



# MATOKEO – DATA COLLECTION ON ASM IN EASTERN DRC



Ulula



IPIS

## **Matokeo – Data collection on ASM in eastern DRC**

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**Cover image:** Use of a smartphone on the gold mining site of Kavumu, South Kivu, May 2021, IPIS.

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**Ulula** is a social enterprise that aims to improve working conditions in mining, manufacturing and agribusiness by sourcing and processing accurate and timely insights directly from workers around the world. We have projects across the globe including India, Peru, South Africa and China with clients ranging from NGOs to government departments to household name brands.

The **International Peace Information Service** (IPIS) is an independent research institute providing tailored information, analysis, policy advice and capacity enhancement to support actors who want to realize a vision of durable peace, sustainable development and the fulfilment of human rights.

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# 1. INTRODUCTION

'Matokeo' (meaning 'impact' in Swahili) is a data-driven platform operating in the Democratic Republic of Congo (DRC) with the ability to reach last mile artisanal miners, enabling them to ping the latest international price of gold. Conceptualized by Ulula and the International Peace Information Service (IPIS), the project won a Conservation X<sup>1</sup> grant in October 2020 for its ability to remotely collect data about mercury-use, deforestation, child labor and security issues. Using Ulula's system of two-way mobile based engagement, Matokeo enabled a more continuous impact data collection through automated mobile surveys focusing on the above-mentioned indicators.

Since 2018, IPIS and Ulula developed a mobile-based incident reporting mechanism called 'Kufatilia' (which means 'to track' in Swahili)<sup>2</sup>. By sending the key word 'Kufatilia' to the +243 8 50 29 12 51 (Orange), +243 8 24 44 33 91 (Vodacom), +243 9 74 72 91 00 (Airtel) or +1 647 503 3558 (WhatsApp) from a Congolese telephone line, anyone can report an incident linked to the exploitation, transport or export of minerals. The incidents are then visible in a secured online-platform to a network of 20+ Civil Society Organisations (CSOs) active in Eastern DRC.

In 2020, the Conservation X grant allowed Ulula and IPIS to develop the second stage of this data platform, by introducing the keyword 'Matokeo'. Conceived both as a way to increase user participation and to remotely collect data on the impact of artisanal mining on local communities in Eastern DRC, Matokeo was built with three components:

- Price Ping
- IVR automated surveys
- Broadcast messages

The entire program is available in three languages - Swahili, Lingala and French. Participants can select their preferred language during the surveys and their choice is remembered by the platform.

## 1.1. PRICE PING

By sending 'Matokeo' to the same phone number as Kufatilia, anyone can automatically receive the international price of the day for one gramme of gold on the international market. Based on previous research, IPIS estimates that the price of artisanal gold at the mining sites varies between 70 to 80% compared to the international price. Those variations can be explained by the varying purity of artisanal gold but also the distance of the mining sites to the main selling points or the presence of illegal taxation and other factors.

Providing the daily price of one gramme of gold on the international market can support the mining communities in negotiating the price of gold locally, taking into account the important variations that can occur over time. This is supported by the work done locally by the network of 20+ CSOs active in the Kufatilia network in disseminating the Kufatilia/Matokeo phone numbers and training cooperatives and mining communities in the importance of incident-reporting and formalization of the artisanal mining sector.

To date, the gold price ping was consulted 2,649 times by 421 unique participants who sent 'Matokeo' at least once.

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1 The Artisanal Mining Grand Challenge is a competition, launched by Conservation X labs in October 2019 to encourage innovators, solution-seekers, and unconventional thinkers to present solutions that transform artisanal mining.

2 For more information about Kufatilia, please consult: <https://ipisresearch.be/project/kufatilia-incident-reporting-and-monitoring/>

## 1.2. IVR AUTOMATED SURVEYS

Using the two-way mobile based engagement platform conceived by Ulula, IPIS and Ulula have carried out Interactive Voice Response (IVR) phone surveys. Those pre-recorded surveys are conducted by automatically calling participants that interacted at least once with Kufatilia/Matokeo.

To date, the Kufatilia/Matokeo platform has aggregated a total of 1,369 different phone numbers that engaged at least once with the platform. By sending out IVR automated surveys to this database of phone numbers, Ulula and IPIS have remotely collected data around the impact of artisanal mining on key social, environmental and human rights indicators in Eastern DRC.

