

ASSESSING THE IMPACT OF DUE DILIGENCE PROGRAMMES IN EASTERN DRC: A BASELINE STUDY



EDITORIAL

Title: Assessing the impact of Due Diligence programmes in eastern DRC: A baseline Study

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Cover picture Gold Mine in Maniema Province (Photo IPIS)

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1. EXECUTIVE SUMMARY

Over the past decade, due diligence programmes (DDP) have been developed in the Great Lakes Region to trace the origins of minerals, certify minerals as conflict-free and to improve mining communities' livelihoods while reducing human rights abuses in conflict affected and high-risk areas, with a special focus on the Great Lakes region. Despite significant growth and investment in minerals certification and traceability programmes, data on the impact of due diligence for miners and communities remains scarce. The International Peace Information Service (IPIS)¹ and Ulula² designed and conducted a social, environmental and human rights assessment of the impact of due diligence programmes in mining communities in the eastern provinces of the Democratic Republic of Congo (DRC).³ This report presents findings from an analysis based on a combination of field visits in mining sites and remote mobile phone surveys targeting people living in and around mining communities. The collection of primary data from both mining sites and individuals living in and around the sites aims to provide preliminary research findings on the impact of due diligence programmes on social, environmental and human rights indicators in eastern DRC.

1.1. Scope

Between the year 2016 and 2018, we visited a total of 623 mine sites that employed an estimated 115,500 artisanal miners. Half of these mines were covered by due diligence programmes and a majority (52 percent) of them produced 3T minerals (cassiterite, coltan and wolframite and their derivatives, tin, tantalum, and tungsten), while the rest were mainly producing gold. During field visits, IPIS surveyors collected information on the conditions of extraction as well as phone numbers from a panel of 8,735 artisanal miners and community members in 19 pre-defined mining zones.

For this study, a DDP zone is defined as a mining area where due diligence programmes are implemented. Due diligence programmes are defined as the International Tin Association's International Tin Supply Chain Initiative (ITSCI) for 3T minerals, and other programmes covering artisanal gold supply chains that have been set up in specific areas in eastern DRC. These include pilot projects coordinated by the non-governmental organization (NGO) Impact Transform (formerly *Partnership Africa Canada* or PAC), the German Federal Institute for Geosciences and Natural Resources (BGR) and the US-based consulting services provider TetraTech, Inc. A non-DDP zone refers to a mining area where no such responsible sourcing initiatives have been undertaken.

From the initial 8,735 panel of recruited contacts, 7,172 received calls and we obtained a total of 1,583 responses from three different surveys deployed between September and November of 2018. A majority (56 percent, N = 1,370) of mobile survey respondents identified as miners while the rest were mainly people that either lived or worked near mining sites. Additionally, 16 percent of respondents (N = 738) identified as women and about three-quarters (74 percent, N = 1,583) of the respondents were located (at the time when their phone number was collected) in areas covered by due diligence programmes (DDP) - at the time when their phone number was collected.

1.2. Main findings

Mining site field visits and mobile-based surveys provided important baseline data on economic, social, environmental and human rights situation from the perspective of miners and communities in eastern DRC. The highlights are as follows:

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- 1 The International Peace Information Service (IPIS) is an independent research institute providing tailored information, analysis and capacity enhancement to support those actors who want to realize a vision of durable peace, sustainable development and the fulfilment of human rights. For more information: <http://ipisresearch.be/>.
 - 2 Ulula provides software and analytics solutions to create more transparent and responsible supply chains. For more information: <http://ulula.com/>.
 - 3 North Kivu, South Kivu, Maniema, Ituri and Tanganyika provinces.

