prepared. - Project steering committee is established. - Funding is secured.	0-1. Criteria to select the pilot diamond mining communities is developed. 0-2. 4 or 5 candidate diamond mining communities (DMCs) are shortlisted. 0-3. DFP in collaboration with MLME holds workshops in the shortlisted DMCs on the proposed project and DFP's vision and missions. 0-4. MLME and DFP select pilot artisanal diamond mining communites. 0-5. DFP will submit proposals to donors. 0-6. MOU among MLME, CDA and DFP is drafted and finalized. 0-7. MLME, CDA and DFP discuss about the TOR of the steering committee and select the committee members. 0-8. MLME, CDA and DFP will appoint steering committee members.
1. The targeted artisanal diamond mining community has a mining cooperative registered with GoL. - Representatives of all the mining stakeholders in the community. - Balanced membership of men and women. - Minimum 15 valid Class C License. - Constitution and bylaws reflecting the voices of all the stakeholders. - Criteria of membership - Defined structure of the cooperative - Elections for leadership - Registered with GoL	1-1. Miners, diggers and community members in the pilot community receive awareness training on cooperative. 1-2. Miners and diggers wishing to establish a cooperative set up a provisional committee. 1-3. The provisional committee organizes a general meeting of all members for start-up. 1-4. Elect a provisional board of directors to prepare the constituting general meeting of the cooperative and set up by-laws committee. 1-5. The constituting general meeting officially creates the cooperative with its statues and by-laws. 1-6. Provisional board of directors do a letter of intend to CDA for intervention. 1-7. CDA conducts feasibility study to ascertain the current activities of the proposed cooperative. 1-8. CDA conducts training in basic cooperative principles, governance, leadership and financial management. 1-9. CDA reviews by-laws to ensure it is in accordance with CDA standard by-laws guidelines. 1-10. CDA issues pre-cooperative status permit certificate to allow proposed cooperative operate for 4-6 months. 1-11. Proposed cooperative conduct democratic leadership elections under the supervision of CDA. 1-12. Elected leadership - prepare a business plan - hire a management team - secure funding - open a bank account - establish an office - have a signboard 1-13. CDA does due diligence and issues full fledged status to the cooperative

Outputs	Activities
2. Capacity to run a democratic cooperative is developed. - Management team - Understanding the role and responsibility of each member - Playing the role by each member - Linkage to financial resources - Agreements with stakeholders - Accountability - Transparency - Democracy - Inclusion of diggers, women, town authority etc. - Community development	2-1. Cooperative drafts, finalizes and concludes agreements with stakeholders such as supporters. 2-2. Cooperative receives training in the areas below: - management - record keeping - follow-up/refresher 2-3. CDA visits cooperative regularly to monitor 2-4. DFP provides assistance to day to day operation 2-5. MLME monitors the activities regularly. 2-6. Cooperative issues annual report 2-7. CDA audits the cooperative once a year 2-8. MLME and cooperative issue member ID cards. 2-9. Cooperative implements community development projects of its choice.
3. Traceability from mine to market is created. - Cooperative members understand the importance to register their diamonds with GDO. - The access to GDO is improved. - The cooperative register diamonds with GDO. - The cooperative sells diamonds to registered brokers then to registered dealers who export them with tracking records.	3-1. MLME conducts workshops on the importance of registering diamonds with GDO. 3-2. MLME follows up the workshops and monitor the activities. 3-3. MLME incollaboration with DFP decides how to improve the access of GDO in the project site and implement it. 3-4. Cooperative register diamonds with GDO. 3-5. MLME monitors the chain of custody (cooperative-broker-dealer). 3-6. Dealer exports diamonds from cooperative with tracking records.
4. Fair price and practices are introduced. - Cooperative can support mining activities on its own mining claims. - Cooperative members understand the importance of fair practices. - Cooperative members conduct fair practices. - Cooperative members implement smart (efficient) diamond mining. - Cooperative members know the fair price of diamonds. - Cooperative sells diamonds with fair price (Registered brokers/dealers buy diamonds with fair price from the cooperative). - Cooperative is certified as fair diamond producing cooperative. - MLME agents conduct fair practices.	4-1. DFP provides trainings for income generation such as bee keeping and nerica rice farming . 4-2. MLME and DFP develops the training contents of fair practices such as - human rights and rights for miners and diggers - smart mining - environment, safety, and health - negotiation skills 4-3. MLME and DFP develops the basic education program on diamond evaluation. 4-4. MLME and DFP provides the basic education program to cooperative. 4-5. MLME, DFP and cooperative develop the fair selling scheme such as auction. 4-6. Cooperative tests the fair selling scheme and modifies the operation. 4-7. DFP develops the standards to certify fair diamond producing cooperatives. 4-8. Cooperative applies for the status of fair diamond producing cooperative. 4-9. DFP evaluates and certifies cooperative as fair diamond producing cooperative. 4-10. MLME provides training to mining agents about fair practices. 4-11. MLME shares the information on the grievance mechanism to miners and diggers.
5. Pilot Project progress is publicized. - Progress is publicized in Liberia. - Progress is publicized internationally.	5-1. MLME and DFP publicize the progress of the project in Liberia. 5-2. MLME and DFP publicize the progress of the project internationally. 5-3. MLME and DFP educate the importance of organizing diggers into a group and encourage them to do so.

Way Forward

DFP needs to do the following prior to launching the model project.

1. Select the targeted community

1-1. Listing all the DMCs in the western region

DFP will make a listing of all the DMCs with basic information in Gbarpolu County and Grand Cape Mount County where the artisanal diamond production is deemed to be high. (Completed in April 2017. Please see Annex).

1-2. Shortlist the DMCs

From the listing made in 1-1, DFP will shortlist the DMCs which satisfy the criteria below.

Criteria to select the targeted DMC

	Criterion	Reason
1	The DMC produces a certain amount of diamonds.	The DMC will have a diamond mining cooperative and have activities with financial resources gained through diamond mining.
2	Miners want to organize themselves into a cooperative and have at least 15 valid Class C Licenses.	Miners will be the center of the cooperative. MLME requires a mining cooperative to have at least 15 valid Class C Licenses to receive an official permit.
3	Diggers are organized into a group and have elected their leaders.	Persons who speak on behalf of diggers need to be members of the cooperative.
4	The DMC has a self-initiated project to address their own issues.	To measure if people in the DMC can work with other community members harmoniously. .
5	Miners, diggers and community leaders understand the vision and missions of DFP and the concept of the project.	Beneficiaries and key players of the project need to understand what DFP is and what the project is about.
6	Miners and diggers allow women to enter the mining claims.	The project will implement activities which may not have been done before in Liberia. The beneficiaries need to be open to new ideas and let women take part in mining activities/monitoring.

1-3. Follow up visits to shortlisted DMCs

DFP will visit the shortlisted DMCs, collect more information on 1-6 above in each DMC, explain DFP's vision, missions and the tentative plan of the project so that people understand and receive their comments and/or suggestions.

1-4. Select the targeted DMCs

Based on the information collected in 1-3, DFP will discuss with MLME and select the targeted DMCs for the project. When selecting, MLME and DFP will prioritize the DMCs.

2. Modify and Revise the Plan of the Project

After DFP receives comments from MLME regarding the tentative project plan, DFP will discuss with MLME and relevant stakeholders, modify and finalize the project plan.

3. Secure funding for the Model Project

Concurrently, DFP will write proposals and submit them to funding organizations. If a donor organization provides partial funds, DFP will start the project in the highest prioritized DMC.

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Annex

Annex 1: List of DMCs in the western region of Liberia and Margibi County

✧ Gbarpolu County

#	Mining Agency	Mining Zone	Predominant Mineral*	Mining Community	Estimated Population	Estimated Number of Artisanal Miners	Estimated Number of Diggers	Major Tribes	Major Religions and Their Estimated Ratio
1	Gbarma		Diamond	Gbarma	4875	10	100+	Gola,	Christianity 50%, Islam 50%
			Diamond	Beatoe	330	3	12	Gola	Christianity 75%, Islam 25%
			Diamond	Sirleaf Camp	250	10	150	Mende, Kpelleh, Mandingo	Christianity 15%, Islam 85%
			Diamond	Yangaya	2000	25	500	Gola, Kpelleh	Christianity 60%, Islam 40%
			Diamond	Njaboi	3000	6	100	Gola	Christianity 40% Islam 60%
			Diamond	Tarkpoima	3000	8	100+	Gola, Gbandi	Christianity 60%, Islam 40%
			Diamond	Parkers Town	2400	1	6	Gola, Kpelleh	Christianity 50%, Islam 50%
			Diamond	Vaye Town	150	22	150	Gola, Kpelleh, Lorma	Christianity 50%, Islam 50%
			Diamond	Mecca	160	1	6	Gola	Christianity 20%, Islam 80%
			Diamond	Dewa	350	1	6	Gola	Christianity 85%, Islam 15%
			Diamond	Maboi	20	1	0	Gola, Mandingo	Christianity 20%, Islam 80%
			Diamond	Dabors Town	15	1		Gola	Christianity 10%, Islam 90%
			Diamond	Tindowa	2500	2	35	Gola, Mandingo	Christianity 80%, Islam 20%
			Diamond	Smith Town	2000	80	500	Kpelleh, Kissi , Mandingo, Gbandi	Christianity 80%, Islam 20%
2	Zalekai		Diamond	Bellekpalamu	900+	30	200	Kpelleh	Islam 20%, Christianity 80%
			Diamond	Weama	570	15	42	Kpelleh, Belleh	Christianity 70%, Islam 30%
			Diamond	Molowamu	350	9	150	Kpelleh, Mende,Fula	Christianity 80%, Islam 20%
			Diamond	Matumuquelleh	1000	6	30+	Kpelleh, Mandingo	Islam 40%, Christianity 15%, Pagan, non Islam and Christianity 45%
			Diamond	Yeamah	1500	33	200	Kpelleh, Mandingo	Christianity 70%, Islam 30%

Blank cells: Information not available at the time of research, Gray cells: Gold dominant community

#	Mining Agency	Mining Zone	Predominant Mineral*	Mining Community	Estimated Population	Estimated Number of Artisanal Miners	Estimated Number of Diggers	Major Tribes	Major Religions and Their Estimated Ratio
3	Weisua		Diamond	Balla Bassa	5000	60	300	Mandingo, Bassa, Kissi	Christianity 50%, Islam 50%
			Diamond	Weisua	2500	30	170	Mandingo, Kpelleh, Mende	Christianity 65%, Islam 35%
			Diamond	Bugbey	60	5	200	Mende, Mandingo	Islam 80%, Christianity 20%
			Diamond	Gbandi camp	30	3	20	Gbandi, Mende	Islam 60%, Christianity 40%
			Diamond	Kissi camp	20	3	15	Kissi, Gola	Christianity 80%, Islam 20%
			Diamond	Thomas Flomo camp	15	2	10	Gola, Mandingo	Islam 80%, Christianity 20%
			Diamond	Gbuyama	80	9	50	Gola	Islam 80%, Christianity 20%
			Diamond	Saah Fineboy camp	40	4	30	Kissi, Mende, Gola	Islam 95% Christianity 5%
			Diamond	City in the forest	35	3	18	Mandingo, Mende, Gola	Islam 40%, Christianity 60%
			Diamond	Mattthew camp	30	2	10	Kpelleh, Kissi, Gio	Islam 5%, Christianity 95%
			Diamond	Kewelleh camp	150	3	15	Gola	Islam 75%, Christianity 25%
4	Kungbor		Diamond and Gold	Kungbor town	1000	50	100+	Goal, Mandigo, Mende, Kppelleh	Islam 60%, Christianity 40%
			Diamond and Gold	Camp Alpha	4500	43	1000+	Mende, Mandingo, Kissi, Gbandi	Islam 75%, Christianity 25%
			Diamond and Gold	Gbah town	80	11	40	Kissi, Gola, Mende	Islam 75%, Christianity 25%
			Diamond and Gold	Beaden town	500	20	50	Gola, Mende, Gio	Islam 70% Christianity 30%
			Diamond and Gold	Mbama	600	6	15	Goal, Mende, Gbandi	Islam 65%, Christianity 35%
			Diamond and Gold	Bassa camp	70	5	40	Bassa, Gola, Mende	Islam 30%, Christianity 70%
			Diamond and Gold	Bia-bia camp	60	6	35	Gola, Mende	Islam 10%, Christianity 90%
5	Belleh		Gold						
6	Henry town		Gold						
7	Bopolu		Gold						

Blank cells: Information not available at the time of research, Gray cells: Gold dominant community

✧ Grand Cape Mount County

#	Mining Agency	Mining Zone	Predominant Mineral*	Mining Community	Estimated Population	Estimated Number of Artisanal Miners	Estimated Number of Diggers	Major Tribes	Major Religions and Their Estimated Ratio
1	Kwallahun		Diamond	Manor River Congo	5000+	35	300	Mende, Vai	Islam (95%), Christianity (5%)
			Gold	Butter Hills	3000				
			Diamond	Benduma	2000 +	3	40	Gola	Islam (95%), Christianity (5%)
			Diamond	Conja	300+	2	30+	Gola , Mende, Vai	Islam(90%), Christianity (10%)
				Nyenkelhun*					
			Diamond	Jejuah	2000+	16	600	Gola, Vai, Mende	Islam(90%), Christianity (10%)
			Diamond	Kwallahun	5000+	5	300	Mende	Islam (90%), Christianity (10%)
				Moila*					
				Mafapea*					
			Diamond	King Stone	1000+	10	500	Mende	Islam(80%), Christianity(20%)
			Gold	Funor					
			Gold	Reed village					
				Bombo Dasalamo/Guasay					
2	Varguay		Gold	Lofa Bridge	5000+	20	100+	Gola, Mandingo	Islam(50%), Christianity (50%)
			Gold	Tahn	3500				
			Diamond	Mana Gordua	2000+	15	100+	Gola, Mende, Vai	Islam(60%), Christianity (40%)
			Diamond	Varguay	2500+	25	500	Gola, Vai	Islam(60%), Christianity(40%)
			Diamond	Lofa Congo (Diamond Congo)	2000+	30	200	Kissi, Mandingo	Islam(20%), Christianity(80%)
			Diamond	Marbon Zingbeku	1000+	7	160	Gola, Vai, Mende	Islam(90%), Christianity (10%)
			Diamond	Gohnzoe	600+	17	100	Gola	Islam(75%), Christianity(25%)
			Diamond	Marbon Wanga	500+	5	75+	Gola	Islam(75%), Christianity(25%)
				Marbonn Mi Skina*					
			Diamond	Jawa – Jei	600+	15	200	Gola	Islam(75%), Christianity(25%)
			Gold	Weasay	1000+				
			Gold	Gbenii	1000+				
			Gold	Mecca	872				
			Gold	Weajue Town	2500+				
			Gold	Todemei Town	350				
3	Keita		Diamond	Keita Town	800	10	35	Gola	Islam 50% Christianity 50%
			Diamond	Jennehmana Town	1000	2	50	Gola, Gio	Islam 30% Christianity 70%
			Diamond	Gondor Town	1500	10	150	Gola, Kpelleh, Gio	Islam 50% Christianity 50%
			Gold and Diamond	Gold Camp	1000 +	5	100+	Mende, Mandingo, Gola	Islam 70% Christianity 30%
			Diamond	Wealiqueh Town	925	11	15	Mende, Mandingo, Gola	Islam 75% Christanity 25%
4	Bangoma		Gold	Bangorma Town					
				Gonnelor Town					
				Bo-Maffa Town					
				Damballa Town					
				Ducorbogorma Town					
				Bong Village					
5	Camp Freeman and Timber Village		Diamond and Gold	Timber Village	1000	14	250	Gola, Mandingo	Islm 65% Christianity 35%
			Gold	Soso Camp					
			Gold	Fula Camp					
			Diamond and Gold	Camp Israel (Camp Freeman)	490	40	120	Gio, Mandingo	Islam 45% Christianity 55%

*Mining communities not accessible by 4WD or motorbike

Blank cells: Information not available at the time of research, Gray cells: Gold dominant community

✧ Bomi County

#	Mining Agency	Mining Zone	Predominant Mineral*	Mining Community	Estimated Population	Estimated Number of Artisanal Miners	Estimated Number of Diggers	Major Tribes	Major Religions and Their Estimated Ratio
1	SUEHN MECCA	Sackie Town Mining Zone	Diamond	Sackie Town	1,000+	12	100+	Gola, Mandingo	Islam, Christianity
			Diamond	Gbongor Village	800+	7	60	Gola	Islam, Christianity
			Diamond, Gold	Balikan Town	1000+	13	100+	Gola, Mandingo	Islam
			Diamond	Jahquaye Village	10	2	12	Gola,	Islam 100%
			Diamond	Thomas Camp	175	3	20	Gola, Vai	Islam
		Nyuadee Mining Zone	Diamond	Nyuadee	1000+	20	60+	Gola	Islam, Christianity
			Diamond	Yomo Town	700+	5	15	Gola	Islam, Christianity
			Diamond	Willie Town	900+	3	20	Gola	Islam, Christianity
			Diamond	Barma	500	7	19	Gola	Islam
			Diamond	Geveh Fancy	800	3	10	Gola	Islam
			Diamond	Mona Town	200	3	12	Gola	Islam
			Diamond	Gogehn Willie Town	1200	5	30	Gola	Islam 50%, Christianity 50%
			Diamond	Tarhr Town	400	2	20	Gola	Islam 45% Christianity 55%
			Diamond	Guoyee Town	1700	7	35	Gola	Islam 75% Christianity 25%
			Diamond	Jabajeh Town	1350	5	30	Gola	Islam 65% Christianity 35%
			Diamond	Weasuah Town	450	3	18	Gola	Islam 85% Christianity 15%
			Diamond	Gbai Town	230	6	30	Gola	Islam 70% Christianity 30%
		Big Geveh Mining Zone	Diamond	Big Geveh Town	1900	8	35	Gola, Kpelleh	Islam 80% Christianity 20%
			Diamond, Gold	Gondor town	1,000+	5	20	Gola, Kpelleh	Islam, Christianity
			Diamond	Quienee Town	175	3	15	Gola, Kpelleh	Islam 100%
			Diamond	Small Geveh Town	550	3	12	Gola, Kpelleh	Islam 90% Christianity 10%
			Diamond	George Town	250	2	20	Gola, Kpelleh	Islam 100%
			Diamond	Mecca Town	2500	5	25	Gola, Kpelleh	Islam 75% Christianity 25%
			Diamond	Madina Town	350	3	13	Gola, Kpelleh	Islam 85% Christianity 15%
			Diamond	Sumo Town	550	3	15	Gola, Kpelleh	Islam 95% Christianity 5%
			Diamond	Fefeh Town	1050	4	16	Gola, Kpelleh	Islam 70% Christianity 30%
		Gbah Mining Zone	Diamond	Gbah	500	7	15	Gola	Islam, Christianity
			Diamond	Gray Village	23	2	12	Vai	Islam
			Gold	Golodee Village	950	3	20	Gola, Vai	Islam 95% Christianity 5%
			Diamond	Motor Village					
			Diamond	D-8 New Camp					
			Diamond	Berville Village	175	2	10	Gola, Vai	Islam 100%
			Diamond	Zoyee Town	650	3	7	Gola, Vai	
			Diamond	Malaman Town	1500	4	30	Gola	Islam 75% Christianity 25%
			Diamond	Johnson Farm	900	2	15	Gola, Vai	Islam 75% Christianity 25%

Blank cells: Information not available at the time of research, Gray cells: Gold dominant community

✧ Margibi County

#	Mining Agency	Mining Zone	Predominant Mineral*	Mining Community	Estimated Population	Estimated Number of Artisanal Miners	Estimated Number of Diggers	Major Tribes	Major Religions and Their Estimated Ratio
1	Kakata		Diamond	Gbofelah	2,000	0	0	Kpelleh	Christianity
			Diamond	Shermah Farm	1,800	0	0	Kpelleh	Christianity
			Diamond	Dukuly Farm	1,000	0	0	Kpelleh, Mandingo	Christianity, Islam
			Diamond	Benlah	2,500	0	0	Kpelleh, Bassa	Christianity
			Diamond	Gneeganbo	700	3	5	Kpelleh, Bassa	Christianity
			Diamond	Tomah	1,000	0	0	Kpelleh	Christianity
			Diamond	Zonkawokolly- Ta	1,500	0	0	Kpelleh	Christianity
			Diamond	Gbenyan-kpelley	900	0	0	Kpelleh	Christianity
			Diamond	Kpelleh Jacob town	500	2	9	Kpelleh	Christianity, Islam
			Diamond	AB Anderson Farm	300	1	2	Kpelleh	Christianity
			Diamond	Goo town	300	2	7	Bassa	Christianity
			Diamond	Francis Lewis Farm	50	1	13	Bassa, Kpelleh	Christianity
			Diamond	Wolala town	500	1	13	Kpelleh, Vai	Islam