Out of the 1,369 phone numbers, about 500 are actively engaged with the project (536 unique participants filled at least one Kufatilia incident report and 421 unique participants consulted the price ping by sending Matokeo at least once). Of those, the IVR automated survey was able to collect 205 complete responses which will be detailed below.

## 1.3. BROADCAST MESSAGES

To support the work of our partner CSOs that are conducting both dissemination of Kufatilia/Matokeo as well as incident follow-up activities in Eastern DRC, and to keep the engagement with the important network of 500+ active informants, Ulula and IPIS are also using the Kufatilia/Matokeo system to push broadcast messages. Those messages (short SMS) were drafted through participatory workshops with the network of 20+ CSOs. For now, about 30 different SMS broadcast messages were drafted and translated in French, Swahili and Lingala.

Broadcast messages include awareness-raising about Covid-19, mercury use, deforestation, child labor. They also include prevention messages against illegal taxation, fraud, and gender inequality. Those broadcast messages are currently being sent every two weeks to the database of 1,369 phone numbers.

# 2. METHODOLOGY

Matokeo utilized IPIS's pre-existing networks of local civil society organisations working with artisanal miners in Eastern DRC to conduct outreach activities about this initiative. Several community meetings were conducted to publicize the project in September-October 2021. These community meetings highlighted a key takeaway for its recipients - their ability to get the latest price of gold on any given day by sending an SMS or a WhatsApp message with the keyword 'Matokeo' to a local phone number.

Communities were also made aware of a monthly survey to be sent to collect data on mercury-use during mining, deforestation, child labor, security concerns, etc. as well as awareness raising broadcasts messages to be sent on their mobiles. Owing to Covid-19 ravaging through the communities of DRC, the number of outreach activities remained quite limited, therefore, in addition to the outreach efforts noted above, all the artisanal miners using the IPIS-Ulula incident management helpline 'Kufatilia' were also sent broadcast messages informing them about Matokeo gold price ping and the monthly survey for continuous data collection. The participants were incentivised to take the survey by reimbursing them mobile credit for taking the survey. Those who didn't wish to participate were made aware of the options to unsubscribe from the whole program.

In terms of participation, more people participated to access the gold price on a monthly basis than those who participated in the survey, rendering it the most popular feature of the project. More details can be found in the findings section.

### 3. FINDINGS

#### 3.1. PARTICIPATION

Out of the 1,369 phone numbers in the database, 491 participants responded to the survey between September 2021 to June 2022 (10 months). After data cleaning (removal of entries with zero Key Performance Indicators (KPI) questions answered), the final participation was 205. This represents an engagement rate of 15%.