- **Impact of mining and income:** When asked about the effect of mining on their life, 46 percent of the mobile survey respondents said mining had made their life better, 35 percent reported it had made no change at all, while 12 percent said that it had made their lives worse (N = 473).⁴ However, nearly two-thirds of the respondents reported being unable to feed, clothe and house themselves or their families with their current incomes (N=397). 45 percent of the respondents indicated their incomes had decreased in the past year (N=491).⁵ While those numbers were similar in both DDP and non-DDP areas, data from the mining sites visits show that for 3T miners, the median weekly income per miner appears higher in areas covered by due diligence programmes than in the non DDP mines.⁶
- **Presence and interference of armed actors, including illegal taxation and forced labour:** Data from field visits shows that the Congolese national army (FARDC) or irregular armed groups were present on 35 percent mines sites and interfering in 26 percent of the mining sites included in this study (N = 623), with a strong difference between DDP mining sites (10 percent, N = 289) and non-DDP sites (40 percent, N = 334).⁷ We also noted a better performance in DDP mines regarding illegal taxation by an armed actor⁸ and forced labour.⁹ On the other hand, over 40 percent of respondents from the mobile survey reported that they are not getting paid for their work and around 20 percent are working to pay a debt¹⁰ (N=148). However, the survey question did not specify if the debt was related to mining operations.
- **Child labour:** The presence of children under 15 working in the mineral exploitation was reported in 16 percent of the mining sites visited (N = 238), most of them in the gold sector.¹¹ Over half of the mobile respondents (54 percent, N = 269) reported that they had seen children working in mines in the past six months.¹² However, it is possible that in the mobile survey a number of respondents in the same mining zone could have reported about the same incident.
- **Presence and support from state services, corruption and illegal taxation by non-armed actors:** State services are more present in DDP mines than in non-DDP mines and abusive taxation by state services seems to be less frequent in DDP mines.¹³ Half of all mobile survey respondents (50 percent, N = 179) indicated feeling supported by state services¹⁴ and a higher proportion of these individuals were in areas with due diligence programmes. Similarly, individuals in areas with due diligence had experienced or heard about corruption *less* often than their counterparts in non-due diligence areas.¹⁵
- **Violence and ethnic discrimination:** Overall, 47 percent of mobile survey respondents reported seeing or hearing an act of violence and 28 percent confirmed that they had experienced violence (N=306). Individuals were just as likely to witness or be a victim of violence in a DDP area as in a non-DDP area. Police or government services were the most reported perpetrators of violence.¹⁶ 36 percent of mobile survey respondents reported experiencing ethnic discrimination (N=290), and this figure was more or less comparable in both DDP and non- DDP areas.¹⁷
- **Safety in mines:** Mobile survey respondents in DDP areas reported witnessing or hearing about accidents at mine sites less often (41 percent, N = 329) than their counterparts in non-DDP areas (47 percent). An examination of the outcomes of mine accidents revealed that 52 percent of respondents

4 Cf. chapter 5.3.4. Effect of mining on individual life.

5 Cf. Chapter 5.2.3 Income.

6 Cf. Chapter 4.1.3 Mineral selling price and production.

7 Cf. Chapter 4.4.1 Presence and interference of FARDC or irregular armed groups

8 Cf. Chapter 4.4.2 Illegal taxation by FARDC or irregular armed groups.

9 Cf. Chapter 4.4.3 Forced labour.

10 Cf. Chapter 5.3.1 Labour.

11 Cf. Chapter 4.4.4 Child labour.

12 Cf. Chapter 5.4.5 Child labour.

13 Cf. Chapter 4.2.2 Taxation by state services.

14 The rest of the respondents did not find state services supportive (39 percent), did not know (7 percent) or thought this question does not apply to them (4 percent). Cf. Chapter 5.3.3 Presence and performance of state services.