Blank cells: Information not available at the time of research, Gray cells: Gold dominant community

✧ Montserrado County

#	Mining Agency	Mining Zone	Predominant Mineral*	Mining Community	Estimated Population	Estimated Number of Artisanal Miners	Estimated Number of Diggers	Major Tribes	Major Religions and Their Estimated Ratio
1	Bentol		Gold	Gbonorkalai	15	1	3	Kpelleh	Christianity 100%
				Pension town	80	10	45	Gio, Kpelleh	Christianity 95% Islam 5%
				Malamue	100	2	10	Kpelleh	Christianity 100%

Blank cells: Information not available at the time of research, Gray cells: Gold dominant community

Annex2: Questions to miners and their answers

Figure 1: Sex of interviewees (n=18)

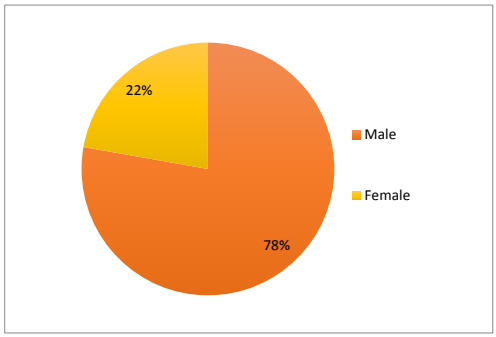


Figure 2: Age of interviewees (n=18)

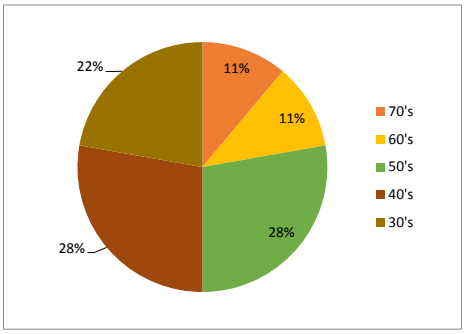


Figure 3: Religion (n=18)

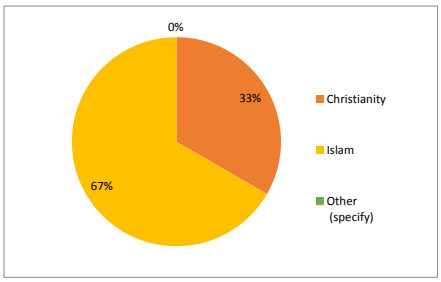


Figure 4: The number of years you have lived in this mining community (n=18)

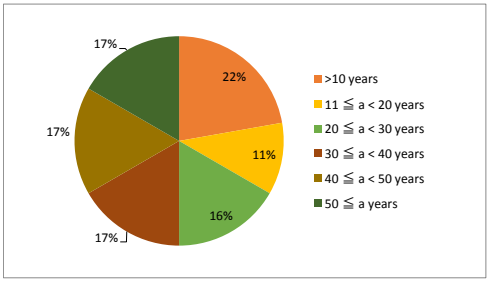


Figure 5: The number of years you have mined diamonds (n=18)

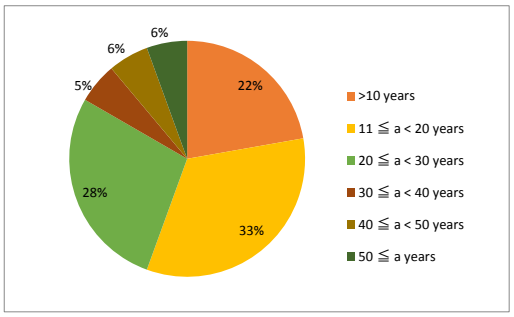


Figure 6: Education attainment (n=18)

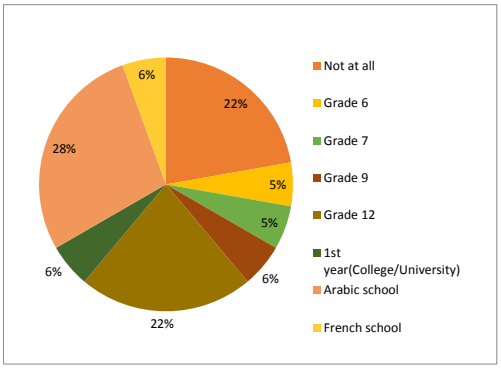


Figure 7: Do you read? (n=18)

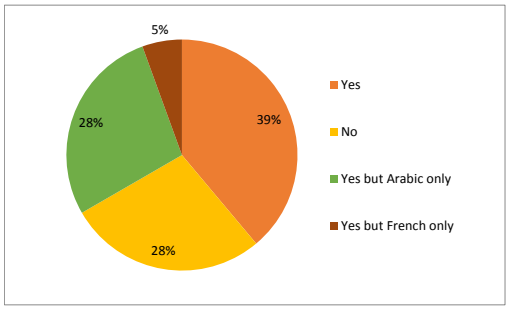


Figure 8: Do you write? (n=18)

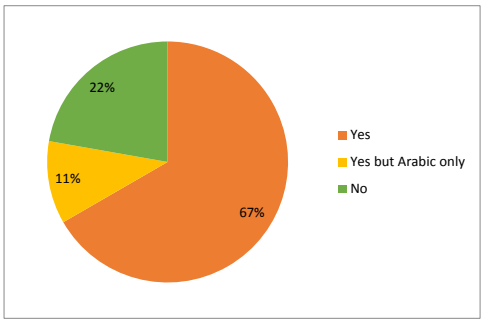


Figure 9: How well do you write?

(Multiple answers allowed. n=17)

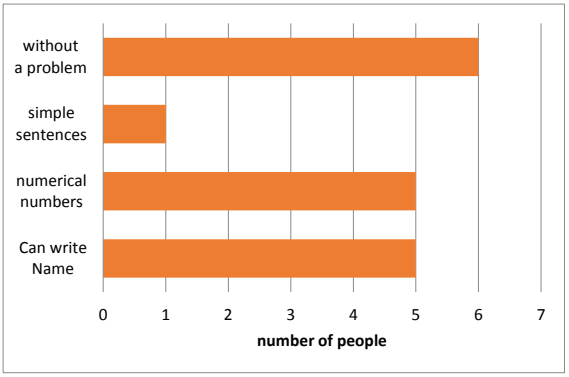


Figure 10: Do you calculate? (n=18)

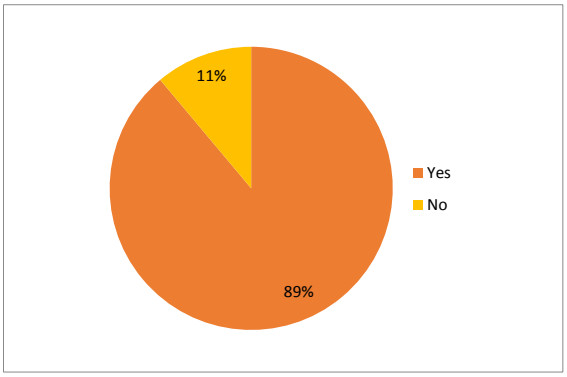


Figure 11: What calculation ca you do?

(Multiple answers allowed. n=51)

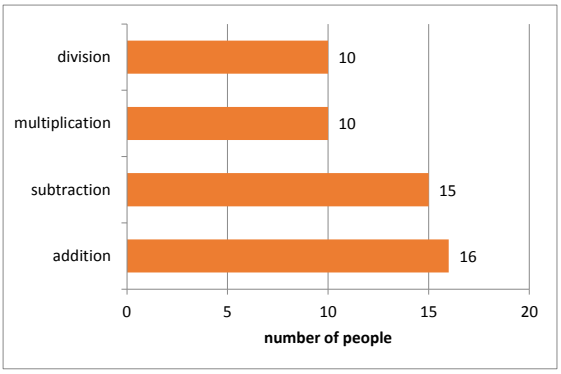


Figure 12: Are you a head of the household? (n=18)

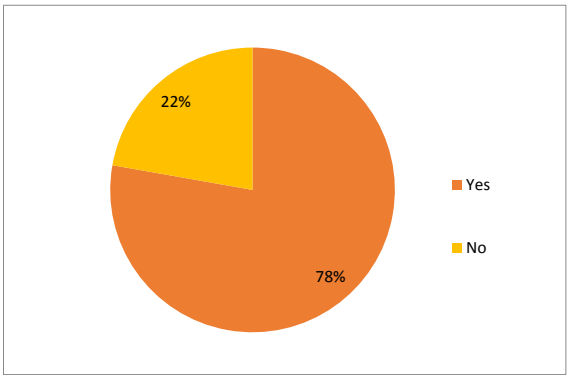


Figure 13: Is mining diamonds your only source of income? (n=18)

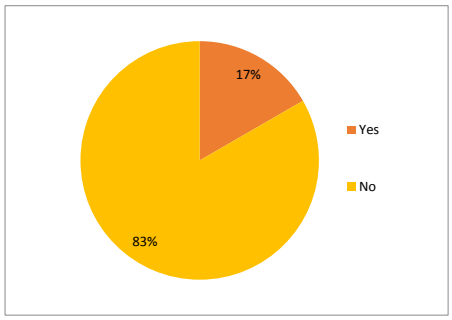


Figure 14: Annual Income (USD) (n=18)

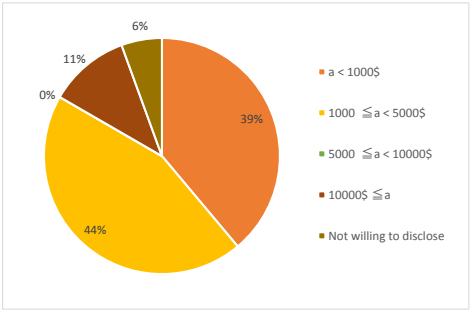


Figure 15: Do you have savings? (n=18)

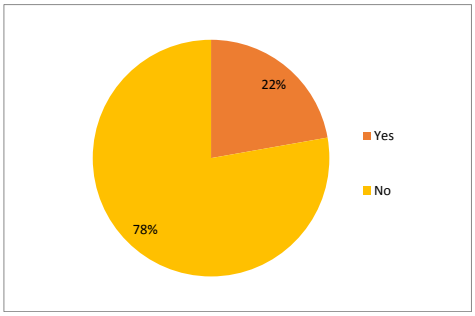


Figure 16: Profit Sharing (n=18)

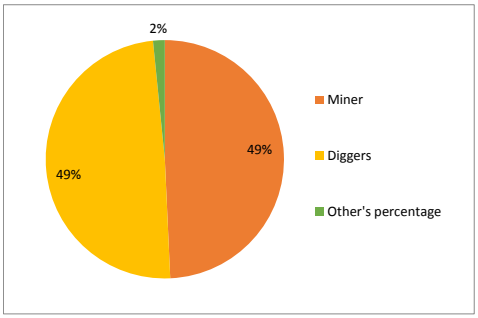


Figure 17: Days of week you work (Multiple answers allowed. n=107)

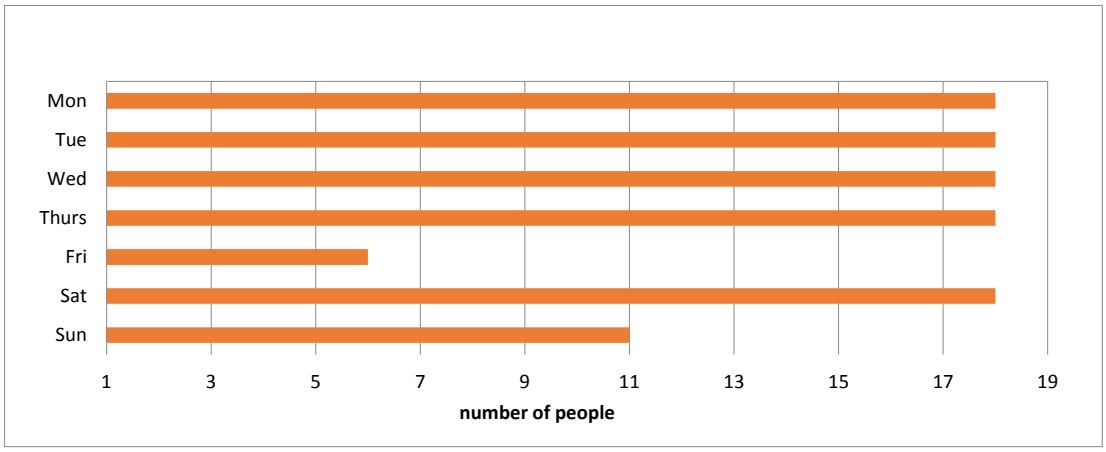
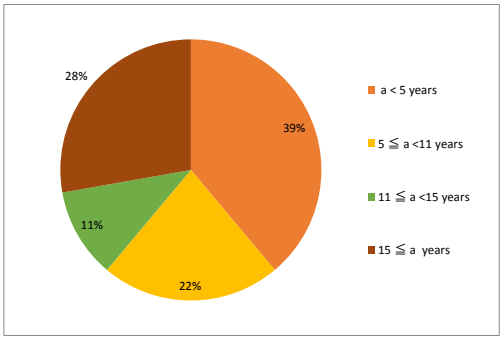


Figure 18: The number of years you have mined in this mining community (n=18)

Figure 19: What kind of mining license do you have? (n=18)



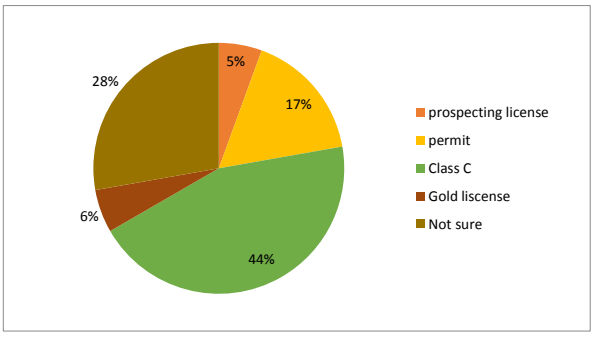
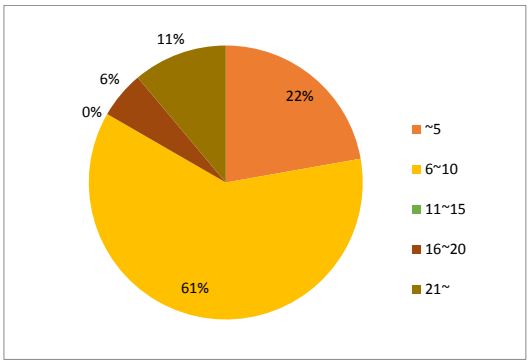


Figure 20: The number of diggers you have (n=18)

Figure 21: Do you mine diamonds by yourself (n=18)



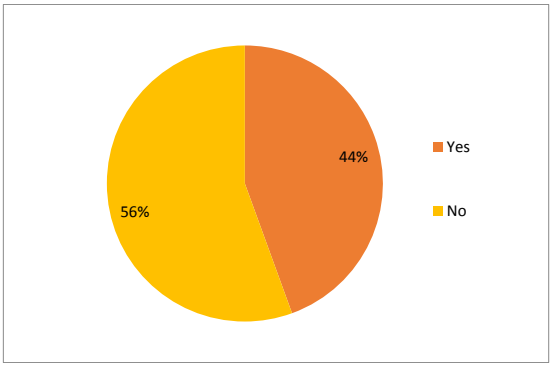
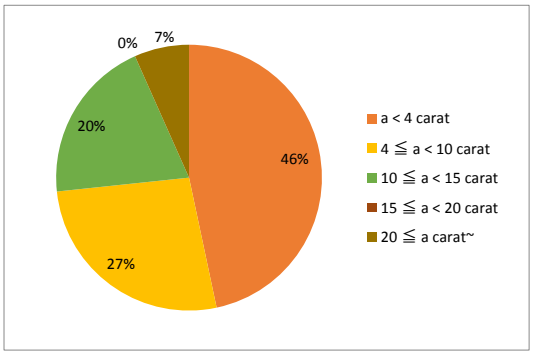


Figure 22: Total volume of diamonds you found in the past year (carat) (n=18)

Figure 23: Total value of diamonds you found in the past year (USD) (n=18)



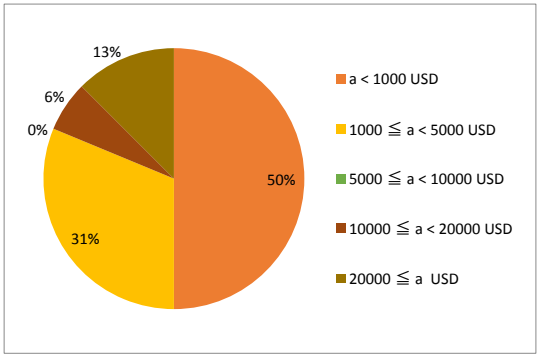


Figure 24: Do you give diggers a daily wage? (n=18)

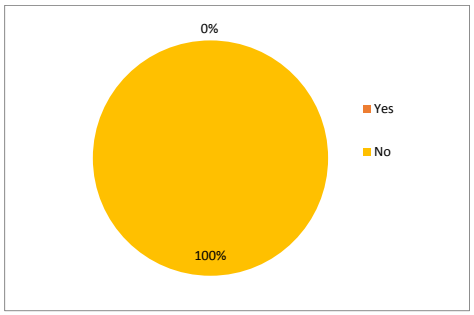


Figure 25: The number of times per day you feed your diggers (n=18)

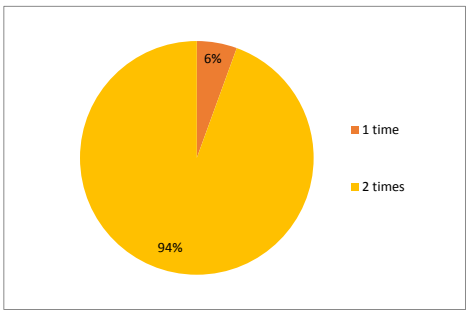


Figure 26: Mining related expenses per month (n=18)

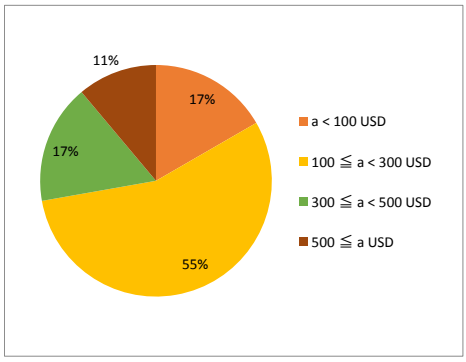


Figure 27: Who pays the mining related expenses? (n=18)

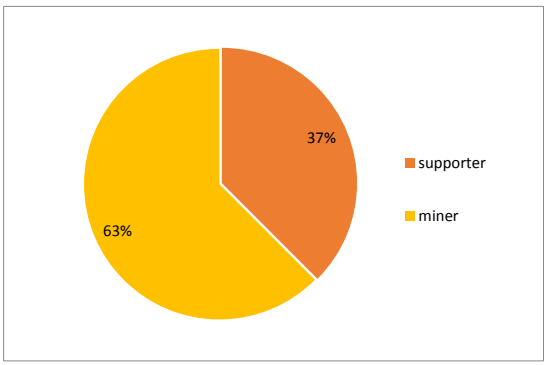


Figure 28: Do you know what Kimberley Process is? (n=18)

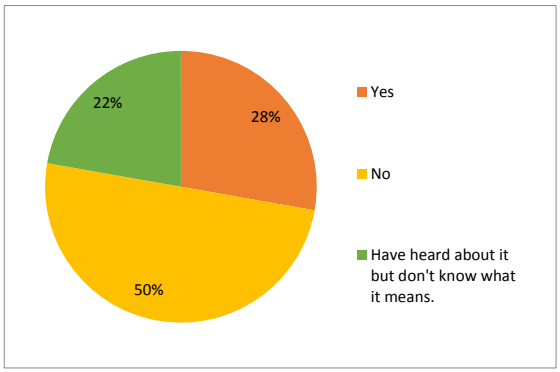


Figure 29: Have you heard of the government's idea to organize miners/diggers into cooperatives? (n=18)