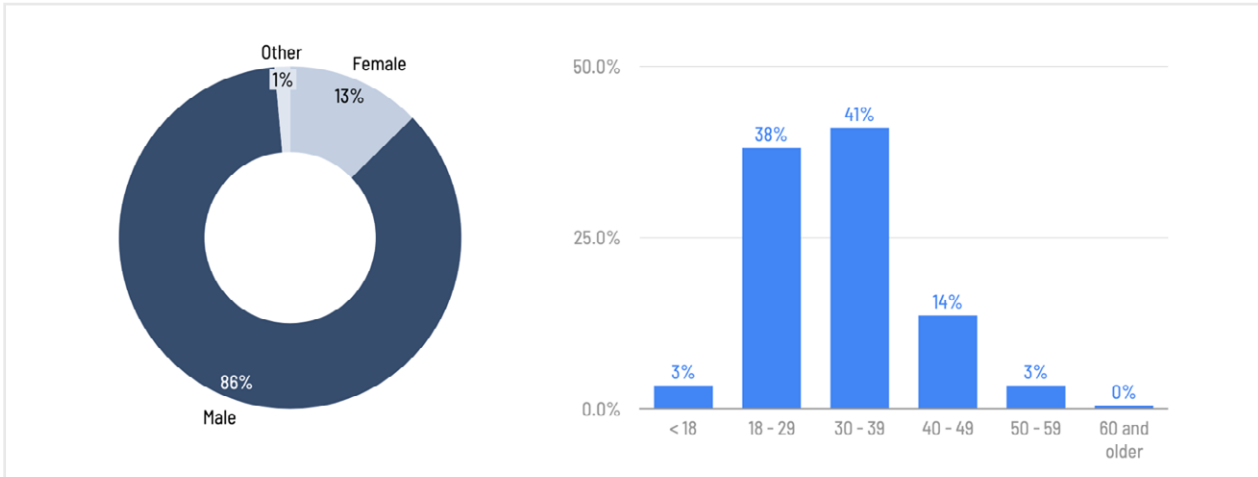


Figure 1: Gender and age group

There were more male participants (86%) than female participants (13%). The largest group of respondents are within the age group of 30 – 39 years (41%), followed by 18 – 29 (38%), 40 – 49 (14%), and 50 – 59 (3%) as well as younger than 18 (3%).

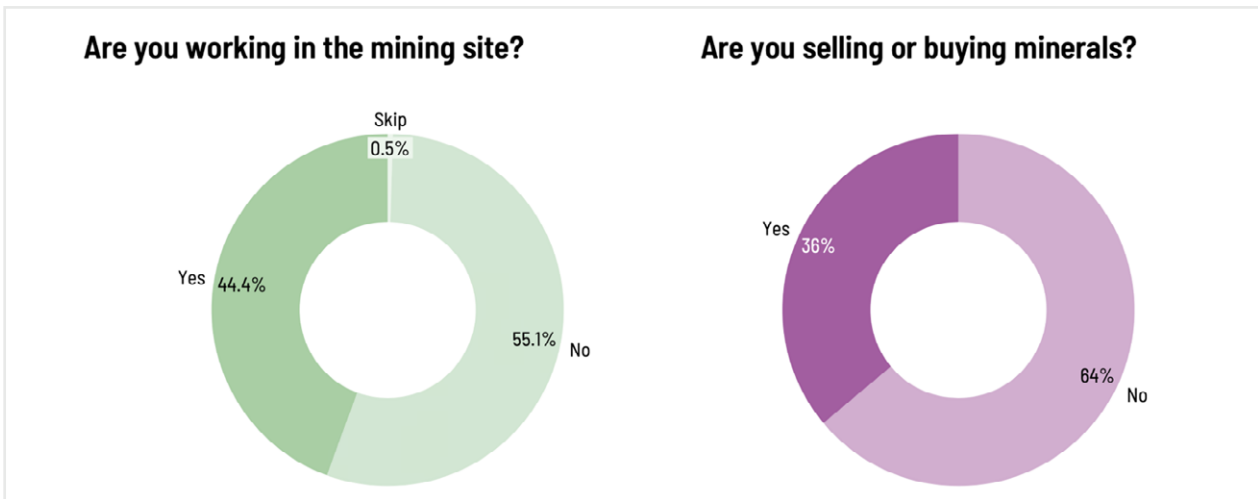


Figure 2: Occupation type

Less than half (44%) of the respondents are working in a mining site, while a little over half (55%) are not working in a mining site. About two-thirds (64%) of respondents are not selling or buying minerals, while about a third (36%) are.

Nearly half (48.8%) of respondents are in Ituri. 16.6% of respondents are in South-Kivu and the remaining 34.6% in other provinces (not specified during survey design).

### 3.2. KEY PERFORMANCE INDICATORS

According to the survey results, respondents have overall experienced harassment, have reported that they are not feeling safe at the mining site, observed child labour in the mine, or reported environmental pollution.