15 Cf. Chapter 5.4.6 Corruption.

16 Cf. Chapter 5.5.2 Violence.

17 Cf. Chapter 5.5.5. Discrimination based on ethnic origin.

who reported witnessing or hearing about accidents (N=130) also reported that the accident resulted in someone's death.¹⁸

- **Environmental degradation:** In the mobile surveys, there was little difference between reports of deforestation, bush meat consumption, use of mercury and pollution of waterways in both DDP and non-DDP areas.¹⁹ During mining site visits, the use of mercury was found in about 35 percent of the gold sites (N = 284), accounting for 72 percent of the total population of gold miners working across all mine sites visited (N = 72,625).²⁰

18 Cf. Chapter 5.4.1 Health & Safety.

19 Cf. Chapter 5.4.2 Environmental impacts.

20 Cf. Chapter 4.3.

2. INTRODUCTION

The people of the Democratic Republic of Congo (DRC) have witnessed and experienced unimaginable suffering in the past three decades. Currently, the country is host to over 4 million internally displaced persons,²¹ a majority of whom live in eastern Congo as a result of mass migrations following the Rwandan genocide and protracted violence, rape and pillage during the Congo Wars (1996-2006). Human displacement and the large-scale violence witnessed in eastern DRC, are symptomatic of wider failures of sovereignty, state institutions and the mechanisms of governance in the Congo.

One of the effects of endemic state failure in Congo is that it has allowed for the mushrooming of a variety of armed groups, bandits and other informal organizations especially in the east of the country.²² Beginning at the turn of the century, many of these non-state armed groups took control of territory in eastern Congo as the control of the state waned and they proceeded to fund their operations through illegal taxation and various forms of racketeering that implicated artisanal mining and other economic activities.²³ As a consequence of the risk of financing armed groups through the production of coltan, cassiterite, wolframite, gold and their derivatives, governments in the Great Lakes Region and beyond, called for action leading to the U.S president signing into law the *Dodd–Frank Wall Street Reform and Consumer Protection Act* on 21 July 2010.²⁴ The law requires a US reporting companies to disclose whether any conflict minerals are used in the production or functionality of any of their products and, if so, whether these minerals were sourced in the DRC or any adjoining country. Other important multilateral initiatives include the creation of OECD Due Diligence Guidelines for Responsible Supply Chain of Minerals from Conflict-affected and High-risk areas (2011-2016).

The OECD guidelines for responsible supply chains provide a framework for detailed due diligence, which is defined as “an on-going, proactive and reactive process through which companies can ensure that they respect human rights and do not contribute to conflict”.²⁵

In 2011, the International Tin Association established the International Tin Supply Chain Initiative (ITSCI) whose aim was to “create responsible mineral supply chains that avoid contributing to conflict, human rights abuses, or other risks such as bribery”.²⁶ Other due diligence programmes (as defined by this study) include Tetrattech²⁷, Just Gold by IMPACT²⁸ and the German government-funded BGR project.²⁹ These due diligence programmes aim to do at least three things: first, they certify that minerals are conflict- free; secondly, they establish the provenance of minerals (traceability); and finally, they help strengthen the capacity of stakeholders at regional and national levels of the state to develop legal and policy-based frameworks that support a responsible and economically productive artisanal mining sector.³⁰

Existing efforts to analyse the impact of due diligence have largely focused on the degree of compliance of downstream companies with Dodd-Frank 1502. Few, if any, analyses have attempted to make sense of conflict minerals disclosure beyond Dodd-Frank 1502 requirements, therefore little is known about the

21 View report from Internal Displacement Monitoring Centre: <http://www.internal-displacement.org/countries/democratic-republic-of-the-congo>.

22 For a comprehensive review of the history and socio-political effects of armed groups in Congo see the Rift Valley Institute's Usalama Project Reports: <http://riftvalley.net/project/usalama-project>.

23 A number of authors make this claim, see: Spittaels S. & Hilgert F., *Mapping Conflict Motives: eastern DRC*, International Peace Information Service (IPI) Report, March 2008; Global Witness, “*Faced With A Gun, What Can You Do? War And The Militarisation Of Mining In eastern Congo*”, Global Witness, July 2009. For a recent article demonstrating how the conflict in eastern Congo has been coeval with artisanal mining, see: Kelly J., “*This mine has become our farmland: Critical perspectives on the coevolution of artisanal mining and conflict in the Democratic Republic of the Congo*”, Resource policy 40, 2014.