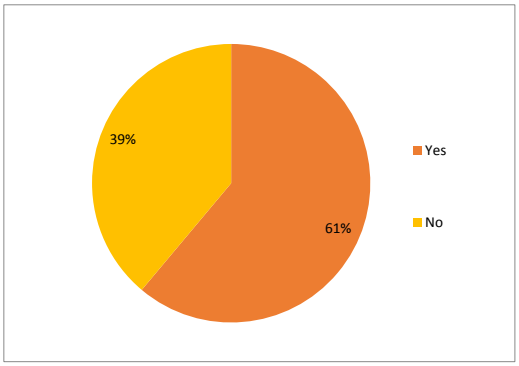


Figure 30: Issues at diamond mines in this mining community (Multiple answers allowed. n=180)

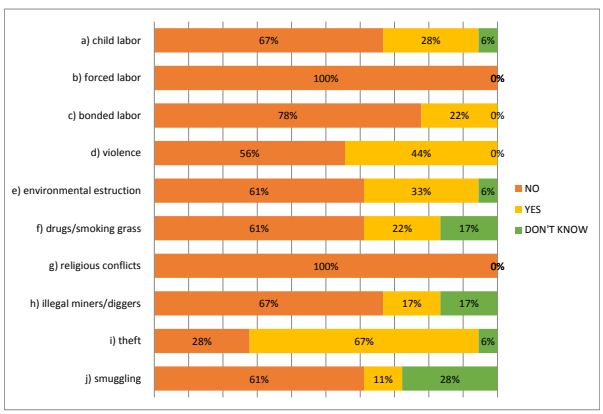


Figure 31: Do you know what a cooperative is? (n=18)

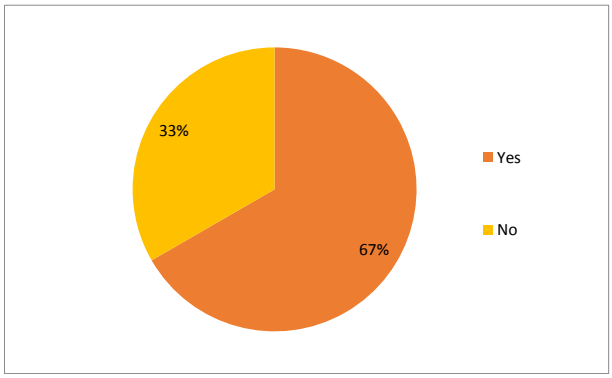


Figure 32: Is there any existing group in this mining community which conducts activities proactively? (n=18)

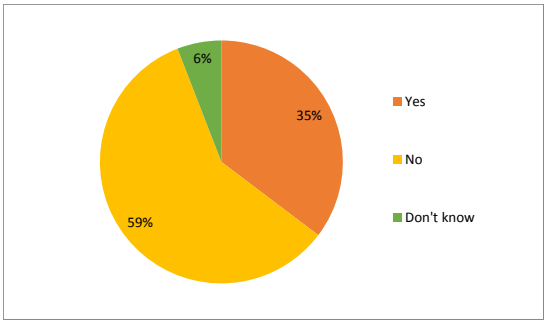


Figure 33: Is there mining community's self-initiated activity/project to improve the living conditions? (n=18)

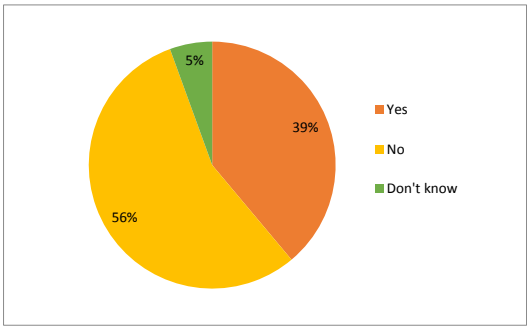
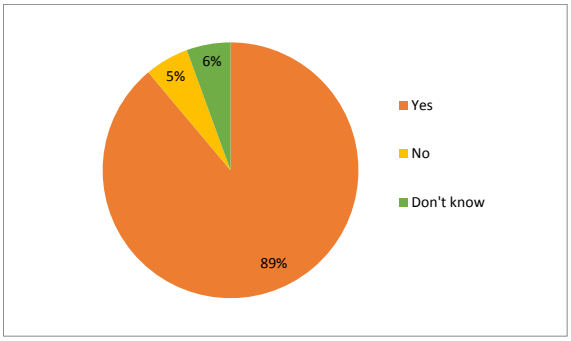


Figure 34: Do you think getting miners/diggers organized into cooperatives beneficial? (n=18)



Annex 3: Questions to diggers and their answers

Figure 1: Sex of interviewees (n=17)

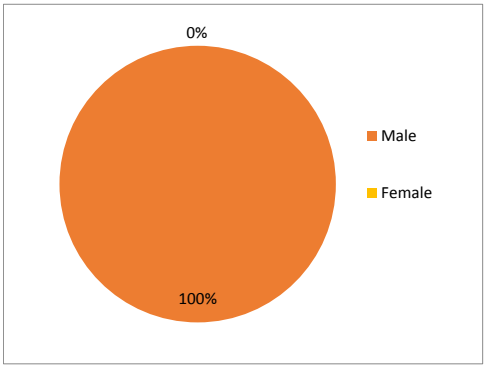


Figure 2: Age of interviewees (n=17)

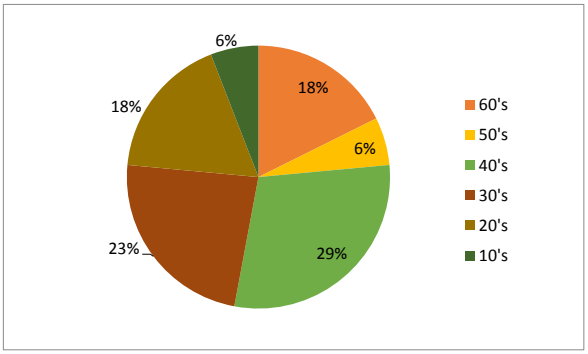


Figure 3: Religion (n=17)

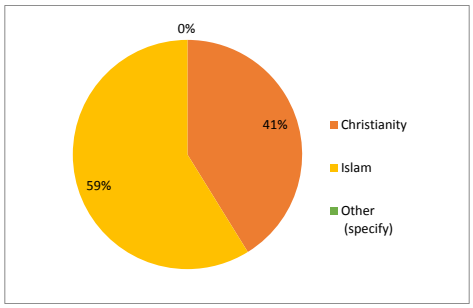


Figure 4: The number of years you have lived in this mining community (n=17)

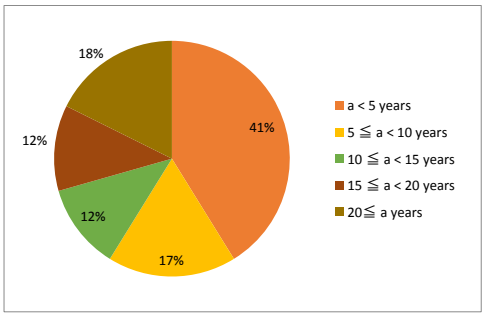


Figure 5: The number of years you have mined diamonds (n=17)

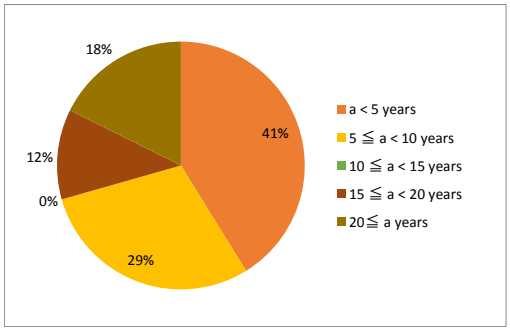


Figure 6: The number of times you moved after starting diamond mining (n=17)

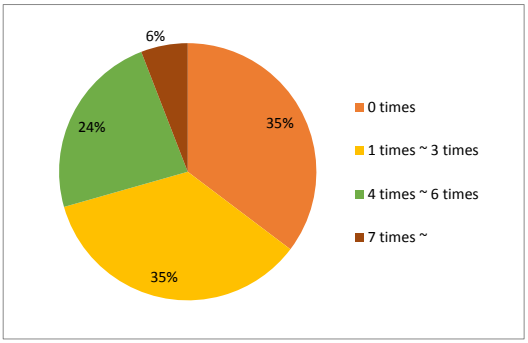


Figure 7: Education attainment (n=17)

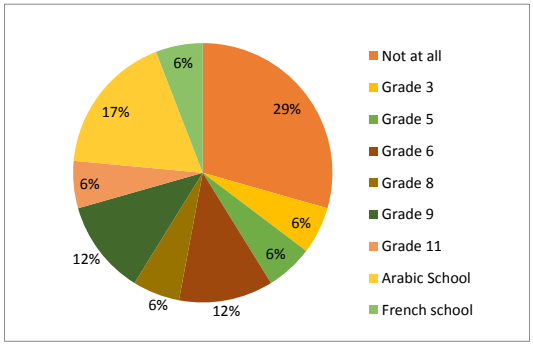


Figure 8: Do you read? (n=17)

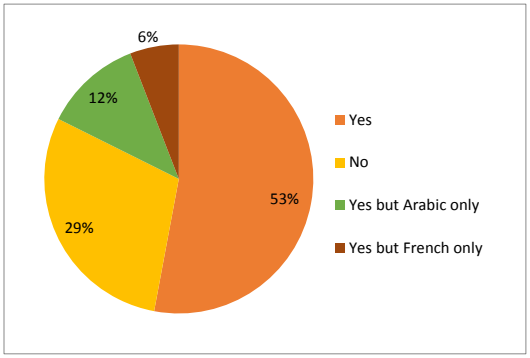


Figure 9: Do you write? (n=17)

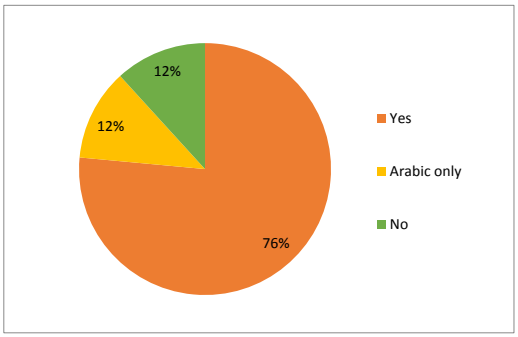


Figure 10: How well do you write?
(Multiple answers allowed, n=25)

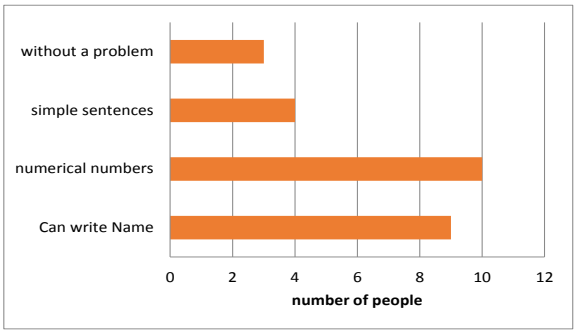


Figure 11: Do you calculate? (n=17)

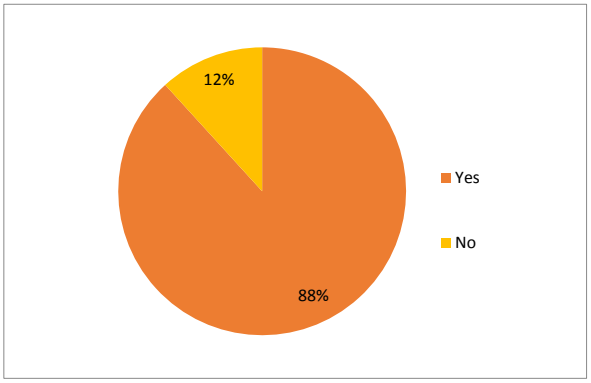


Figure 12: How well do you calculate?
(Multiple answers allowed, n=40)

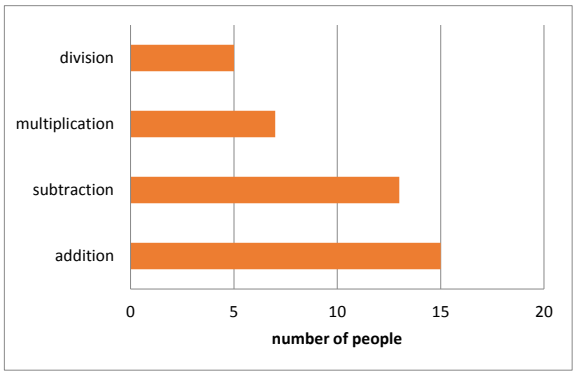


Figure 13: Are you a head of the household?
(n=17)

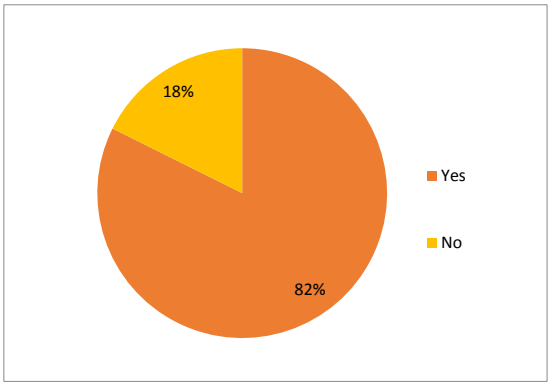


Figure 14: The number of family members you support
(n=17)

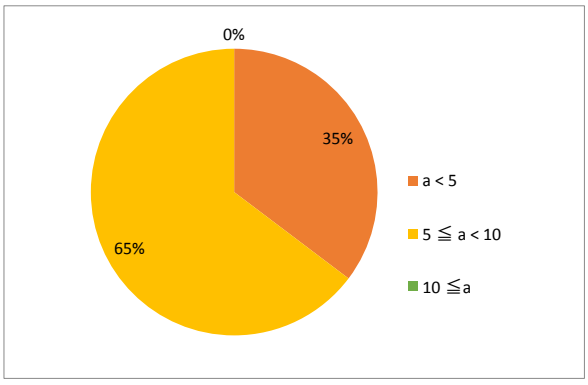


Figure 15: The number of non-family members you
support (n=17)

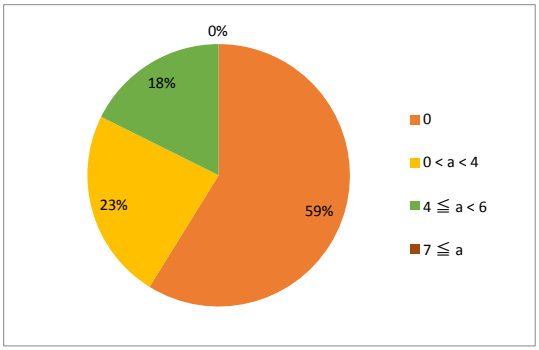


Figure 16: Is mining diamonds your only source of
income? (n=17)

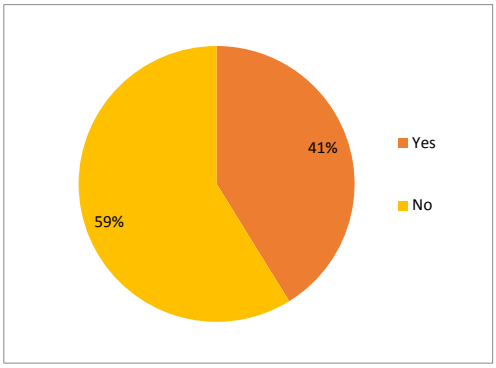


Figure 17: Annual Income (USD) (n=17)

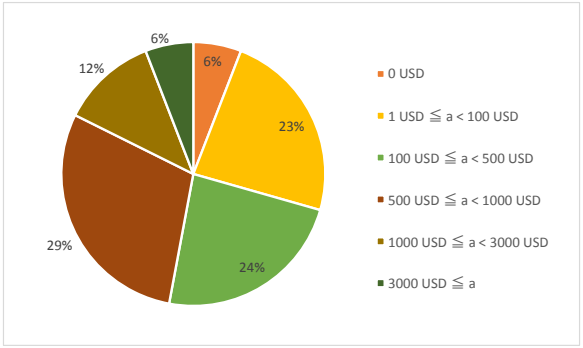


Figure 18: Do you have savings? (n=17)

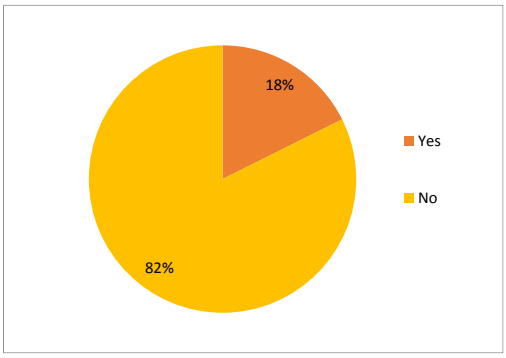


Figure 19: When you have a hard time to make a living, who do you ask for financial help? (n=17)

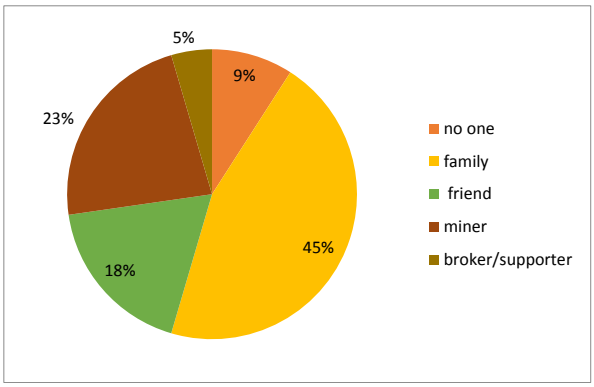


Figure 20: Who lends you money when you have a hard time? (n=17)

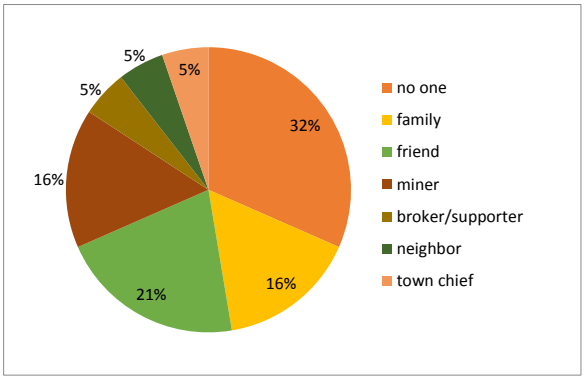
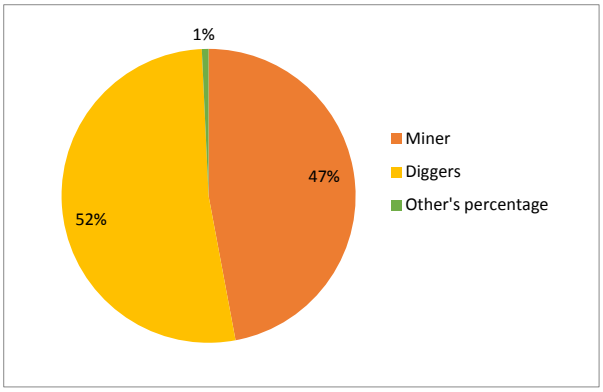


Figure 21: Profit Sharing (n=17)

Figure 22: Days of week you work (Multiple answers allowed, n=99)



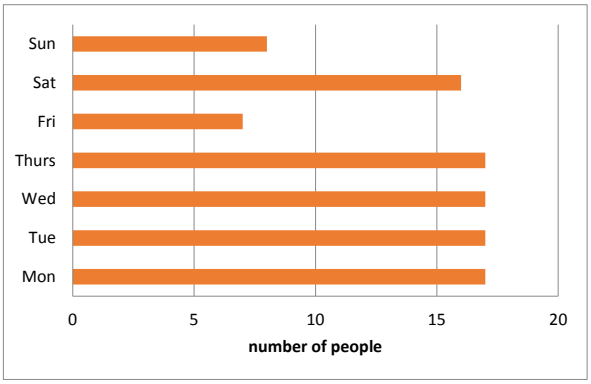
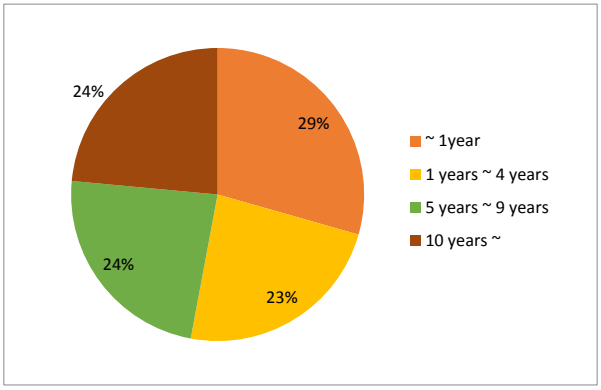