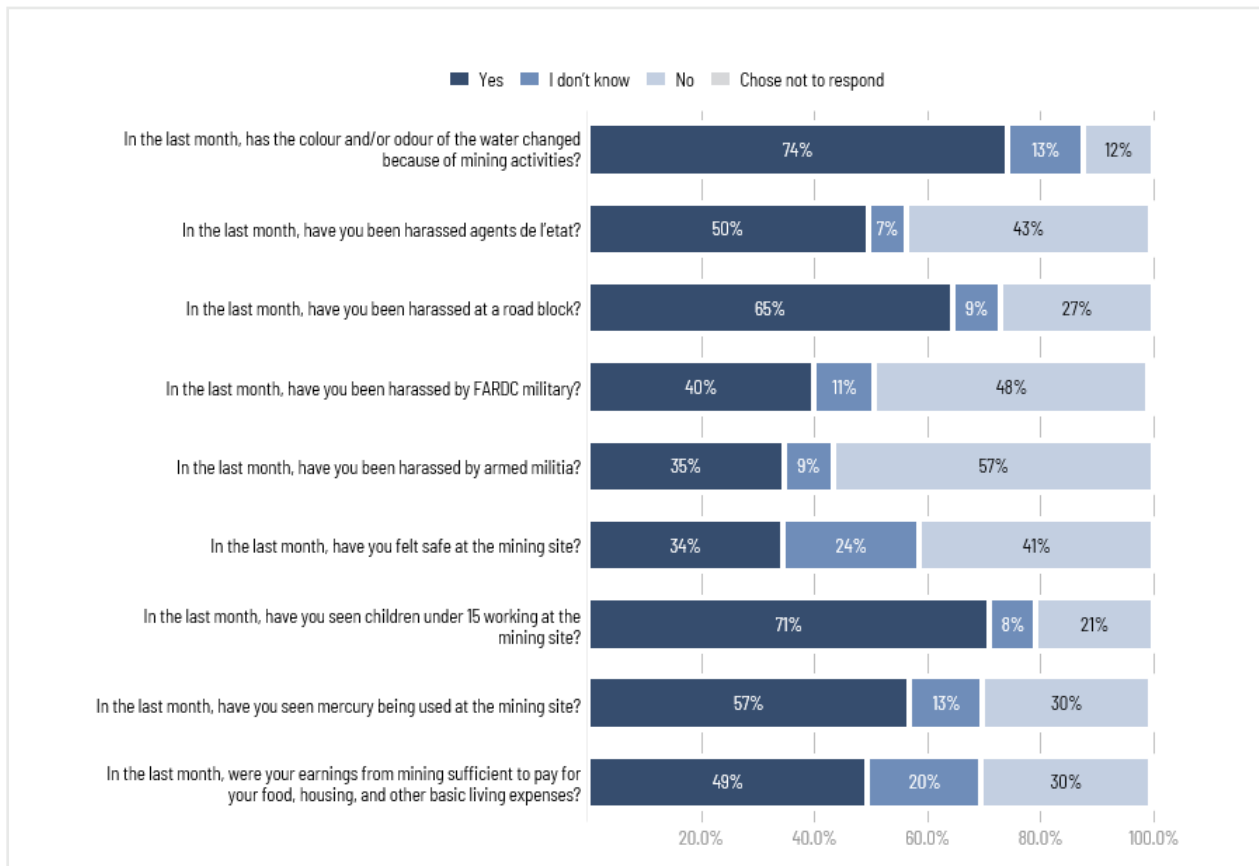


Figure 3: Key Performance Indicators

**Human Security** – When asked if they have been harassed in the recent month, over a third (35%) of all respondents reported being harassed by armed militia, 40% have been harassed by FARDC military, 50% have been harassed by state agents, and nearly two-thirds (65%) have been harassed at a roadblock.

**Child Labour** – 71% of respondents reported that they have seen children under 15 working at the mining site. In the demographics data, 3% of survey participants were under the age of 18.

**Environment** – In terms of environmental degradation, 74% have reported that in the last month the colour and/or odour of the water changed due to mining activities. Furthermore, 57% have seen mercury being used at the mining site which as a heavy metal is hazardous for the human body.

**Safety** – Overall, the percentage of respondents feeling unsafe at the mining site (42%) is higher than those who feel safe (34%) in the last month. Slightly more than half (52%) of workers at the mine felt unsafe or very unsafe, while there were mostly neutral responses (32%) from workers not at the mine.

The findings of this study need to be interpreted with some caution as IVR mobile-based surveys collected data on perceptions and experiences of individuals in mining areas. This data on its own cannot be extrapolated to make inferences about the distribution or prevalence of the social, economic or human rights indicators analysed because it is possible for a number of individuals in the same mining zone to report about the same incident thereby creating a reporting bias. Moreover, the sample of respondents should not be considered as representative.

For example, when 71% of the respondents reported that they have seen children under 15 working at the mining site in the last month, it is impossible to draw conclusions on the prevalence of child labour at mining sites. Previous IPIS research demonstrated that the presence of children under 15 actively participating in the production of minerals was reported on 22% of the mining sites (324 mining sites on a total of 1,379 where data was collected over several years). When present, the children usually account for between 5 to 15% of the workforce of the mining site.