24 See Securities and Exchange Commission: <https://www.sec.gov/spotlight/dodd-frank/speccorpdisclosure.shtml>, accessed Dec 10, 2018.

25 OECD, *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, 2016, p. 13. Available at <http://www.oecd.org/corporate/mne/mining.htm>.

26 See ITSCI website: <https://www.itsci.org/purpose/>, accessed Dec 10, 2018.

27 See Tetrattech website: <http://www.tetrattech.com/en/projects/capacity-building-for-responsible-minerals-trade>.

28 See Impact website: <https://impacttransform.org/en/work/project/just-gold/>.

29 See BGR website: https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-DRC/CTC_DRC_node_en.html, accessed Dec 10, 2018.

30 See the websites of the aforementioned programmes.

impact of due diligence programmes on local communities in eastern Congo.

To assess how due diligence programmes are affecting upstream mining communities in areas of eastern DRC *not under the control of armed groups*, we undertook field surveys of mine sites and supplemented that data with information collected from mobile-phone surveys to individuals living in mining communities in the provinces of South Kivu, North Kivu, Maniema, Ituri and Tanganyika. Data collected from field surveys was collected between 2016-2018, whereas mobile survey data was collected from September to November 2018. The mobile-based surveys provided baseline data on economic, social, environmental and human rights from the perspective of miners and other individuals living in eastern DRC.

3. METHODOLOGY

3.1. Approach

The assessment of the impact of due diligence programmes in eastern DRC analysed social and human rights impacts based on relative income, governance, forced labour, child labour, violence (including gender-based violence), work conditions in artisanal mines, and security concerns due to the presence or interference of the *Forces Armées de la République Démocratique du Congo* (FARDC) and irregular armed groups.³¹ While the presence of FARDC soldiers in mining areas can be justified in some cases as being necessary to ensure the security of miners and local population, the soldiers are not supposed to participate or profit in any way from the exploitation or transport of minerals. As such, we will distinguish in this study FARDC presence from FARDC interference, meaning when undisciplined elements (“*éléments indisciplinés*”) are actively profiting from mineral exploitation and transport through monopoly of certain goods, illegal taxation, forced labour, roadblocks or other forms of control detailed in this report.

In this study, data collection campaigns were organised based on two different units of analysis:

- a. Mining site data - obtained via field surveys
- b. Individual community member information - obtained via mobile-phone surveys

3.1.1. Mining site data

Since 2009, IPIS in partnership with Congolese mining services from the Ministry of Mines and independent local Civil Society Organisations has taken part in a continuous programme mapping of artisanal and small-scale mining sites in eastern DRC. For this study, IPIS surveyors visited mine sites and trading centres (so-called *points de vente*) in two consecutive field missions, during which they collected phone numbers of community members, made observations, and conducted interviews with several key informants so as to complete an extensive questionnaire on each mine site (using the *OpenDataKit* tool). The methodology for site visit and trainings of surveyors is not developed as part of this report, but can be found in earlier IPIS publications.³²

This report analyses data from 2016 to 2018 collected by IPIS surveyors in mining sites in eastern Congo. The field data collected for this project was based on a similar field survey instrument as used in previous IPIS field visits thus enabling the combination of newly collected field data with field data gathered two years prior.

Five teams, each composed of two surveyors, were sent to one of the five provinces in eastern Congo (Tanganyika, Maniema, South Kivu, North Kivu and Ituri) on several missions. Each team was provided with an *InReach Garmin* satellite communicator to capture GPS coordinates of mines and to keep in daily contact with local IPIS coordinator in Bukavu (capital of South Kivu province). In order to maximize field work efficacy, surveyors were deployed in provinces where they originally live, thus building on their knowledge of the local security situation, transport possibilities and customs while minimizing potential communication barriers.

3.1.2. Individual community member information

Alongside completing in-depth questionnaires on mine sites and trading centers (using *OpenDataKit*),

31 Active irregular armed groups in the Kivus, Tanganyika, Ituri and Maniema regions include Mai -Mai Mazembe, Mai-Mai Hapa na Pale, FDLR, CNPSC (Yakutumba), Raïa Mutomboki and others.