Figure 23: The number of years you have mined in this mining community (n=17)

Figure 24: How many years have you worked for the current employer? (n=17)



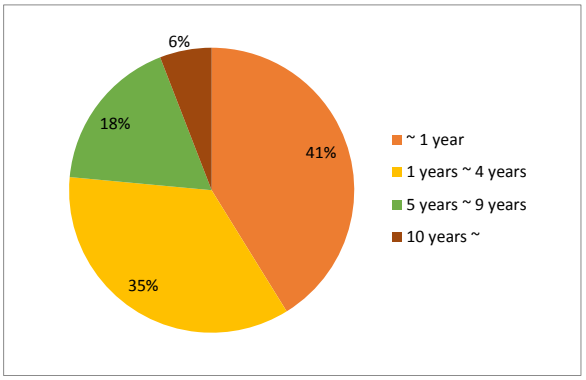


Figure 25: Total volume of diamonds you found in the past year (carat) (n=17)

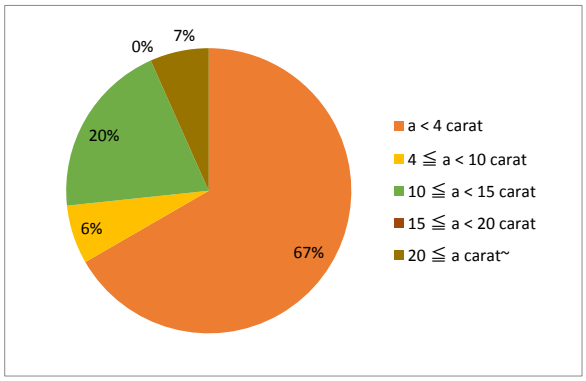


Figure 26: Total value of diamonds you found in the past year (USD) (n=17)

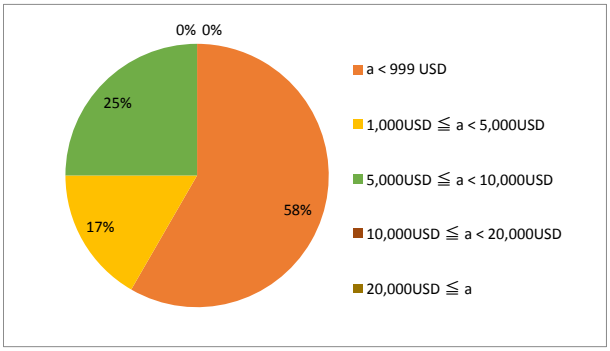


Figure 27: Do you get paid per day? (n=17)

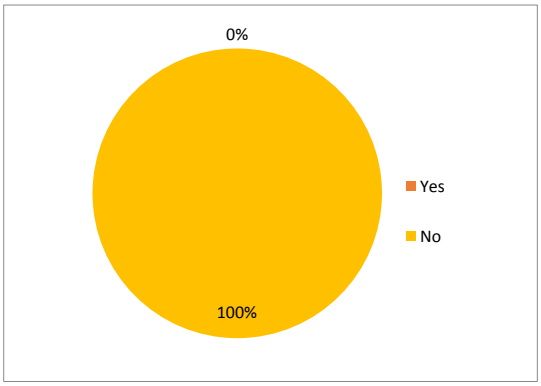


Figure 28: How many times a day does your employer feed you? (n=17)

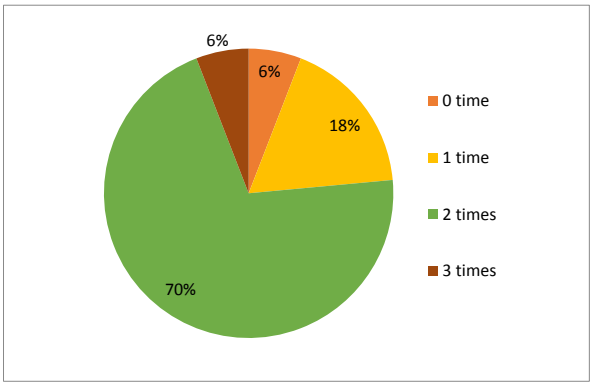


Figure 29: Do you know what Kimberley Process is? (n=17)

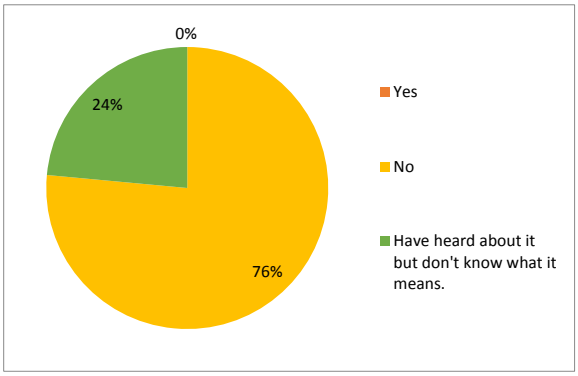


Figure 30: Have you heard of the government's idea to organize miners/diggers into cooperatives? (n=17)

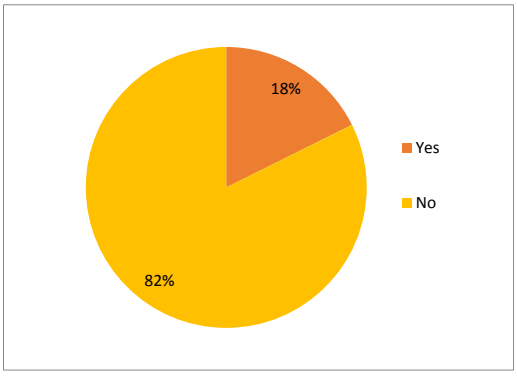


Figure 31: Do you know what a cooperative is? (n=17)

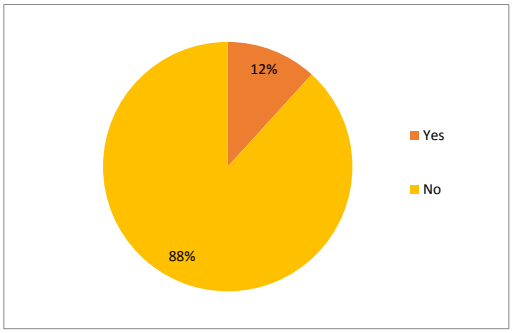


Figure 32: Are there issues at diamond mines in this mining community? (Multiple answers allowed, n=170)

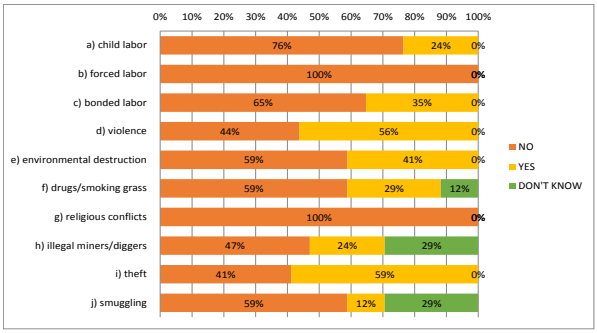


Figure 33: Are artisanal diamond mining stakeholders (mining agent, mining chairman, patrol man, miners, diggers) are getting along well? (n=17)

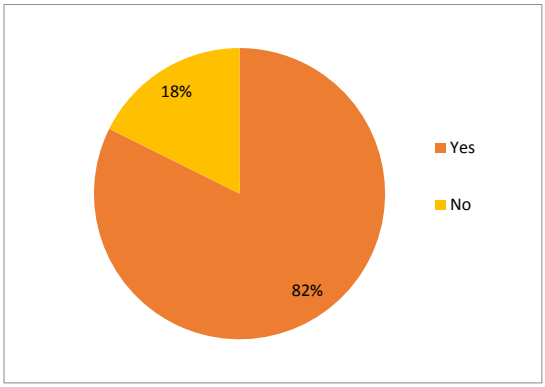


Figure 34: Is there any existing group in the community which conducts activities proactively? (n=17)

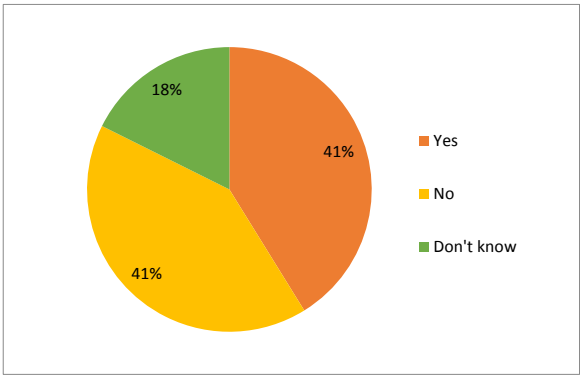


Figure 35: Is there a community's self-initiated activity/project to improve the living conditions? (n=17)

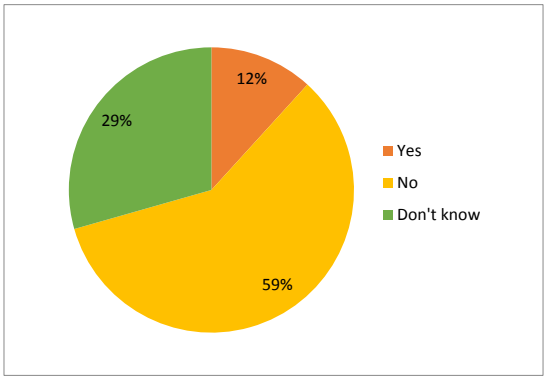
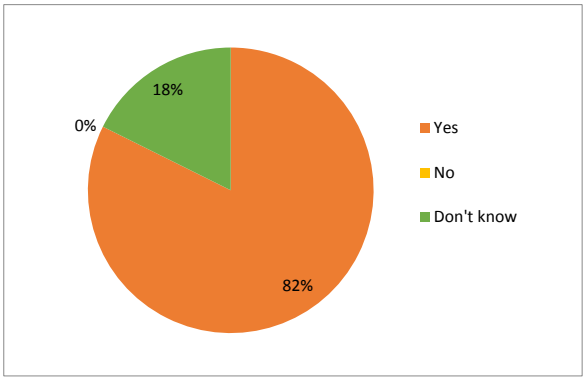


Figure 36: Do you think getting miners/diggers organized into cooperatives beneficial? (n=17)



Annex4: Questions to miners' and diggers' family members and other community members

Figure1 ：Characteristic of interviewees (n=35)

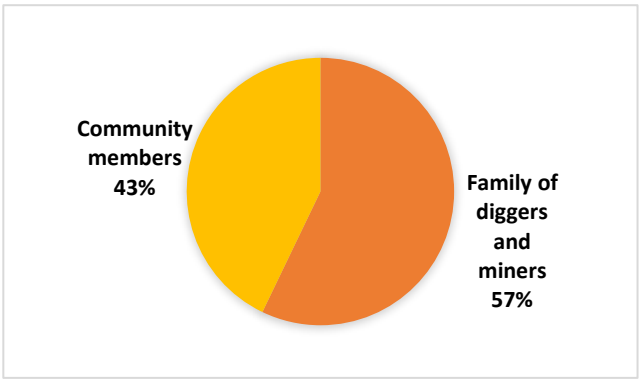


Figure2: Interviewee's relationship with household head (n=35)

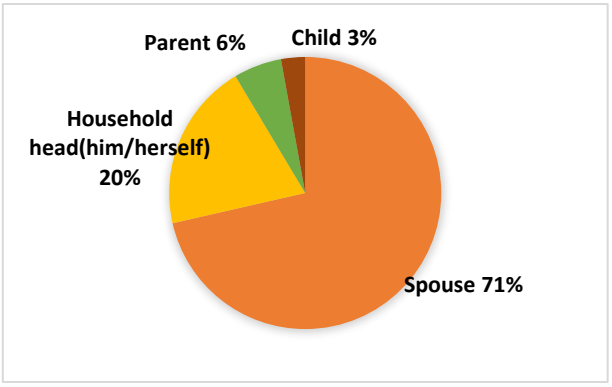


Figure3: Sex of survey participants (n=35: interviewees, n=32: household head/spouse)

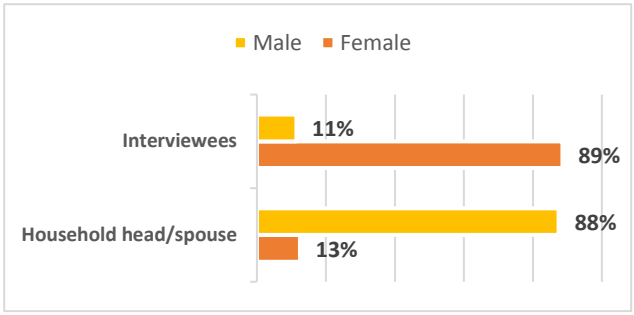


Figure4 ：Age of interviewees (n=35)

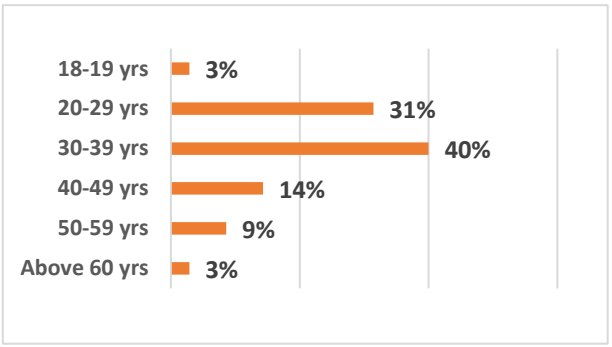


Figure5 ：Ethnic group of interviewees (n=35)

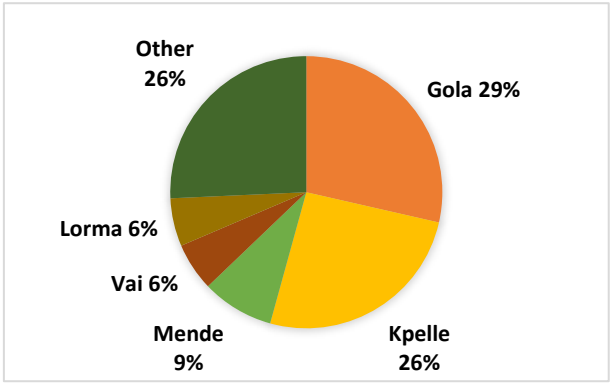


Figure6 ：Religion of interviewees (n=35)

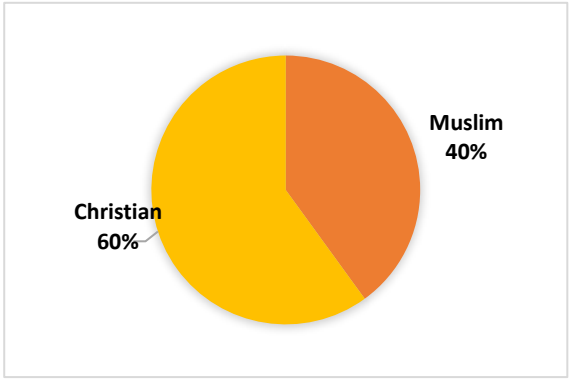


Figure7 ：Age of household head/spouse (n=32)

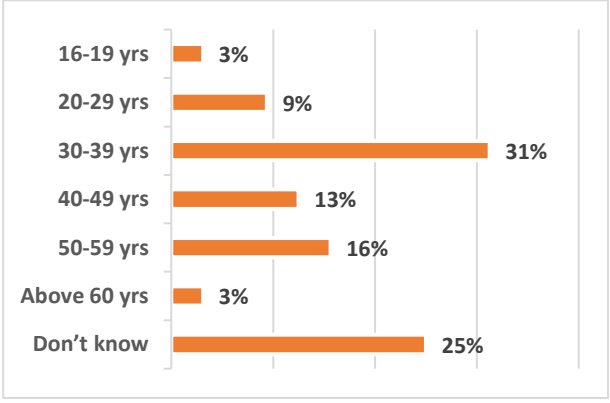


Figure8 ：Ethnic group of household head/spouse (n=32)

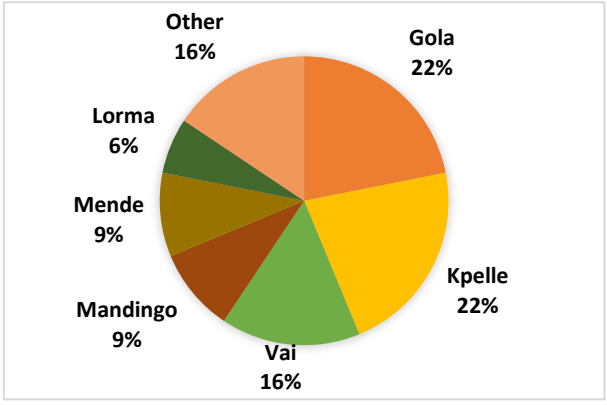


Figure9：Religion of household head/spouse (n =32)

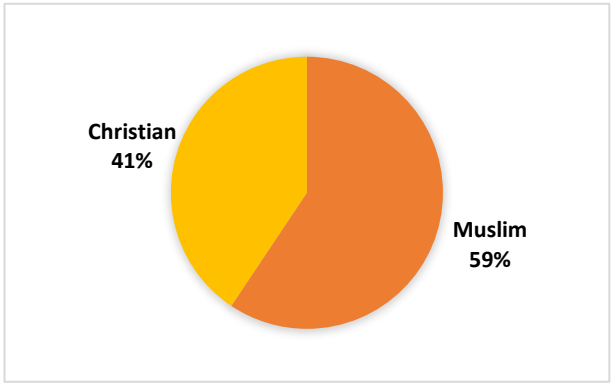


Figure10：Hometown of interviewees (n=35)

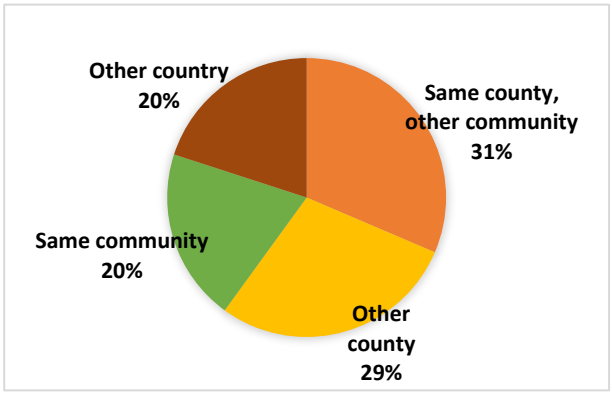


Figure11：Length of stay in the current address (n=35)

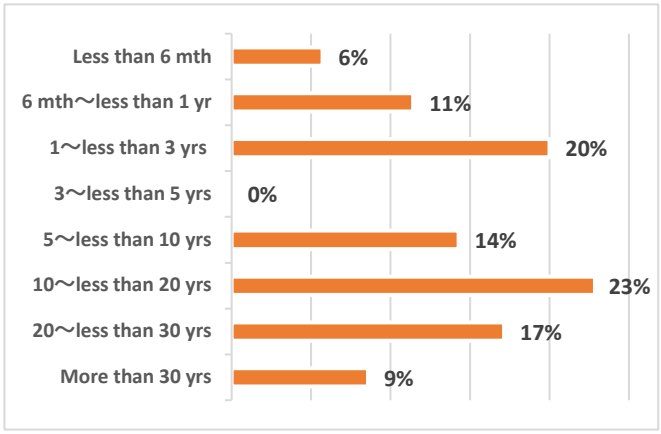


Figure12：Previous residence of interviewees (n =26)