The same can be said for mercury use. Previous IPIS research showed that mercury was reported being used on 26% of gold mining sites visited (296 out of 1,133). But mercury is mostly used on the most important gold mining sites, as those 26% of mining sites are employing about 54% of the total estimated gold artisanal workforce.

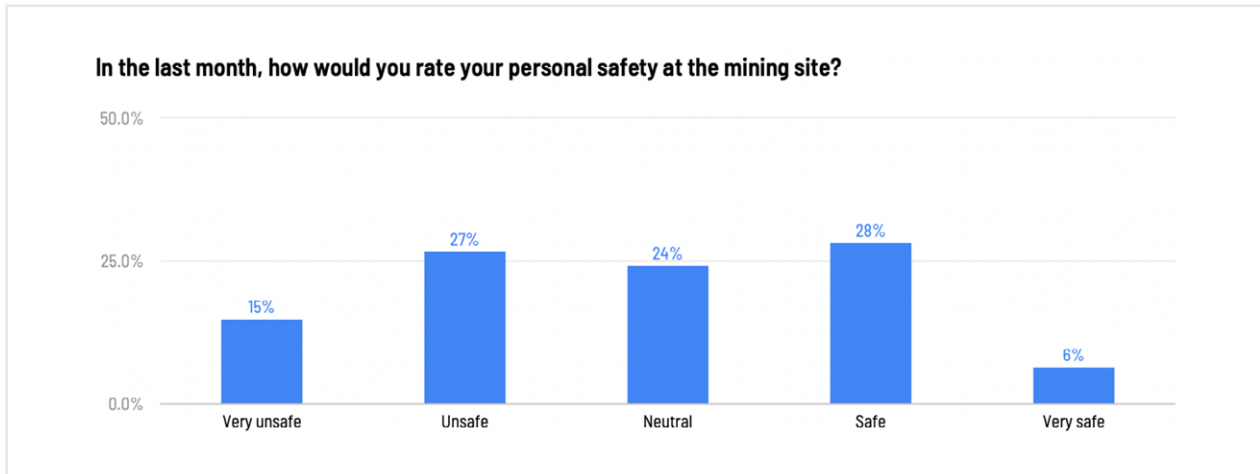


Figure 4: Safety at the mining site - Total sample (Working in the mine + Not working in the mine, N = 205)

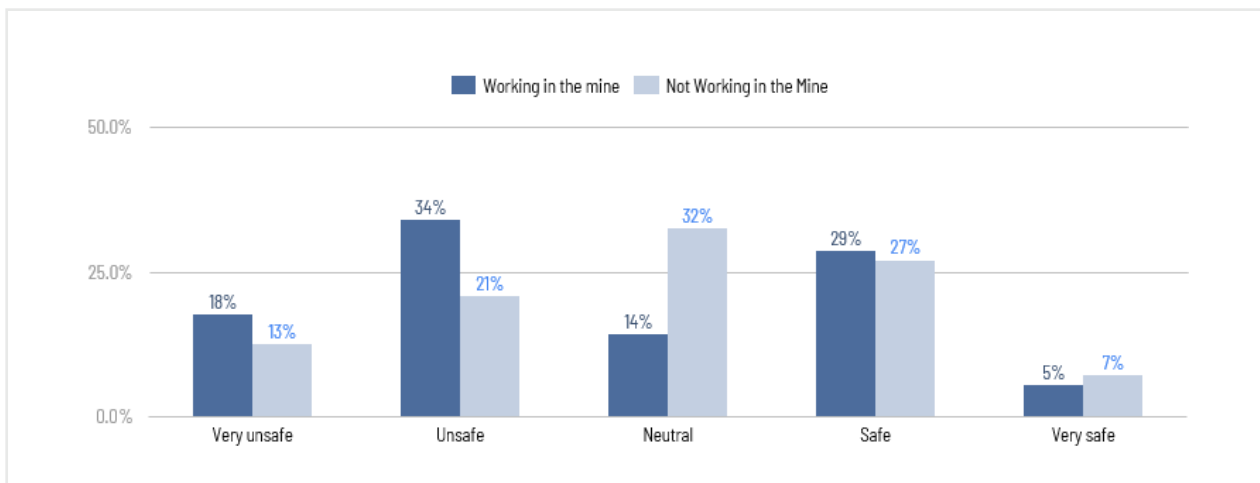


Figure 5: Safety at the mining site - Direct comparison of respondents working at the mine vs. respondents not working at the mine