32 Weyns, Y, Hoex L, Matthysen K., “*Analysis of the interactive map of artisanal mining areas in eastern DR Congo: 2015 update*”, IPIS Report, October 2016. Available at <http://ipisresearch.be/publication/analysis-interactive-map-artisanal-mining-areas-eastern-dr-congo-2/>.

IPIS surveyors were tasked with collecting phone numbers from community members as part of this project. Those informants (later called “respondents” once they participated in the study) included miners, mineral traders (or so-called *négociants*), small business people, local officials and villagers. During field surveys, emphasis was placed on collecting phone numbers from women living or working in artisanal mining communities by targeting locations where women could be reached during the day such as restaurants, market stalls, religious centres, as well as mining sites.

8,735 informants were informed of the purpose of the mobile surveys and volunteered to be contacted. This database of 8,735 phone numbers was contacted by phone and provided Interactive Voice Responses to three sets of survey questions designed and translated into local Swahili so as to anonymously capture the responses of community members, regardless of their literacy rate. We collected the perceptions and experiences of individual community members on social and human rights indicators in areas where due diligence programmes (DDP) have been deployed and in other comparable areas lacking DDP.

The three mobile surveys had between 8 to 15 questions (depending on skip logic choices) and was estimated to take an individual between 3 to 6 minutes complete (see annex 1).

Surveys were designed to enable the collection of information on basic living and working conditions in artisanal mining communities in line with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.³³ The OECD guidance urges that special attention be placed to eliminate serious abuses such as torture, forced labour, child labour and sexual violence, or support of non-state armed groups (through illegal procurement of minerals or illegal taxation).³⁴

3.1.3. Sampling and grouping

Information on mineral production, security and due diligence initiatives collected by IPIS since 2009 was used to create specific mining zones that were drawn using Geographical Information Systems linked to the IPIS database of artisanal and small-scale mining sites in eastern DRC.³⁵ Those mining zones facilitated the preparation and planning of field missions by IPIS surveyors and were later used in the data analysis phase in order to group collected phone numbers by the presence or absence of due diligence programmes (DDP).

Phone numbers were collected in areas where both artisanal gold and 3T - cassiterite (tin), coltan (tantalum) and wolframite (tungsten) - are extracted. The ITA International Tin Supply Chain Initiative (ITSCI) is active in the 3T artisanal mining sector and other relatively small-scale pilot programmes covering gold supply chains have been set up in specific areas in eastern DRC. These include projects by the NGO Impact (formerly Partnership Africa Canada or PAC), the German Federal Institute for Geosciences and Natural Resources (BGR), and the US-based consulting services provider TetraTech, Inc.

In total, 19 mining zones were created, 11 with the presence of due diligence programmes (DDP), and 8 control zones (non-DDP) (see Table 1). Each zone encompassed several mining sites and one or more trading centres. Phone numbers were collected at mining sites as well as in trading centres and adjacent villages in order to cover the whole mining community as best as possible.

It is important to note that in the 11 DDP mining zones where due diligence programmes (DDP) were known to operate, either as a traceability mechanism or as a pilot for gold, not all the mining sites were necessarily part of the programme on the ground. While we did our best to distinguish areas with or