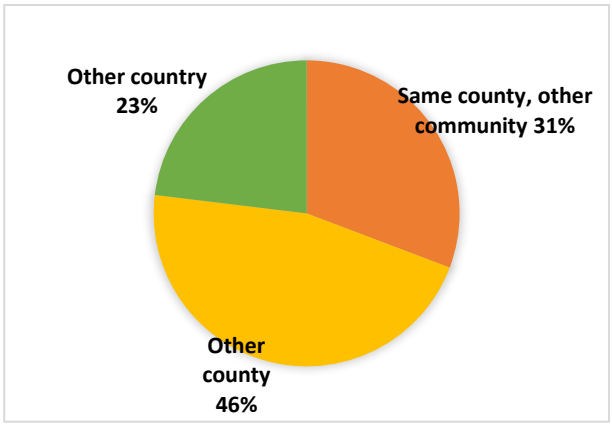
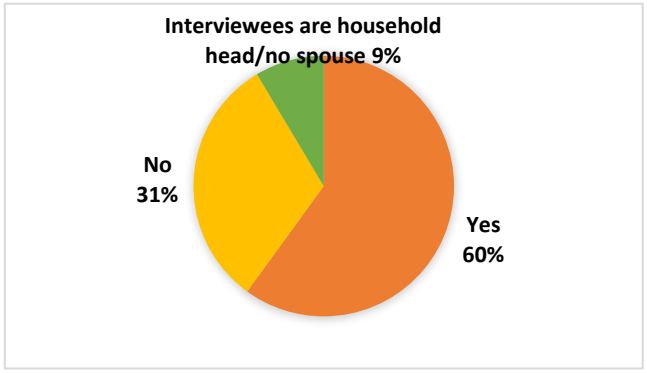


Figure13：Cohabitation with household head/spouse (n=35)

Figure14：Residence of household head/spouse (n =11)



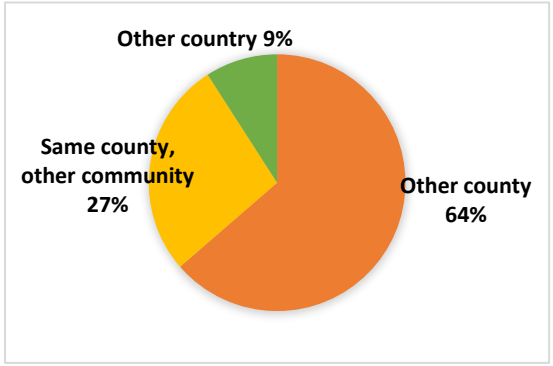


Figure15 ：Length of living separately with household head/spouse (n=10)

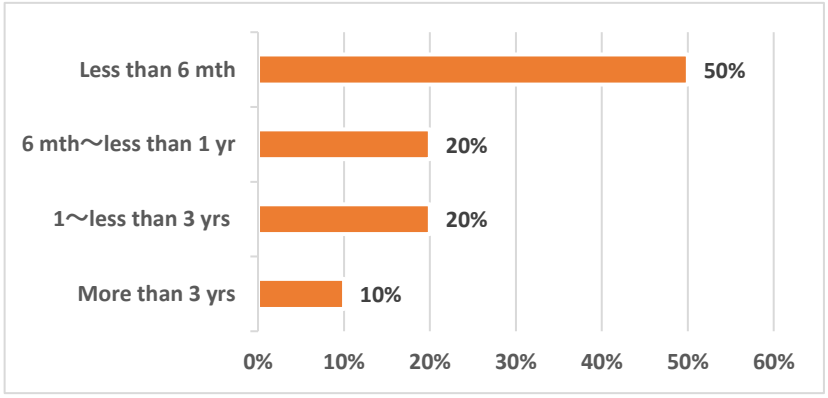


Figure16：Educational background of survey participants

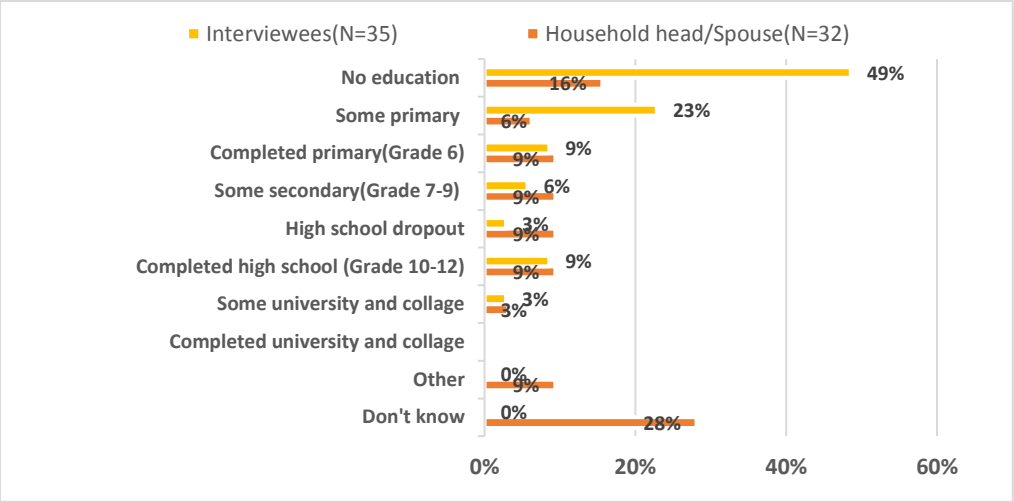


Figure17：Ability to read English by survey participants

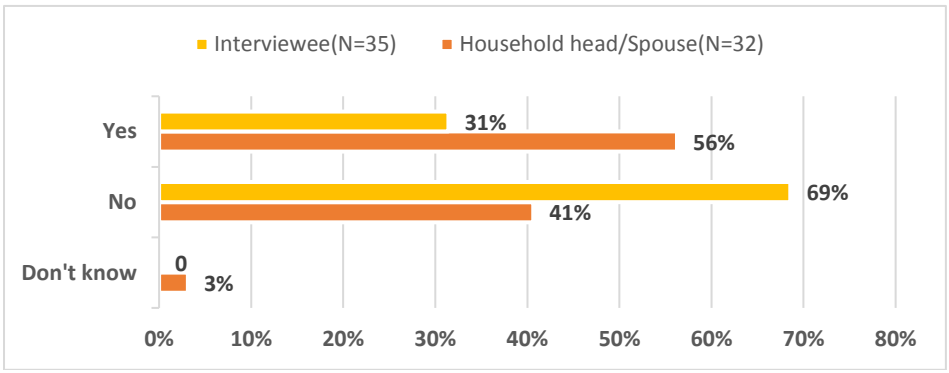


Figure18：Ability to write English by survey participants

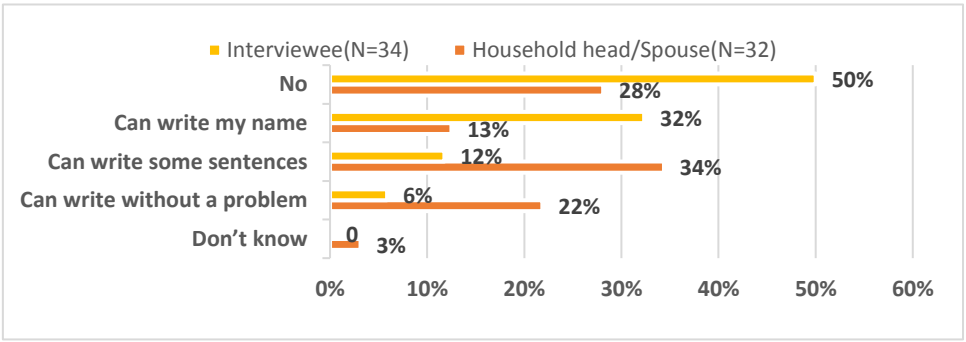


Figure19：Ability to conduct simple calculations by survey participants

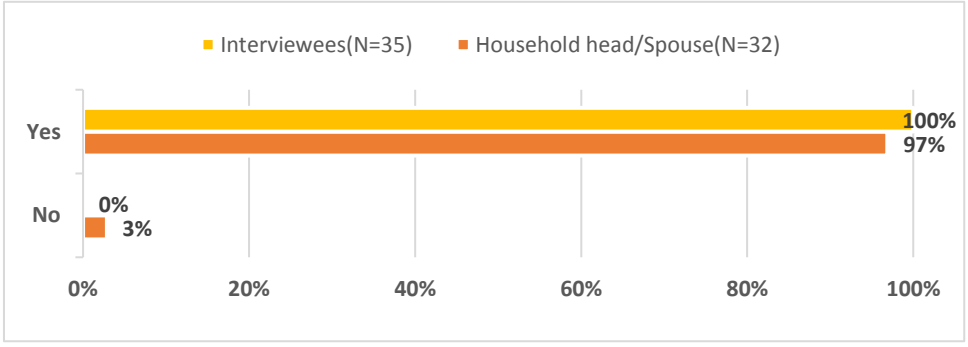


Figure20：Occupations of Interviewees
(Multiple ans. allowed, n=49)

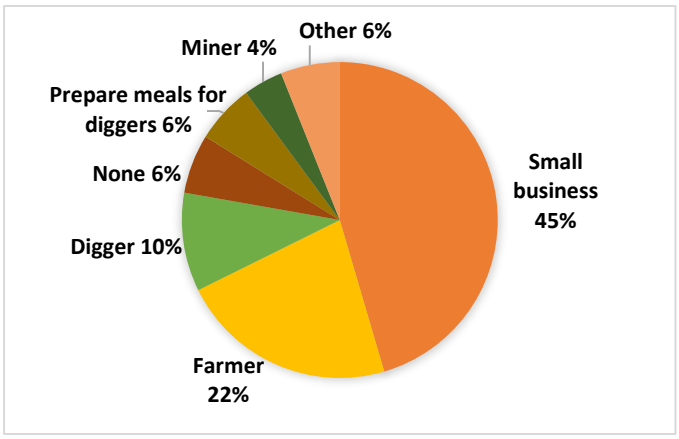


Figure21： Occupations of household head/spouse
(Multiple ans. allowed, n=42)

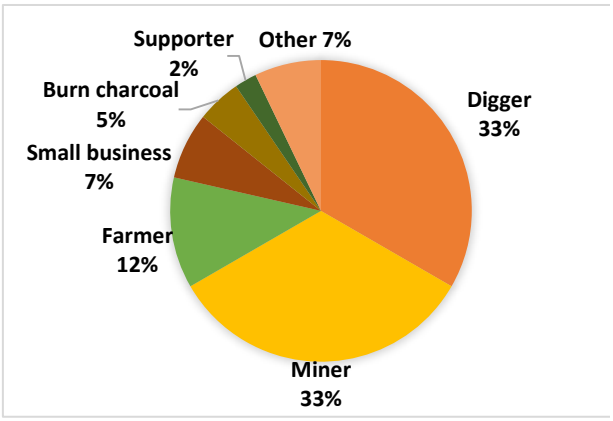
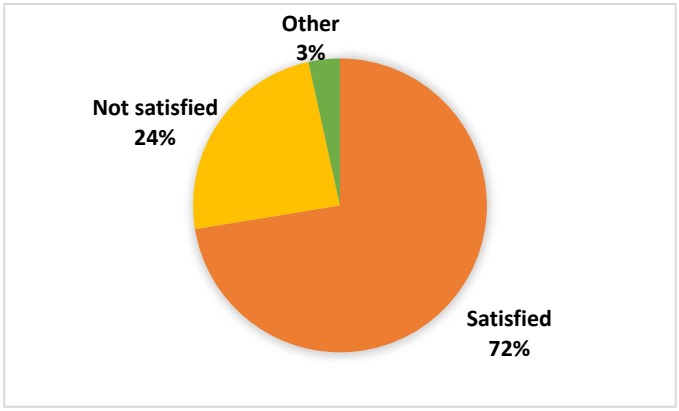


Figure22：Interviewees' perception towards the occupation of household head/spouse (n=29)



Agriculture

Figure23：Type of crops growing (Multiple ans. allowed, n=71)

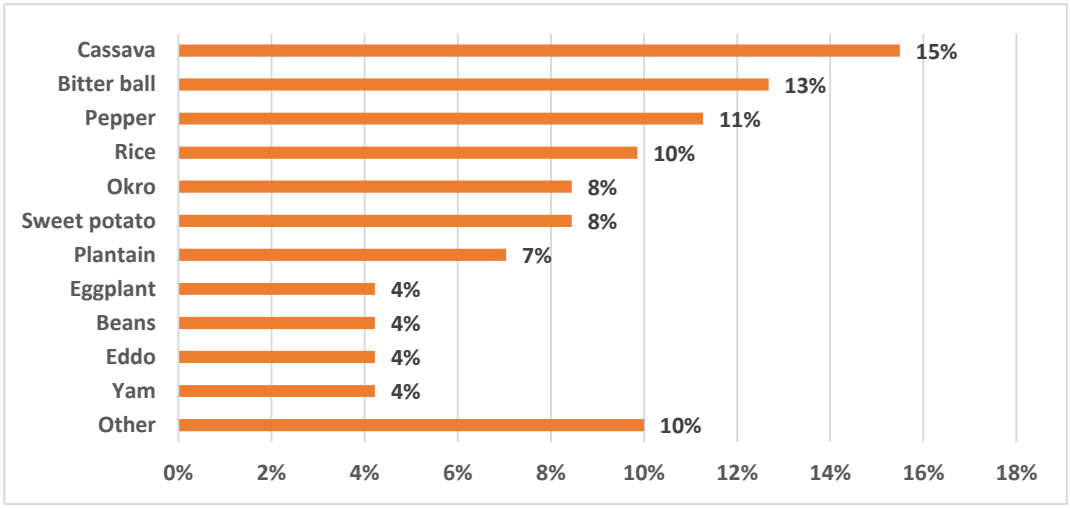


Figure24：Sales of crops (n=14)

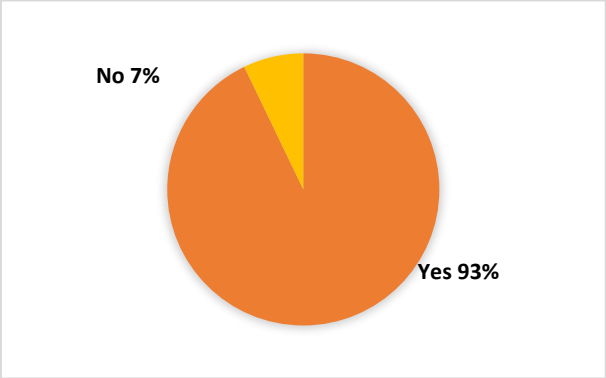


Figure25：Owner of the farm field (n=14)

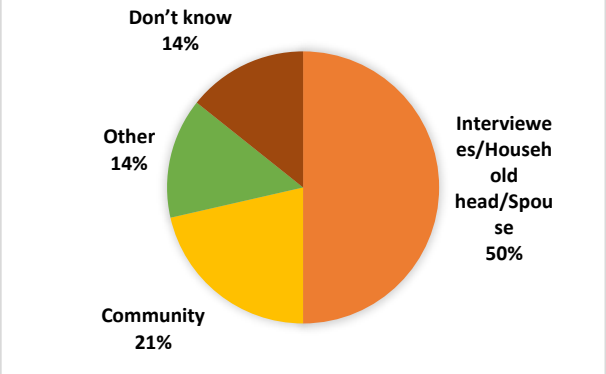


Figure26：Rent of the farm field (n=14)

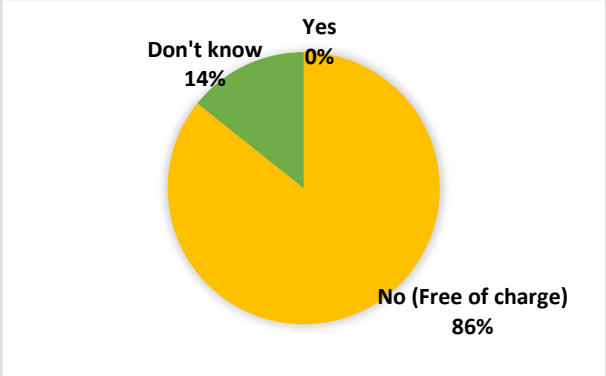


Figure27：Number of people in the household (n=34)

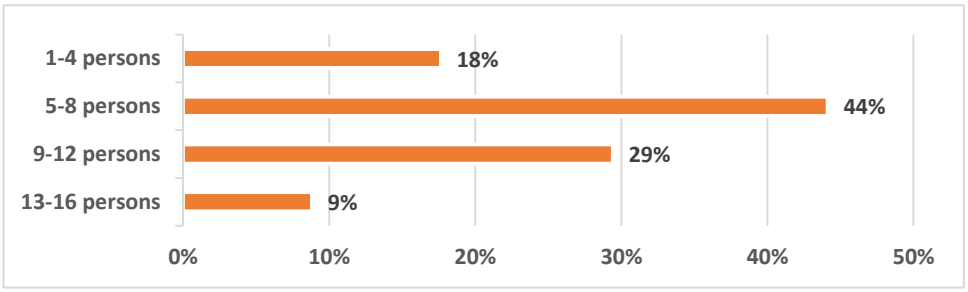


Figure28：Number of meals per day (n=35)

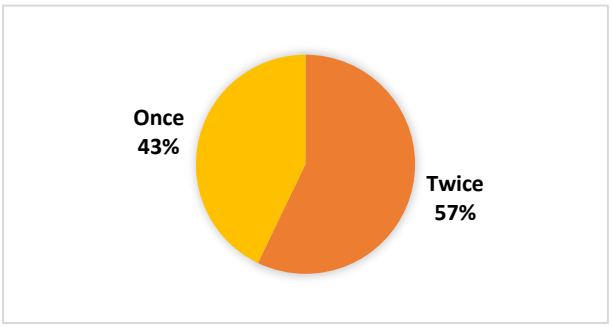


Figure29：Persons who prepare meals (Relationship with household head) (n=30)

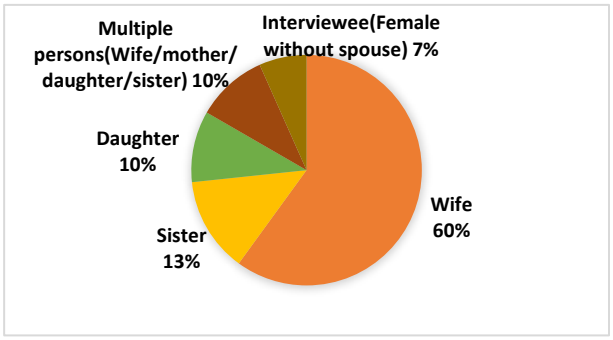


Figure30：Number of dishes to prepare for a meal (n =30)

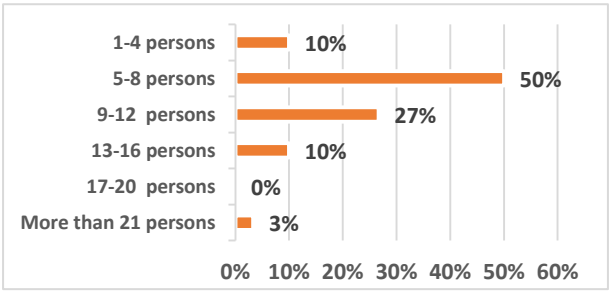


Figure31：Staple food (n=35)

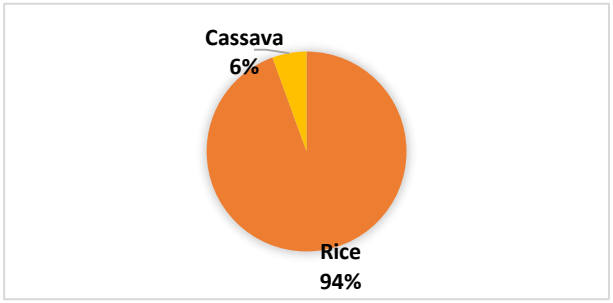


Figure32：Other foods to eat frequently (Multiple ans. allowed, n=110)