## 4. CONCLUSION

The Conservation X grant allowed Ulula and IPIS to develop a more comprehensive data collection platform, building on the first bricks of the Kufatilia network and SMS-based incident reporting mechanisms. The background philosophy for the development of Matokeo was to see if we could leverage this network of 500+ active informants to collect data and remotely monitor some key performance indicators related to the impact of artisanal mining in Eastern DRC.

While limited in scope, this project demonstrated the possibility to collect information from 205 people living and working in remote mining communities in Eastern DRC about their perception of safety and security, child labour and mercury use. It is important to remember that the answers collected, are not geo-localised and not representative, and that there is a difference between recording the perception of an event (such as child labor and mercury use) and recording its prevalence.

Although the IVR survey data collection cycle is now finished, Ulula and IPIS will continue to support Kufatilia (SMS-based incident reporting) and Matokeo (price ping and dissemination of broadcast messages) in the coming years. Ulula and IPIS are currently working on the extension of Matokeo with the inclusion of the daily price for one kilogram of cobalt and tin on the international market.

## 5. ANNEX 1 – LIST OF BROADCAST MESSAGES

FRENCH	SWAHILI	LINGALA
Obtenez le prix de l'or en envoyant «Matokeo» au +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp). SMS non surtaxe.	chukuwa beyi ya or ao zahabu ukituma Matokeo ku +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp). SMS bila kulipa.	Yeba talo ya wolo na kotinda "Matokeo" na +42385029151/+243824443391/+243974729100/+16475033558 (WhatsApp). SMS na lifuta ya koleka te
En envoyant "Matokeo" au +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp), je connais le prix de l'or et je peux mieux negocier.	Kwaku tuma Matokeo ku +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp). Nina juwa beyi ya or ao zahabu na nina weza kuuzisha vizuri	Na kotinda "Matokeo" na +42385029151 /+243824443391/+243974729100/+16475033558 (WhatsApp), nayebi talo ya wolo mpe nakoteka malamu
N'oubliez pas de porter un masque et d'appliquer la distance sociale ! Ensemble, nous pouvons stopper la propagation du Covid19.	Usisahau kuvala barakowa na kusogeleana. Pamoja tunaweza kusimamisha kusambaaza Covide 19	Kobosana te kolata masque mpe kozala na distance ya malamu. Lisanga tokoki kotelemisa bokono ya Covid19
N'oubliez pas de vous laver les mains regulierement ou bien d'utiliser du gel hydro-alcoolique. Avant les repas, apres la toilette. Stoppons le Covid19.	Usisahau kunawa mikono kilawakati ao kutumia désinfectant. Mbele yakula, kisha choo ao wc. Tusimishe Covid19	Kobosana te kosukola maboko tango nyoso to kosalela gel hydro alcoolique. Totelemisa Covid19
Le mercure est mauvais pour votre sante et l'environnement. Vous n'avez pas besoin d'utiliser le mercure si vous utilisez d'autres methodes pour condenser l'or.	Mercure ni mbaya ku afia yenu naya mazingira. Hamuna lazima yaku tumiya mercure kama muna tumiya namna zingine kaku kusanya or ao zahabu	Mercure ezali mabe pona bokolongono mpe bikela bya Nzambe. Ozali na posa ya kosalela mercure t soki ozali kosalela lolenge mosusu ya kosangisa wolo
Il existe des alternatives au mercure pour amalgamer l'or. Votre cooperative ou une organisation de la societe civile peut vous enseigner les bonnes methodes.	Kuna namna zina kwaku sukula or bila kutumikisha mercure. Coopérative yako ao miungano ya shirika la raia zina weza kukufundisha methodes zamuzuri	lolenge mosusu ezali ya kosangisa wolo longola mercure.Lisanga to cooperative na bino ekoki kolakisa bino lolenge ya malamu
Les enfants doivent aller a l'ecole. Ils ne doivent pas travailler sur les sites miniers. Les organisations de la societe civile sont la pour vous aider.	Watoto wanapashwa kwenda shuleni. Hawapashwe kutumika nafasi zakuchimba madini. Miungano za shirika la raia ziko pale kwaku wa saidia	Bana bakende kelasi. Bqkoki kosala o esika ya botimoli makele te. Masanga ma societe civile bazali po na kosunga bino
La deforestation a des consequences dramatiques pour l'environnement et nos vies dependent des arbres. Notre foret est notre richesse.	Watoto wanapashwa kwenda shuleni. Hawapashwe kutumika nafasi zakuchimba madini. Miungano za shirika la raia ziko pale kwaku wa saidia	kosilisa nzete ezali na concequence ya mabe mingi mpo na bikela bya Nzambe mpe bomoi ya biso esengeli na ba Nzete. Zamba ya biso ezali nkita ya biso
Signalez un accident sur les sites miniers en envoyant "Kufatilia" au +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp).	Julisha ajali kwenye sites miniers kwakutuma "Kufatilia" ku +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp).	Lakisa likama o esika ya misala ya botimoli makele na kotinda "Kufatilia" o +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp).
En envoyant «Kufatilia» au +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp), je peux signaler un incident. C'est anonyme et gratuit.	Kwakutuma "Kufatilia" +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp), nina wezajulisha shida. Ni bila kutaja jina na bilakulipa	Na kotinda "Kufatilia"+243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp). Nqkoki kolakisa likama. Ezali ya kobombama mpe ya pamba