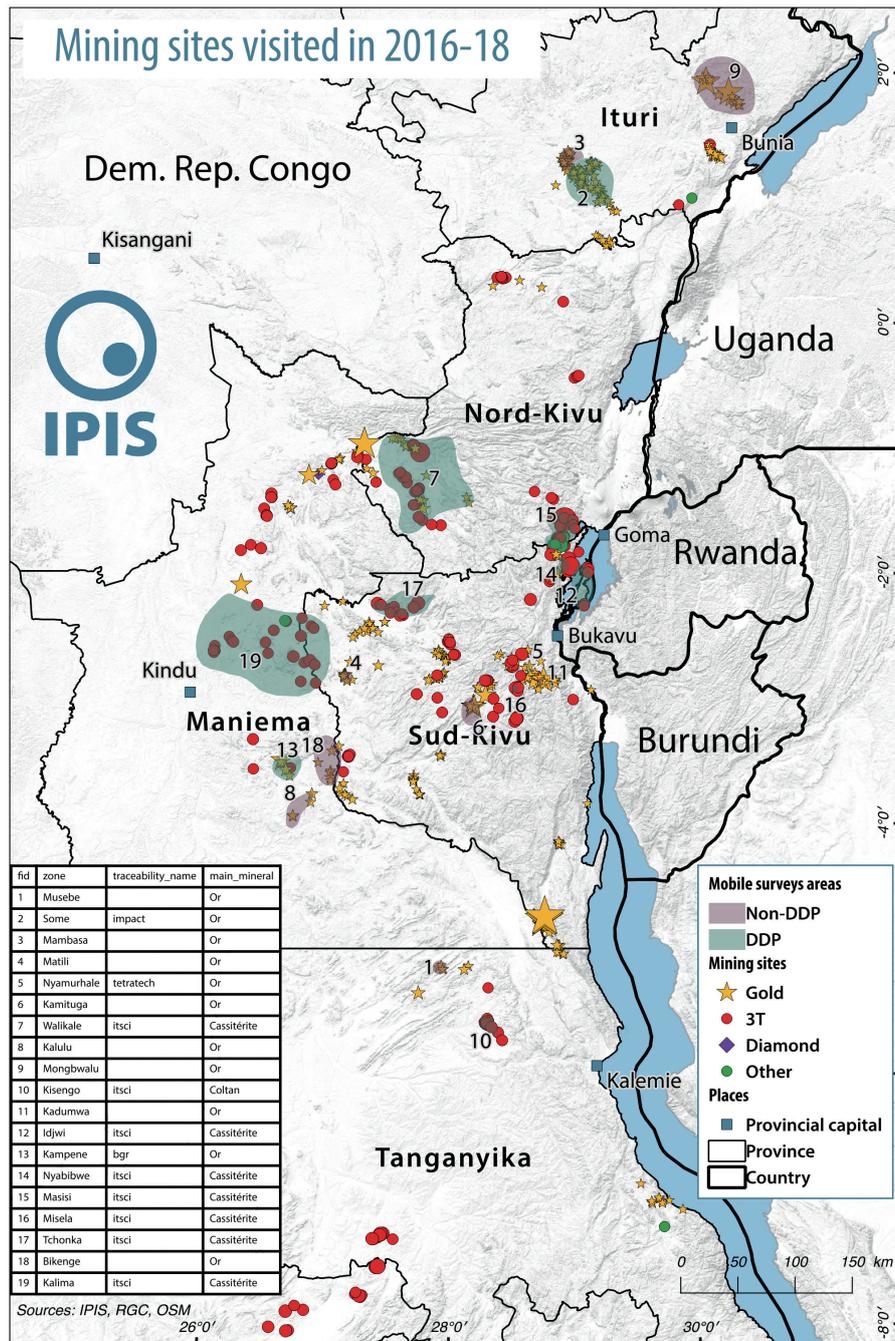
33 OECD (2016), *op. cit.*

34 OECD (2016), *op. cit.*, pp. 20-22.

35 Analysis of the interactive map of artisanal mining areas in eastern DR Congo, November 2013 (analysis and web map at <http://ipisresearch.be/publication/analysis-interactive-map-artisanal-mining-areas-eastern-dr-congo/>); Analysis of the interactive map of artisanal mining areas in eastern DRC: May 2014 update (analysis and web map at <http://ipisresearch.be/publication/analysis-interactive-map-artisanal-mining-areas-eastern-drc-may-2014-update/>); Analysis of the interactive map of artisanal mining areas in eastern DRC, 2015 update (analysis and web map at: <http://ipisresearch.be/publication/analysis-interactive-map-artisanal-mining-areas-eastern-dr-congo-2/>).

without DDP, it was not always possible to separate mining sites known to be covered with those that were not yet covered by the programmes.