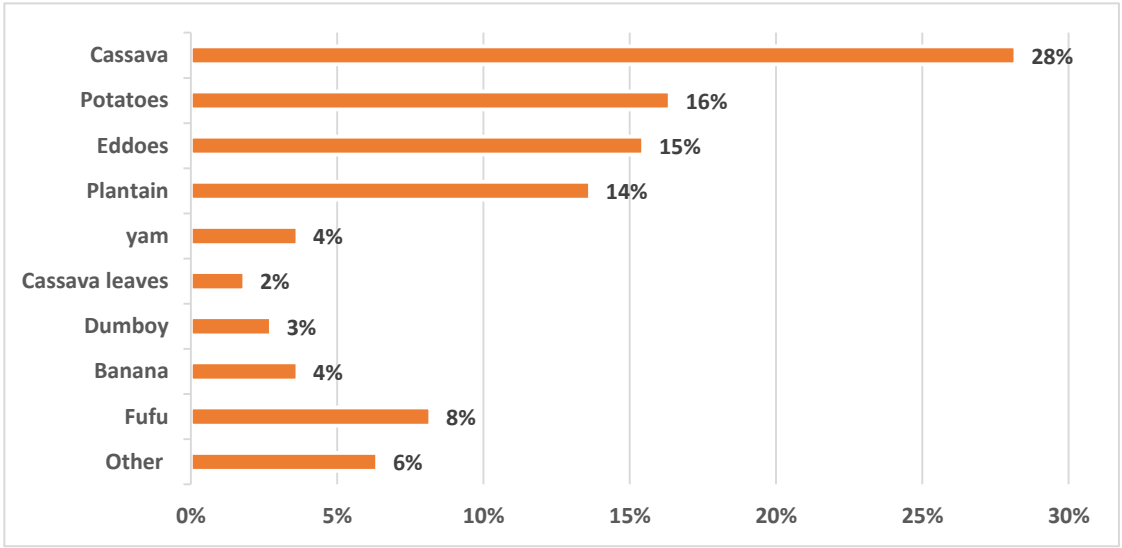


Figure33：Place to get foods
(Multiple ans. allowed, n=63)

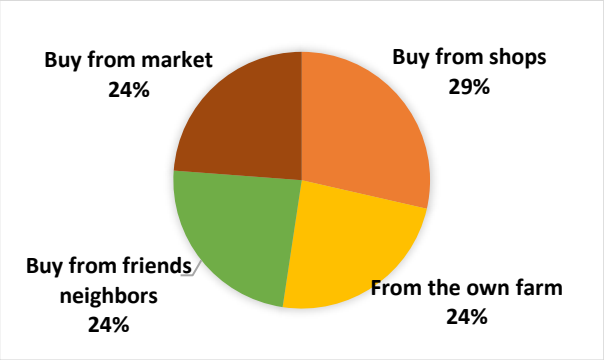


Figure34：Means of transportation to get foods
(Multiple ans. allowed, n=48)

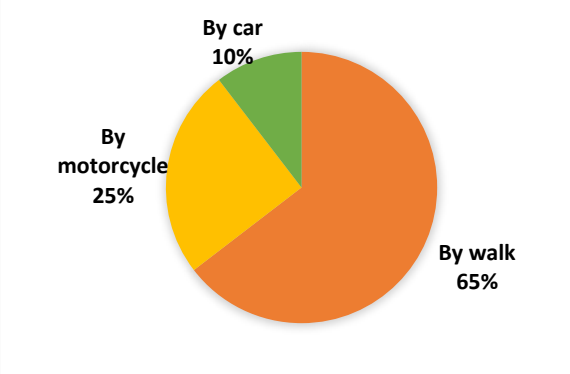


Figure35：Times to get foods (n=35)

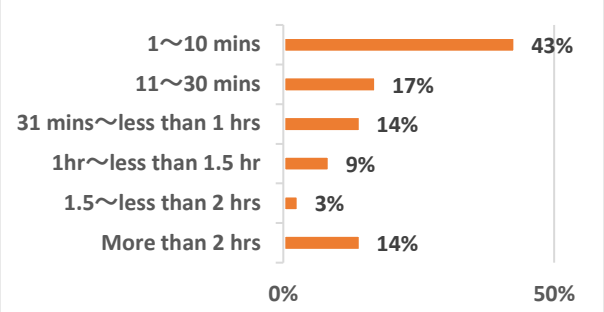


Figure36: Existence of a child/children who go to school in the household (n=35)

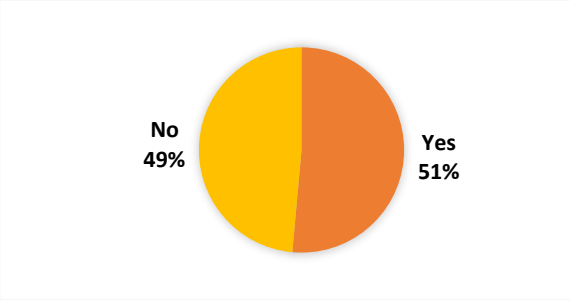


Figure37：Means of transportation to go to school (n=20)

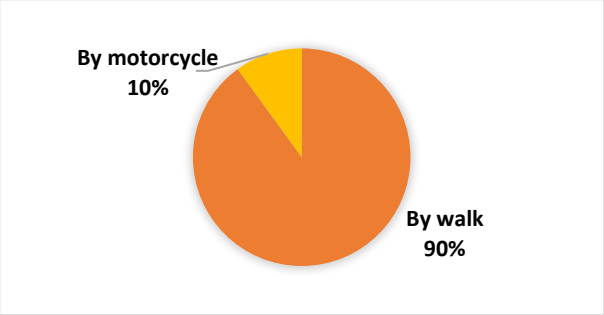


Figure38：Times to go to school (n=18)

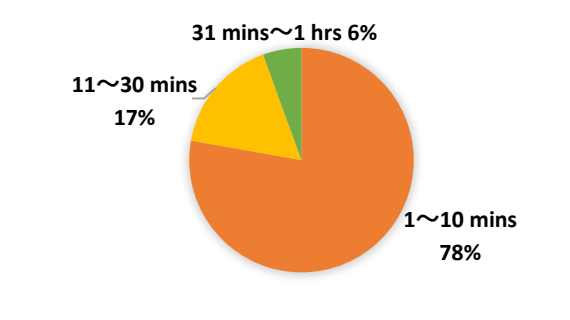


Figure39：Health status of household members in the past twelve months (Multiple ans. allowed, n=64)

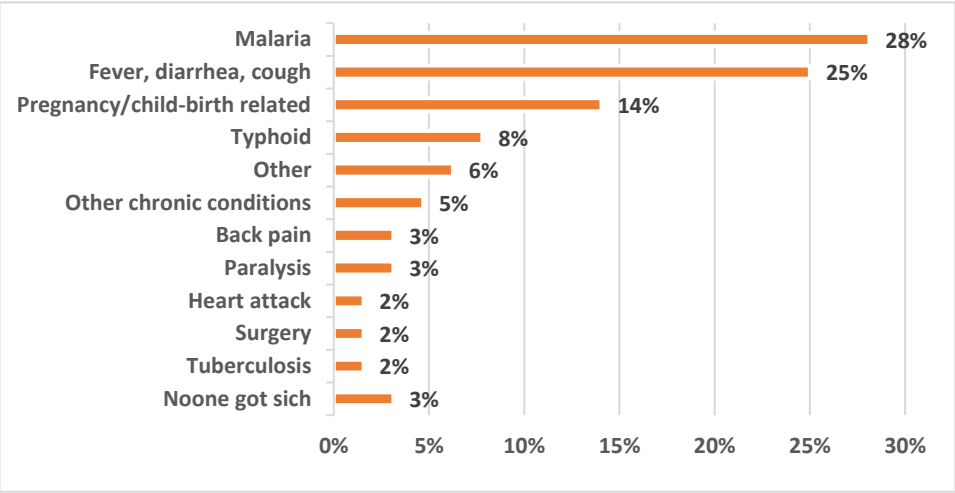


Figure40：Behavior seeking medical treatment when interviewees or family member fell sick (n=35)

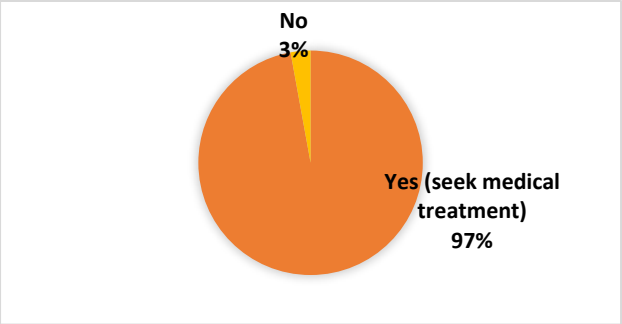


Figure41：Type of health facilities go for treatment (Multiple ans. allowed, n=64)

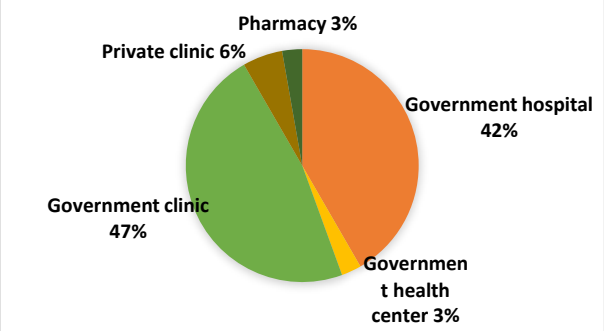


Figure42：Time to access to h the health facility (one way) (n=34))

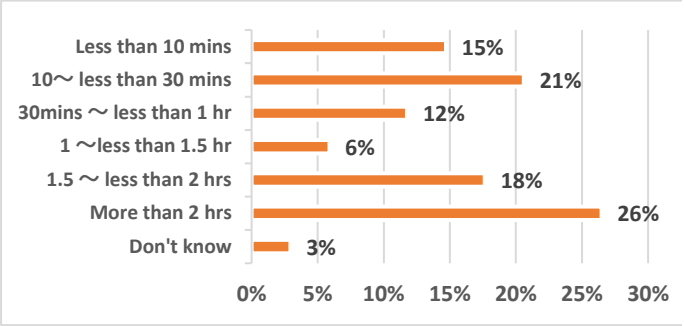


Figure43：Cost to reach to the health facility (n=34)

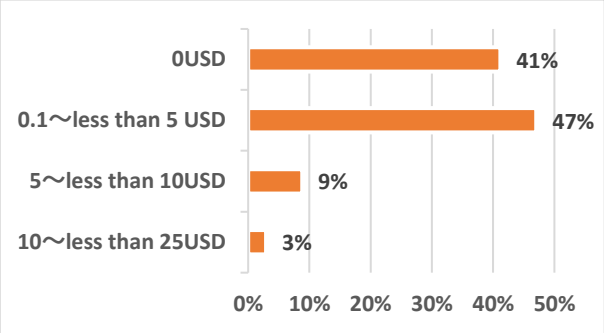


Figure44：Reasons not to seek treatment at health facility (n=8)

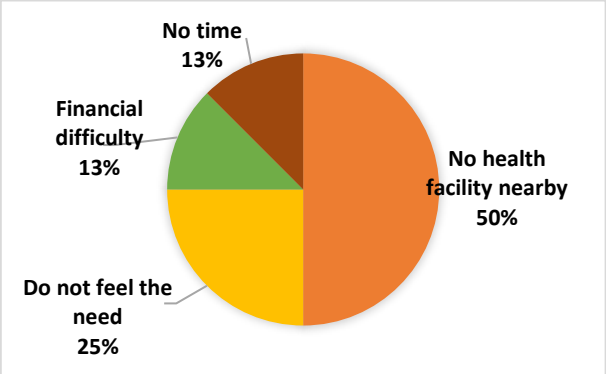


Figure45：Availability of electricity (n=35)

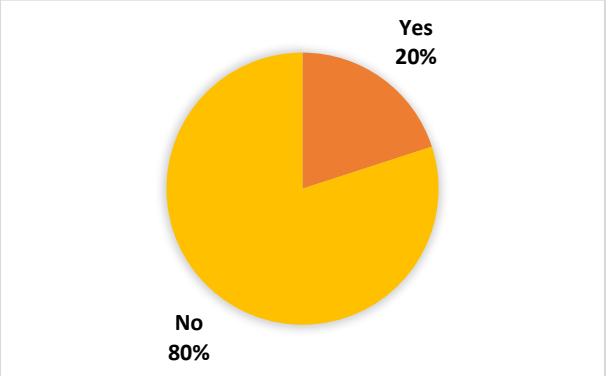


Figure46：Type of lighting facility (n=35)

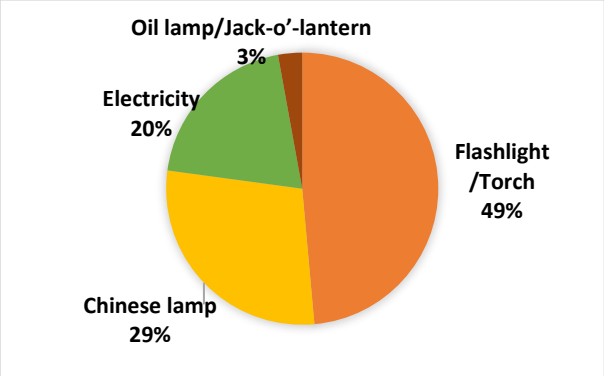


Figure47：Number of rooms (n=35)

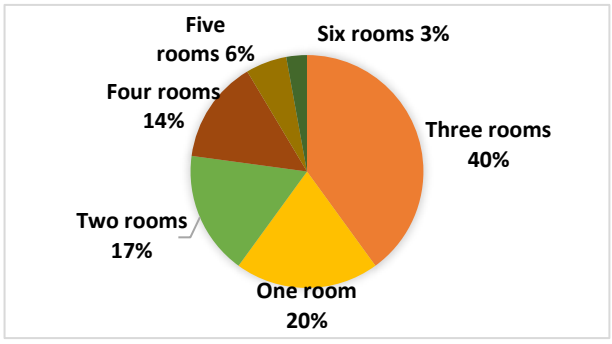


Figure48：Availability of bathing facility (n=35)

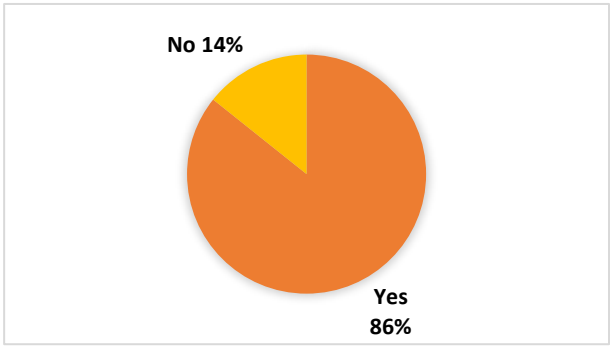


Figure49：Type of fuels for cooking (n=35)

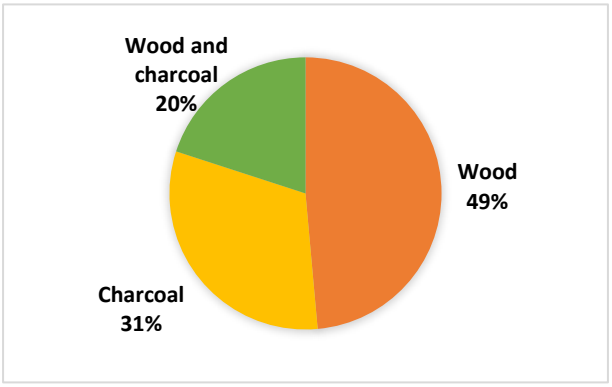


Figure50：Place for cooking (Multiple ans. allowed, n=37)

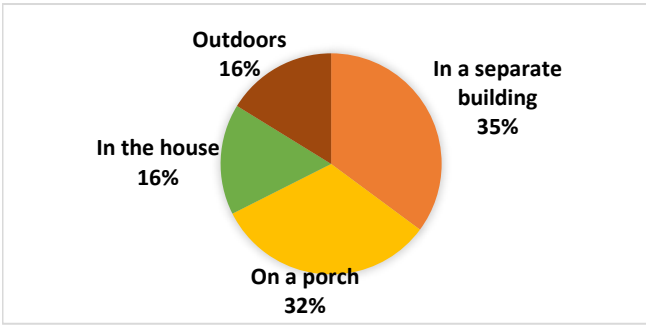


Figure51：Place to defecate (Multiple ans. allowed, n=38)

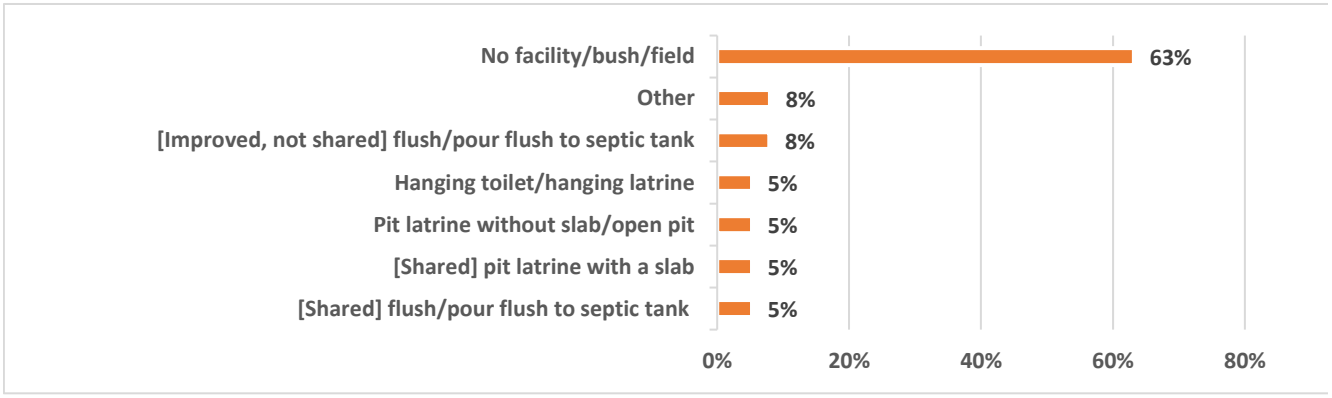


Figure52：Distance to toilet/sanitation facility (n=35)

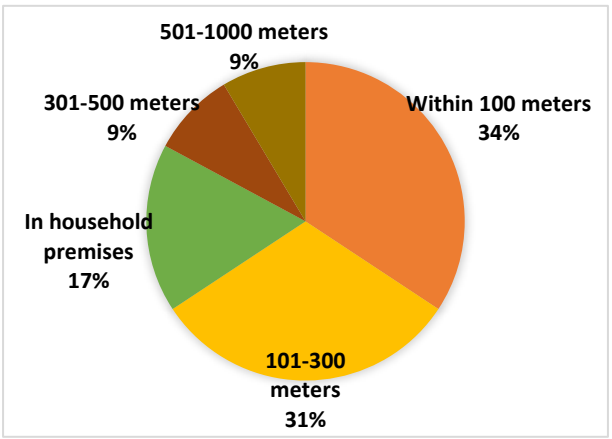


Figure53：Place to go for drinking water
(Multiple ans. allowed, n=37)

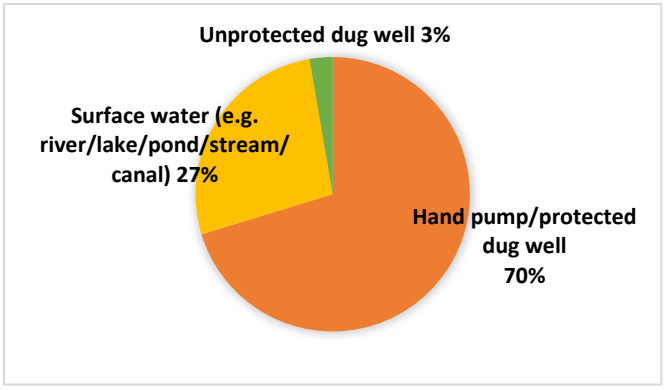


Figure54：Distance to water source (n=35)

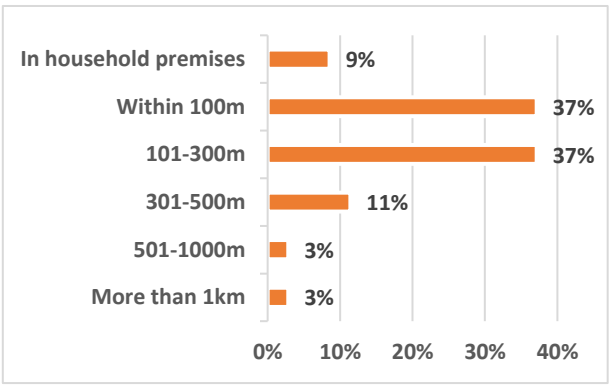


Figure55：Means to purify drinking water (n=35)

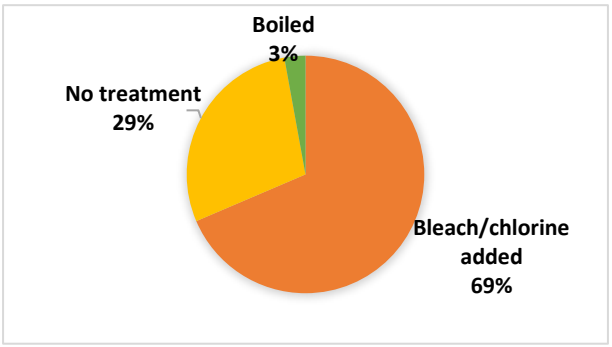


Figure56：Places to dispose solid waste
(Multiple ans. allowed, n=36)