FRENCH	SWAHILI	LINGALA
En envoyant "Kufatilia" au +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp), je peux signaler le travail des enfants aux ONG Congolaises.	Kwaku tuma Matokeo ku +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp). Nina weza julisha kazi ya watoto kuma ma ONGs	Na kotinda "Kufatilia"+243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp). Nakoki kolakisa misala ya bana na ba ONGs ya Congo
En envoyant "Kufatilia" au +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp), je peux signaler la corruption ou la fraude aux ONGs.	Kwaku tuma "Kufatilia" +243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp), nina weza kujulisha rushwa au fraude kuma ONGs	Na kotinda "Kufatilia"+243850291251 / +243824443391 / +243974729100 / +16475033558 (WhatsApp). Nakoki kolakisa kanyaka to moyibi na ba ONGs
Attention, la limite de profondeur pour les mines artisanales est de 30m. Sous terre, il est important de consolider les tunnels avec du bois.	Attention, mwisho ya urefu wa chimu kwenye nafasi ya uchimbaji wa madini ni 30m. Ndani ya chimu, ni lazima kujenga vizuri na miti	Keba! Suka botomoli makele na maboko ezali na metele 30. o nse ya mabele, ezali na litomba kobongisa tunel to djogo na nzete
Les femmes enceintes ne doivent pas travailler sur les sites miniers pour protéger leur santé (mercure, chutes. . .). Les coopératives ou les ONG peuvent les aider.	wanamuke wa mimba hawapashwe kutumika nafasi yaku chimba madini kwaku linda afia yabo (mercure, chutes. . .) ma coopératives na ma ONGs zina pashwa kuwa saidi ya.	basi ya zemi bakoki kosala misala ya botimoli makele ya maboko te pona ko ba batela bolongono (mercure, chute,...) Ba cooperative to ONG bakoki kosalisa bango
Le mercure, les poussières ou les chutes peuvent affecter la santé des femmes enceintes ou des enfants. Le site minier est un endroit dangereux.	Le mercure, la poussière au chute zinaweza kuzuru afia ya wanawake wa mimba au watoto. Nafasi ya kuchimba madini ni nafasi ya hatari	Mercure,putulu to kokweya ekoki kobebisa bokolongono bwa nzoto ya basi ya zemi to bana. Bisika ya botimoli bizali malamau te
Les soldats ne sont pas autorisés sur les sites miniers artisanaux. Seuls le SAEMAPE et la Division des mines peuvent prélever des taxes sur la production.	Ba soldats au jechi hawaruhusiwe nafasi yaku chimba madini. Peke yake SAEMAPE na DIVIMINES wanaweza kulipisha ma taxes ku production	Basoda bapekisami kozuama o esika ya botimoli makele ya maboko. Kaka SAE%APE pe Division ya mine bakoki kofutisa mpako mpe kozua etalisi ya bozui
Les minerais propres sont une source de développement bénéfique à tous. A condition de payer les taxes officielles et de lutter contre la corruption.	Madini safi ni msingi wa maendeleo kwa faida ya wote. Ni lazima kulipa taxes za serikali naku piganisha rushwa	makele ya peto bizali nzela ya tombwa mpo na baso. Esengi kofuta mpako malamau mpe kobunda po na kanyaka
Avec de bons équipements, je n'ai pas besoin d'utiliser du mercure. Les ONG et le SAEMAPE peuvent m'aider et me conseiller.	Na vyombo vizuri, sina haja yakutumia mercure. ONGs na SAEMAPE wanaweza na kunishauri ya	Na bibongisi ta malamau, nazali na bosenga ya mercure te. Ba ONG mpe SAE%APE bakoki kosunga nga na mateya
Protégeons notre environnement en protégeant notre écosystème. Le mercure tue, la santé n'a pas de prix.	Tukinge mazingira yetu. Mercure inauwa, afia haina beyi	Tobatela bikela ya biso na kobatele écosystème. Mercure ezali koboma, nzoto ezali na talo te
Les minerais doivent profiter à la population. Dites non à la fraude et à la contrebande minière en déclarant votre production.	Madini ifaidishe wakaaji. Sema apana fraude na madini ya kimagendo. Sema production yako	makele ebongi esunga bana mboka. Boya kanyaka, boyibi ya makele na bolakisi bozui na to
Ensemble, disons STOP à la présence des soldats dans les sites miniers et au travail des enfants dans les mines ! Les enfants sont notre avenir.	Pamoja, tuseme STOP ku présence ya ba soldats nafasi yaku chimba madini na ku kazi ya watoto nafasi ya kuchimba madini! Watoto ni avenir yetu	Elongo, toloba STOP na basoda o esika ya botimoli makele mpe misala ya bana o esika wana. Bana bazali lobi ya biso