For instance, the area of Walikale in North Kivu was considered during the data analysis phase of this project as a DDP zone for 3Ts mines and non-DDP for gold mining sites. But because it was not possible to distinguish between phone numbers of gold and 3Ts miners (without identifying villagers), all phone numbers collected in this area were considered as covered by a due diligence programme. The rationale behind the creation of those 19 mining zones was to group by phone numbers collected on the ground and to assess if the presence of due diligence programmes have a good impact on the mining area in which they operate, including mining sites and selling points that are in the vicinity of their operations.



Map 1: DDP and non-DDP zones in eastern Congo

Table 1: DDP and non-DDP zones

Zones	Province	Main Minerals	DDP
DDP zones			
Kisengo	Tanganyika	Coltan	ITSCI
Kampene	Maniema	Gold	BGR
Kalima	Maniema	Cassiterite, wolframite	ITSCI
Nyamurhale	South Kivu	Gold	TetraTech
Nyabibwe	South Kivu	Cassiterite	ITSCI
Misela	South Kivu	Cassiterite	ITSCI
Tchonka	South Kivu	Cassiterite	ITSCI
Idwji	South Kivu	Cassiterite, Coltan, wolframite	ITSCI
Walikale	North Kivu	Cassiterite, Gold	ITSCI
Masisi	North Kivu	Cassiterite, Gold, Tourmaline, Coltan	ITSCI
Somé	Ituri	Gold	Impact
Non-DDP zones			
Musebe	Tanganyika	Gold	N/A
Bikenge	Maniema	Gold	N/A
Kalulu	Maniema	Gold	N/A
Matili	South Kivu	Gold	N/A
Kamituga	South Kivu	Gold	N/A
Kadumwa	South Kivu	Gold	N/A
Mambasa	Ituri	Gold	N/A
Mongbwalu	Ituri	Gold	N/A

3.2. Detailed methodology

3.2.1. Mining sites visits

Surveyors at mine sites usually spent one day making observations and conducting interviews with miners, mine managers and local officials. To be able to collect sufficient phone numbers per zone, the surveyors sometimes stayed for two to three days in trading centres. They used a smartphone to collect data by completing a specific questionnaire that was uploaded on *Open Data Kit* (ODK). After each visit, information gathered was captured in a site-specific questionnaire that was subsequently submitted to a secure server for download and statistical analysis.

The ODK questionnaire developed by IPIS to collect field information on mineral production, security and human rights situation at mining sites in eastern Congo is the result of almost ten years of continuous Artisanal Small-scale Mining (ASM) mapping efforts in partnership with the Congolese Ministry of Mines and most of the data is publicly available through an interactive webmap and other IPIS publications.

The questionnaire covers various aspects of the small-scale mining business in conflict-affected areas

such as:

- number of miners and mine managers,
- information about women working in the mine and in businesses related to mining activities,
- child labour,
- technical and commercial aspects of mineral production,
- environmental impact of production (e.g. mercury treatment in gold mining),
- presence and functioning of artisanal mining cooperatives,
- responsible sourcing status,
- presence and interference of FARDC or non-state armed groups in the mine or adjacent village (incl. illegal taxation, pillage, forced labour, illegal trade of minerals),
- presence and functioning of state services in the mine.

3.2.2. Mobile surveys

Unlike face-to-face interviews that can be expensive and time-consuming, mobile surveys allow for cost-effective and timely data collection.³⁶ According to Dillon (2012), the centralized nature of mobile data collection also enables rapid detection and correction of errors, interactive participation by the primary researchers in real time, and streamlined data entry.³⁷ Questionnaires used for mobile surveys were designed to assess the impact of due diligence programmes based on individual perceptions and experiences of social and human rights indicators outlined in the OECD *Due Diligence Guidance for Responsible Supply Chains of Minerals for Conflict Affected and High Risk Areas*.