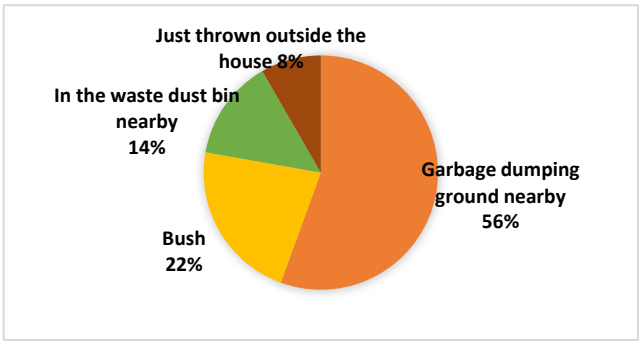


Figure57：Possession of land (n=35)

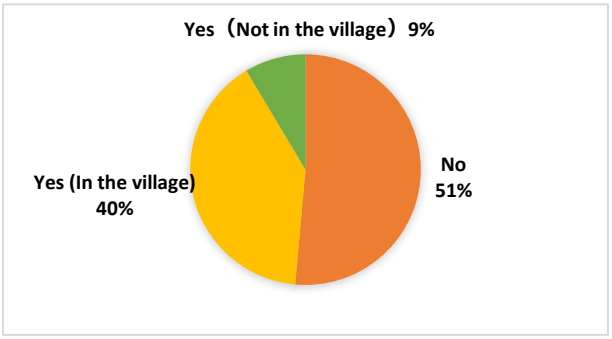


Figure58：Possession of farm animal (n=35)

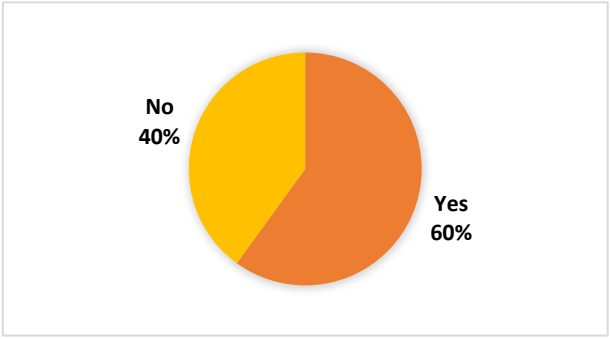


Figure59：Types of farm animal (n=23)

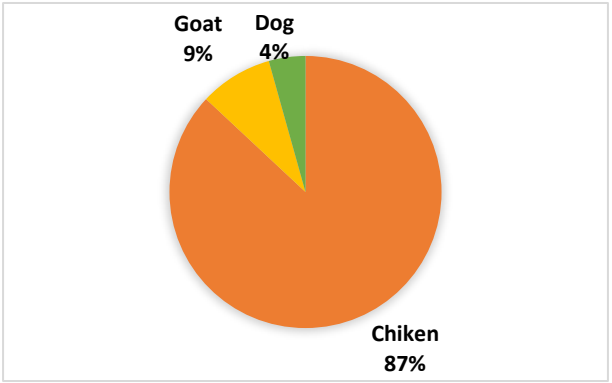


Figure60：Numbers of farm animal (n=21)

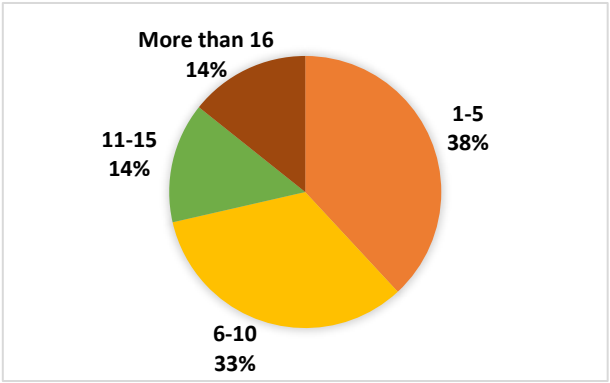


Figure61：Possession of goods in the household(n=35)

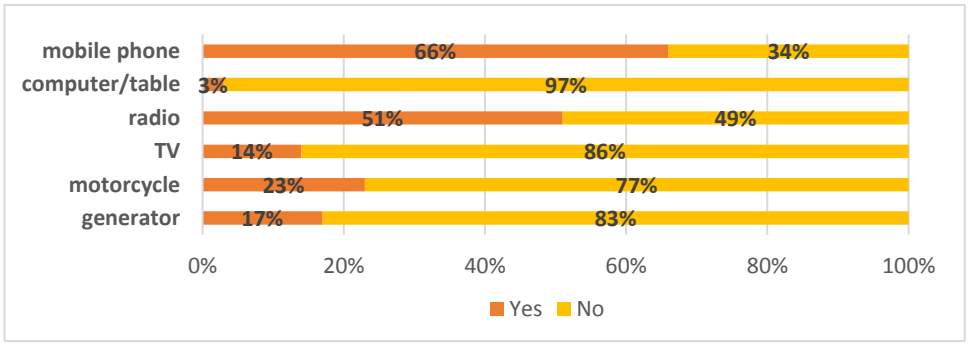


Figure62：Numbers of mobile phone in household (n=23)

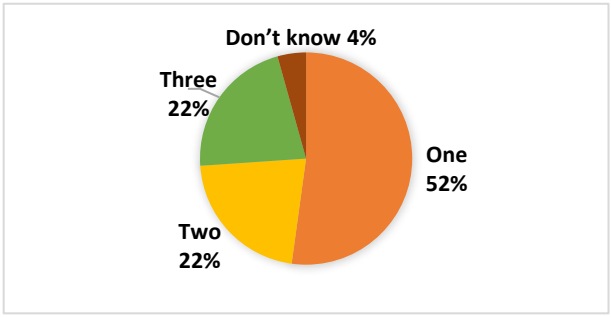


Figure63：Means to collect information (Multiple ans. allowed, n=40)

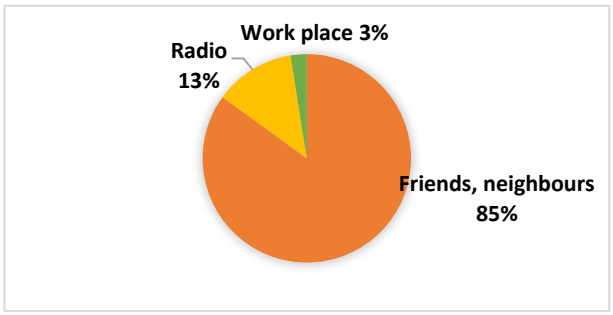


Figure64：Entertainment in communities (Multiple ans. allowed, n=49(male), n=49(female))

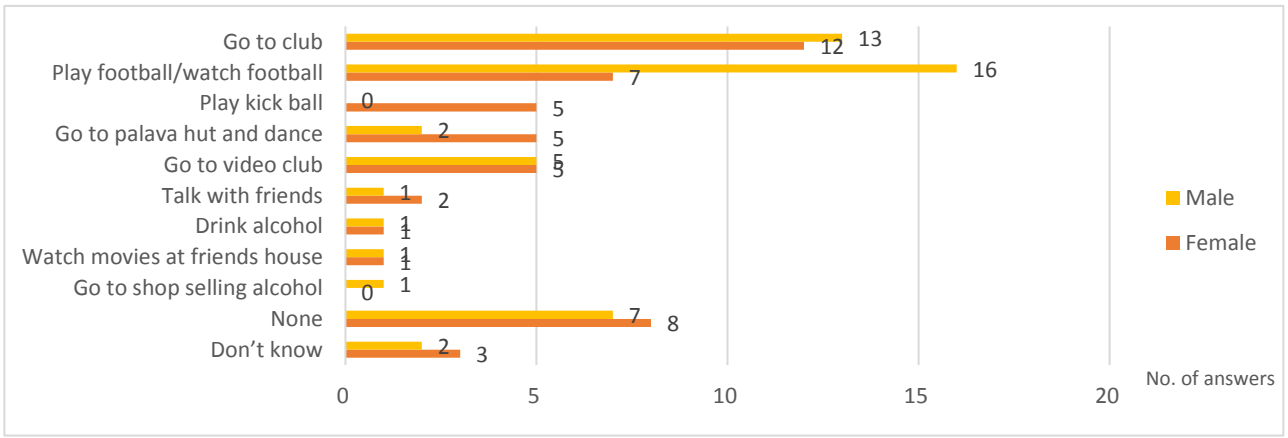
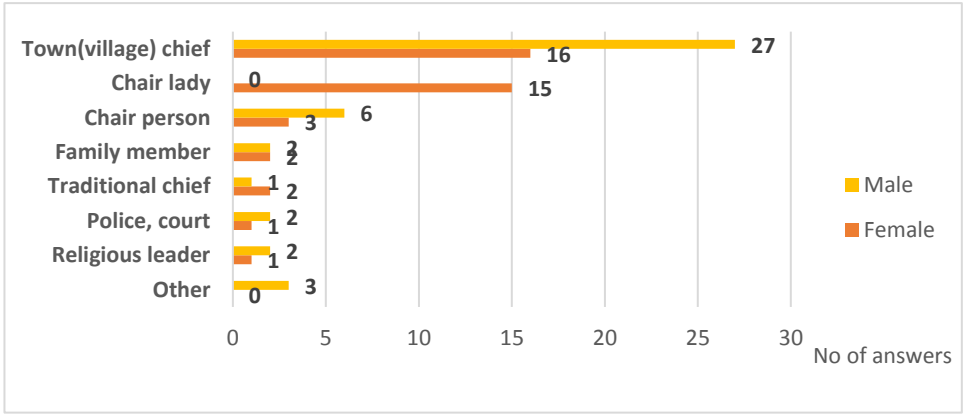


Figure65：Persons seeking advice (Multiple ans. allowed, n=43(male), n=40(female))



Community organization

Figure66：Memberships of community organization (n=35)

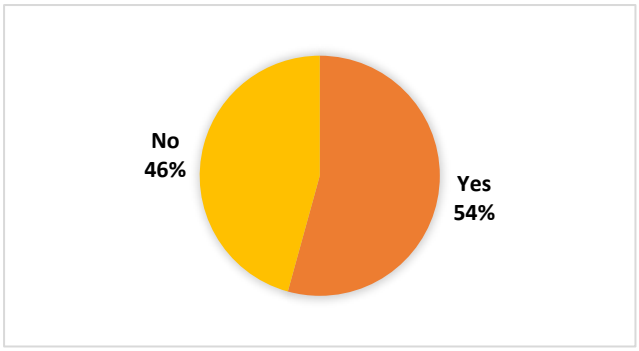


Figure67：Types of community organization
(Multiple ans. allowed, n=33)

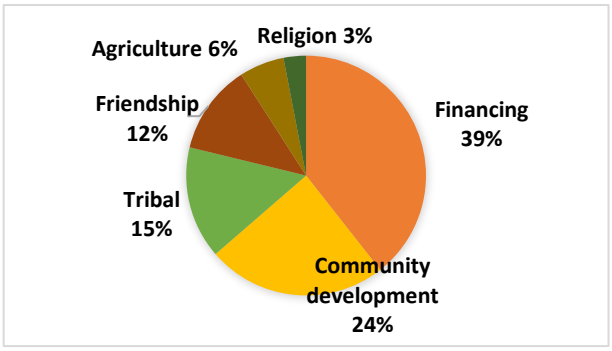


Figure68：Numbers of membership
(Multiple ans. allowed, n=38)

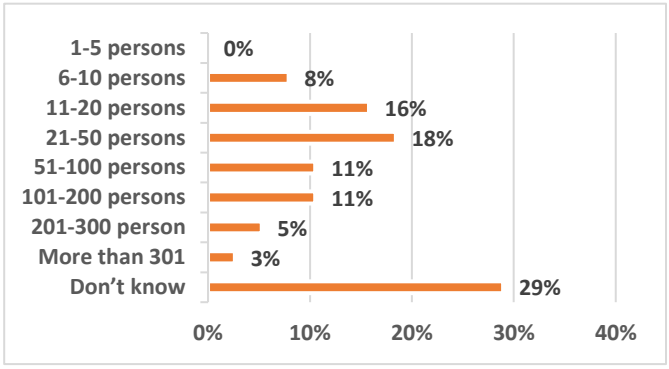


Figure69：Registration fee for joining organization
(Multiple ans. allowed, n=35)

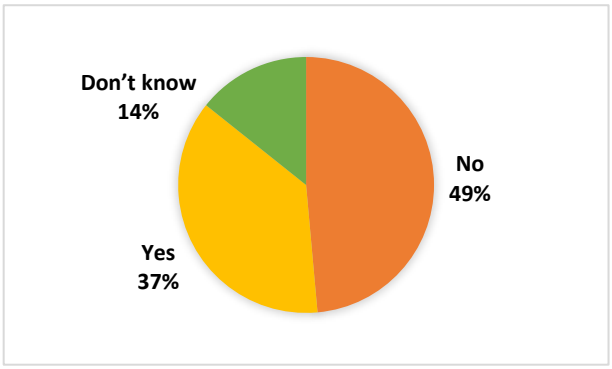
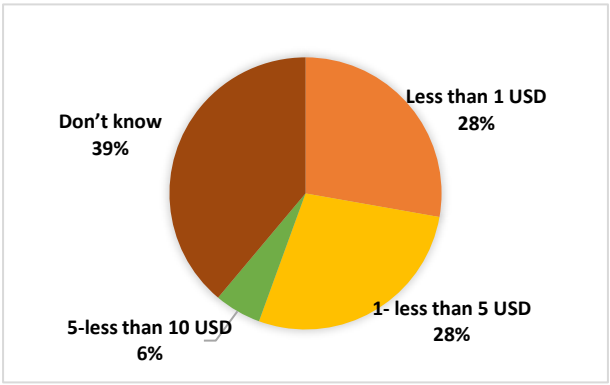


Figure70：Amounts of registration fee (n=18)



Household income and expenditure

Figure71：Household income of the previous month (October 2016: dry season) (n=35)

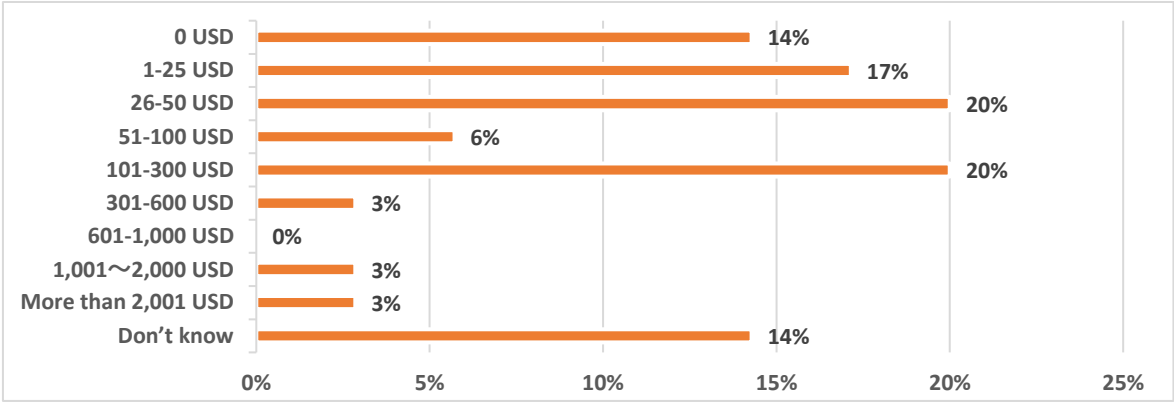


Figure72：Major source of income
(Multiple ans. allowed, n=48)

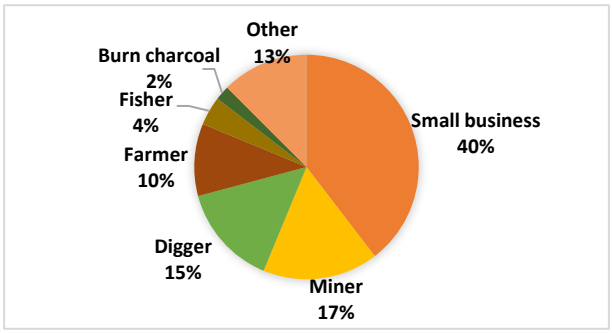


Figure73：Stability of monthly income throughout a year
(n=35)

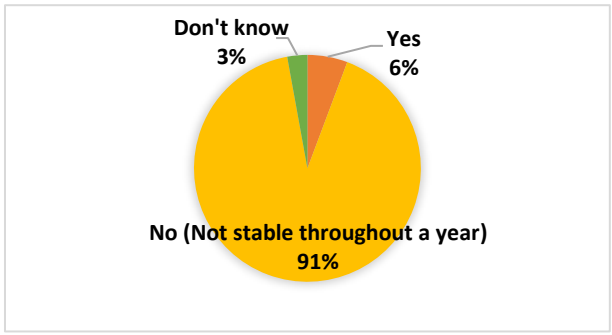


Figure74：Season with more income (n=31)

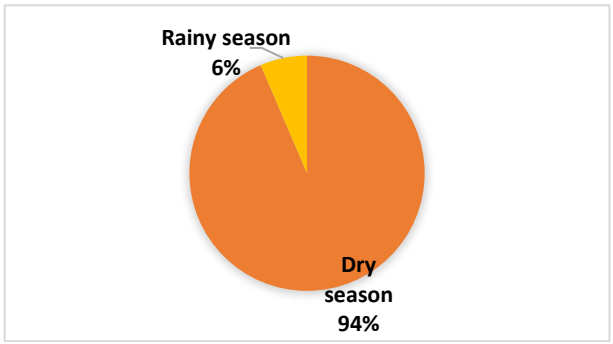


Figure75：Major source of income in dry season
(Multiple ans. allowed, n=57)

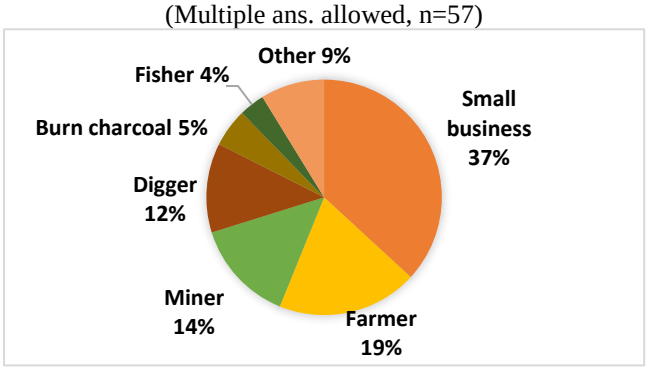


Figure76：Season with more expenditure (n=31)

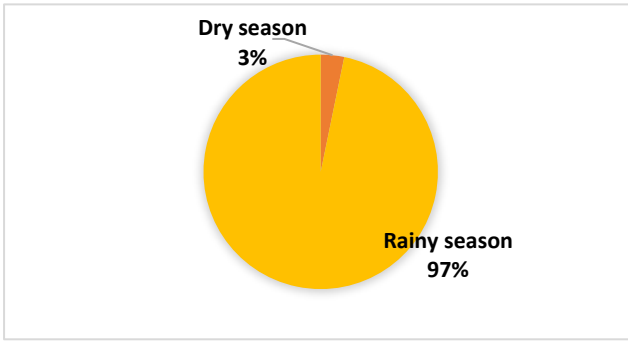


Figure77：Major source of income in rainy season
(Multiple ans. allowed, n=57)

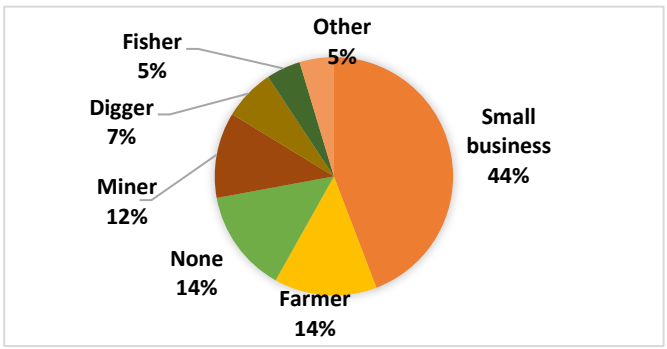


Figure78：Household annual income (n=35)