FRENCH	SWAHILI	LINGALA
La taxation illegale des minerais nuit à nos communautés et nous prive de l'argent pour le developpement de notre pays.	Taxes isiyo julikana inaweza ku haribu communauté zetu na ina tukosesha franga kwa maendeleoya inchi yetu	Mpako ya lokuta ezali koboma lisanga ya biso pe kozangisa biso bozui mpo na tombwa ya ekolo
Les responsables des mines doivent declarer officiellement la production et payer les taxes officielles au SAEMAPE et a la Division des mines.	Wa responsable wa carrière wanapashwa ku onyeshwa production na kulipa ma taxes za leta ku SAEMAPE ao ku DIVIMINES	Bakambi balakisa polele bozui mpe bafuta mpako o SAEMAPE mpe Division ya mine
Les femmes qui font le meme travail que les hommes doivent recevoir la meme somme d'argent. Elles peuvent etre responsable d'un site ou diriger une cooperative.	Wanamuke wanao fanya kazi moja na wanaume wanapashwa kupata franga sawa sawa. Wanaweza kuwa wa responsable wa site minier ao kuongoza cooperative	Basi baye bazali kosala misala lokola babali bazua lifuti ndenge moko. Bakoki kokamba mpe cooperative
Le travail force ou sans remuneration n'est pas acceptable. Les acteurs armes n'ont pas le droit de profiter de leurs armes pour obtenir des minerais.	Kazi ya kulazimishwa ao bila kilipwa haikubaliwe. Watu wenye silaha hawapashwe kamata madini juu wako na silaha	Misala na makasi to nabofuti te ezali mabe koleka. Basimbi minduki bakoki kosalela yango te mpo na kozua makele
Le lavage des minerais ne doit pas contaminer nos rivieres. Il doit se faire loin des habitations, des champs et des cours d'eau et sans utiliser le mercure.	Kusukula madini haipashwe kuchafula ao kuambukiza mitoni yetu. Inapashwa kufanyika mbali na makao yetu, chamba zetu bila kutumikisha mercure..	Bosukoli makele ekoki kobebisa mayi ya biso. Esalema mosika ya bandako, bilanga mpe mayi na kosalela mercure te.