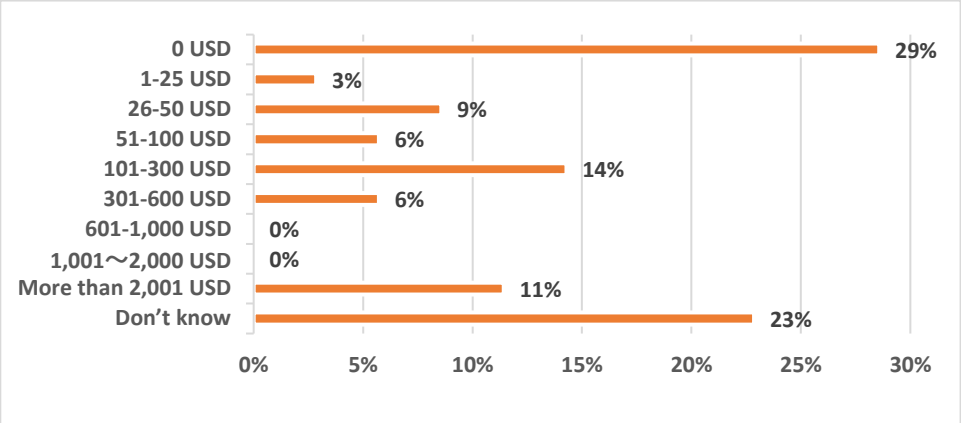


Figure79：Food expenses per month (n=29)

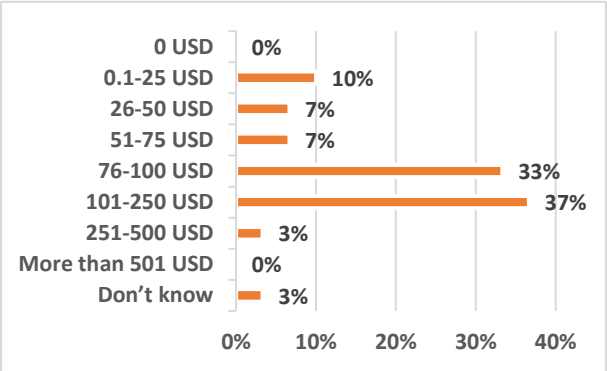


Figure80：Travel expenses per month (n=30)

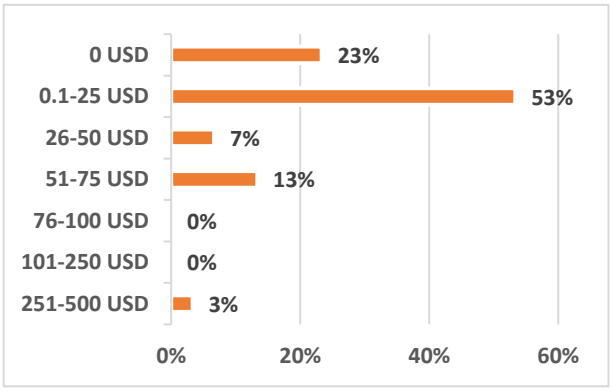


Figure81：Water, electricity and housing expenses per month (n=29)

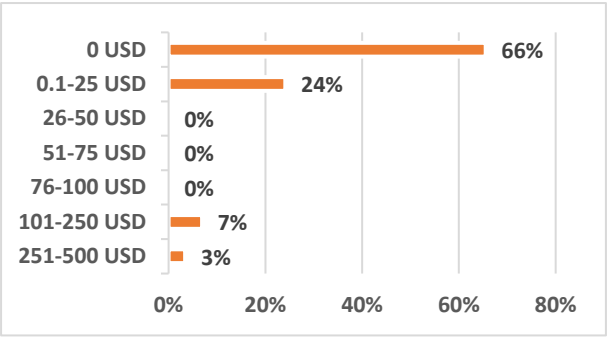


Figure82：School expenses per month (n=29)

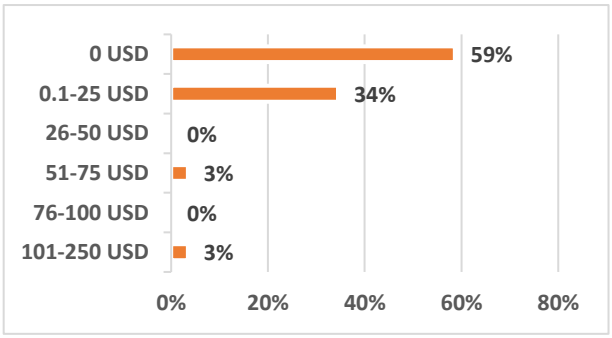


Figure83：Medical expenses per month (n=30)

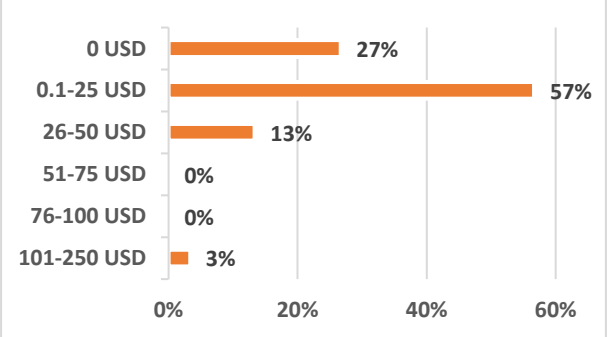


Figure84：Land lease fees per month (n=30)

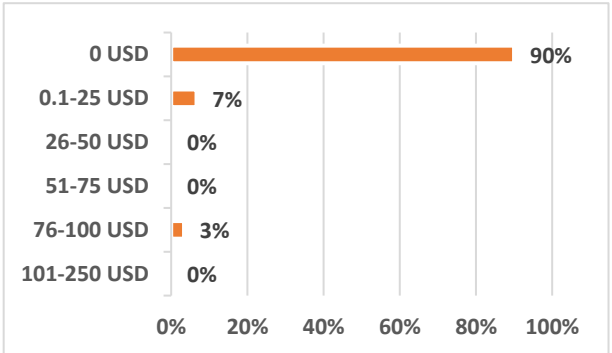


Figure85：Business expense per month (n=28)

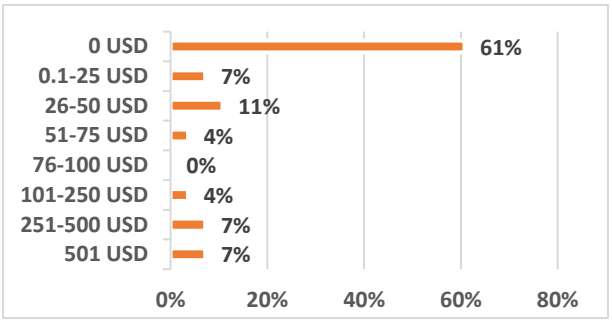


Figure86：Expenses for entertainment (n=30)

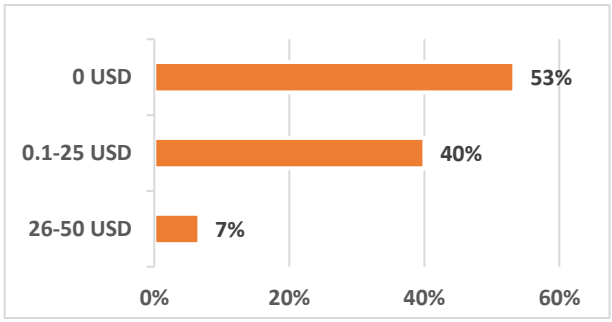


Figure87：Sex of the decision maker of household account (n=35)

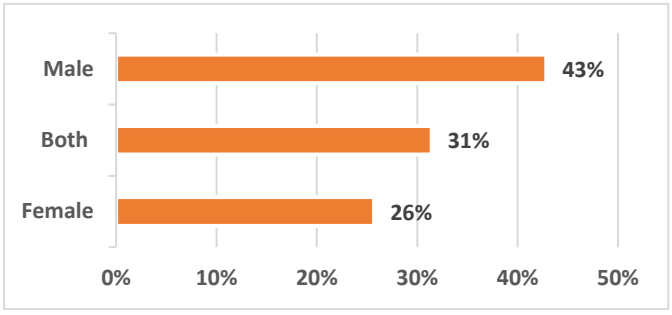


Figure88：Saving behavior (n=14)

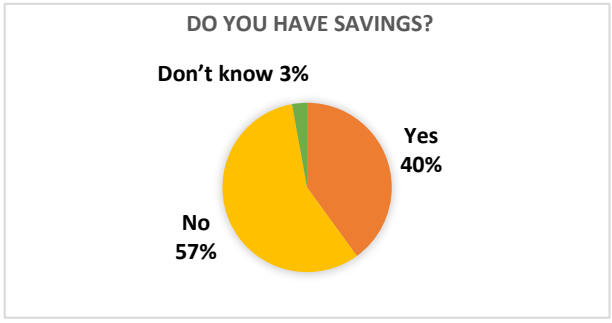


Figure89：Frequency of saving (n=14)

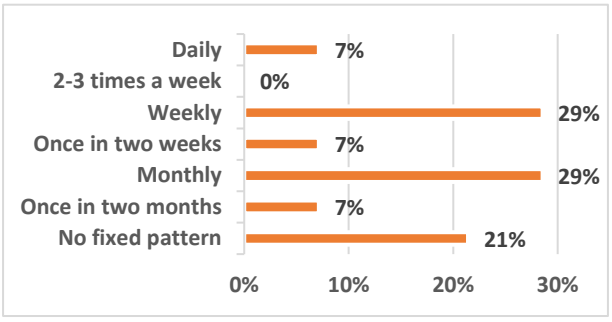


Figure90：Amount of saving in one time (n=14)

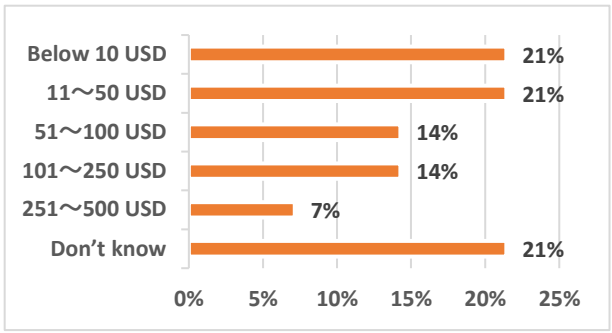


Figure91：Place for saving (n=14)

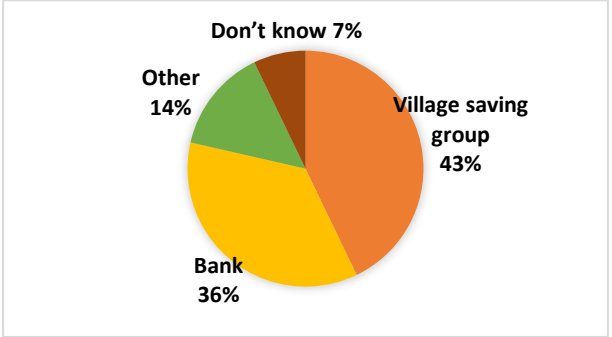


Figure92：Experiences of financial difficulties in the household last year (n=35)

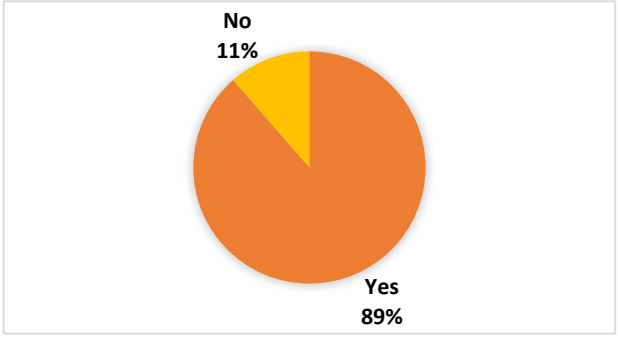


Figure93： Means to cope household financial difficulties (Multiple ans. allowed, n=37)

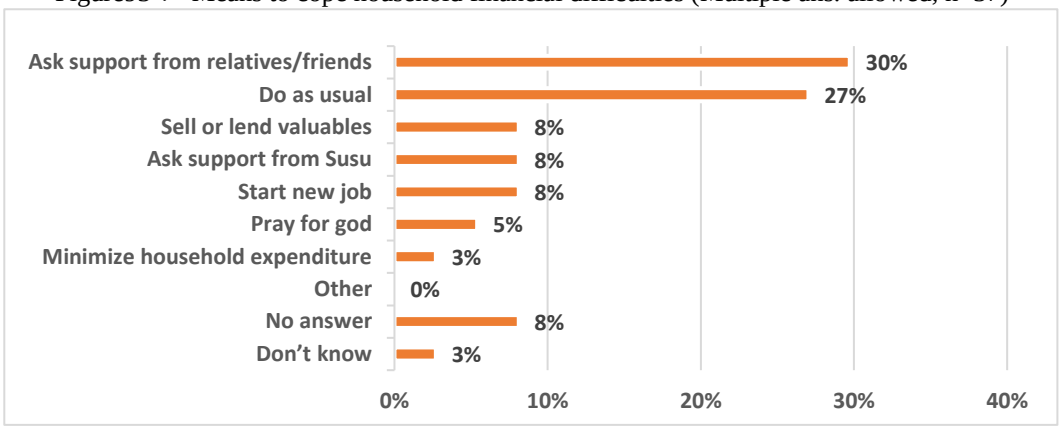


Figure94：Experiences of loan or sold valuable items (n=35)

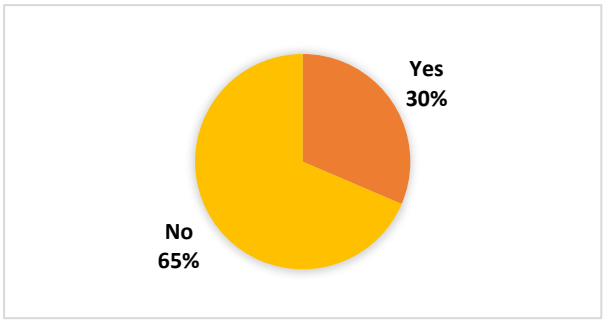


Figure95：Persons who ask for loan or sold valuable items (n=11)

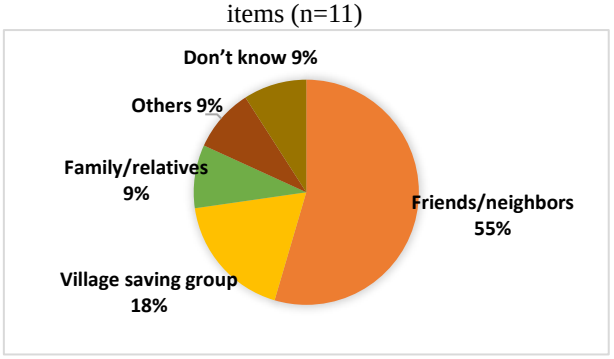


Figure96：Reason for loan or sold valuable items (n=14)

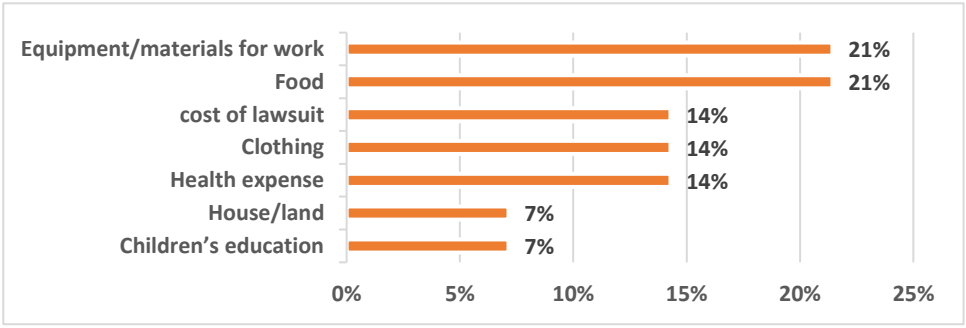
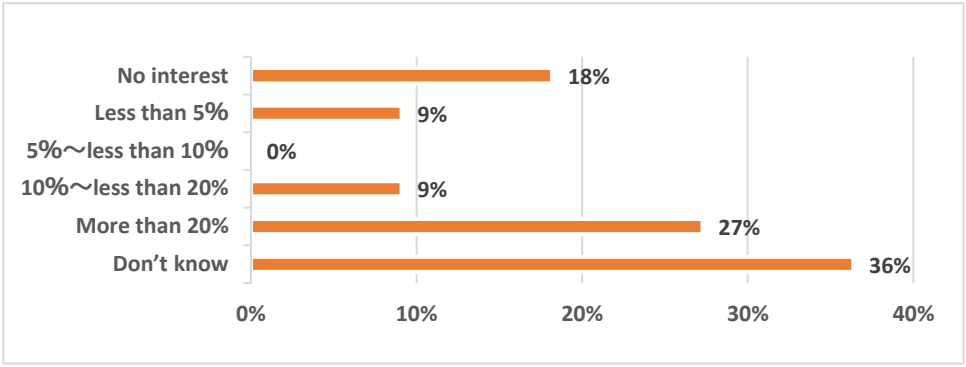


Figure97：Interest rate for the loan (n=11)



Situation of mining site and challenges in the community

Figure98：Female labor in mining sites (n=35)

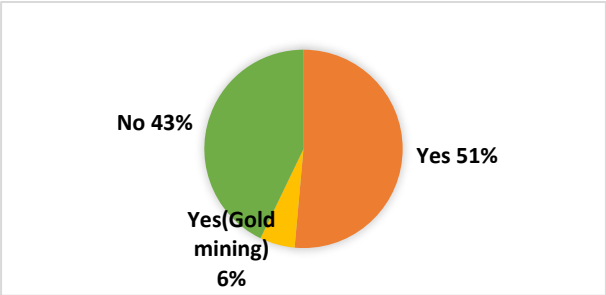


Figure99：Types of work by female workers in mining sites (Multiple ans. allowed, n=31)

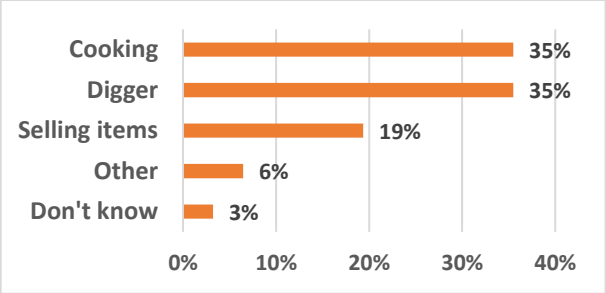


Figure100：Problems in mining sites (Multiple ans. allowed, n=80)

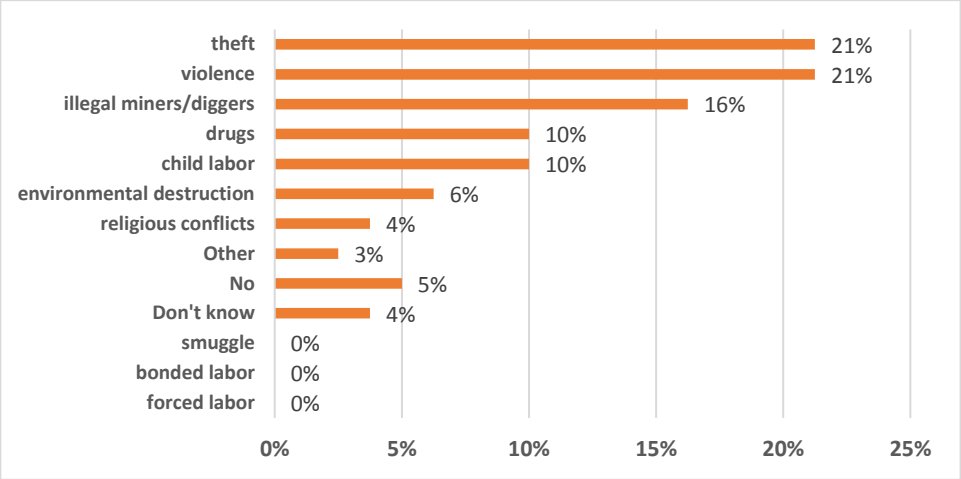


Figure101：Benefit from mining activity to the village (n=34)

Figure102：Negative impact of mining activity to the village (n=30)

Figure103：Challenges in the communities (n=35)