Design and deployment strategy of mobile survey questionnaires took into consideration literacy levels of participants, local dialect of Swahili spoken in the region, availability of participants at specific times of the day and week, network coverage and the need for respondents to have prior and informed consent and knowledge of the purpose of the survey.

Before requesting a phone number, IPIS field surveyors explained to potential participants the purpose of the survey. Furthermore, the first question of the *interactive voice response* (IVR) mobile survey requested the consent of each participant before proceeding with the rest of the questions.

Use of IVR was preferred to SMS due to low literacy levels in rural areas of eastern DRC and to shorten the survey completion time. A local journalist was hired to record all the questions in local Swahili for ease of understanding by participants.

To ensure that participants understood the purpose and modality of this study, IPIS surveyors explained the goals of the research, the type of surveys they could expect and how they would receive and respond to questions posed. Surveyors explained that by volunteering their phone number, respondents were agreeing to be contacted by phone with the request to participate in a study that would assess the impact of mining activities on their lives. In addition, they were told the study would be in the form of questions over the phone and that they would receive three calls over a period of two months asking

36 Croke K., Dabalén A., Demombyes G., Giugale M. & Hoogeveen J., *Collecting high frequency panel data in Africa using mobile phone interviews*, The World Bank, Poverty Reduction and Economic Management Unit, Africa Region, *Policy Research Working Paper 6097*, June 2012, p. 24.

37 Dillon B., *Using Mobile Phones to Collect Panel Data in Developing Countries*, in *Journal of International Development* 24, 2012, p. 526. To understand the benefits of mobile data collection over face-face interviews see: Schrober et al., *Precision and Disclosure in Text and Voice Interviews on Smartphones*, in *PLoS ONE*, 10(6): June 10, 2015.

them to answer three different surveys.

IPIS surveyors informed potential participants that all responses would be treated anonymously. They were also informed that completion of each survey would be incentivized by 1 000 FC of mobile credit.

IPIS surveyors collected 8 735 phone numbers of potential participants from artisanal mines, adjacent villages and mineral trading posts in Ituri, North Kivu, South Kivu, Maniema and Tanganyika provinces. From this database of phone contacts, a total of 1 583 valid responses were collected from all three surveys.

Three surveys were designed to capture both participants' perception and experience with regard to the impact of mining activities on their lives. Broadly speaking, the three surveys center around four topics: demographics, conditions of extraction, impact of mining and serious abuses (Table 2). The complete surveys are available in Annex I.

Table 2: Survey questions by topic

	Survey 1	Survey 2	Survey 3
Demographics	<ul style="list-style-type: none"> • Occupation • Residential proximity to the mine • Length of residence in the area 	<ul style="list-style-type: none"> • Gender • Occupation 	<ul style="list-style-type: none"> • Gender • Occupation
Conditions of extraction	<ul style="list-style-type: none"> • Income • Well-being • Awareness of due diligence 		<ul style="list-style-type: none"> • Effects of governance by state agencies
Impact of mining		<ul style="list-style-type: none"> • Mine accidents • Environmental impacts 	
Serious abuses		<ul style="list-style-type: none"> • Violence • Gender violence • Corruption • Discrimination 	<ul style="list-style-type: none"> • Child labour • Forced labour

3.2.3. Participation of women

The proportion of respondents that identified as women in our study was about 16 percent (see Chapter 5.2.2 for more details). Low participation by women could reflect the vulnerability of women due to double marginalization. First, a significant proportion of the rural population is illiterate.³⁸ Secondly, several of our surveyors reported that many women in rural communities do not own a mobile phone, in some cases because their husbands do not allow them to have one even when they can afford one, in other cases because they simply lack the means.³⁹ Lower literacy and mobile phone penetration among women, coupled with relatively lower numbers of women in mining communities, all combined to significantly reduce the number of women respondents in our mobile survey study, despite specific attempts to reach out to as many women as possible during fieldwork missions.

3.2.4. Response rates of mobile surveys

A total of 7 172 calls were sent out to the database of 8 735 phone numbers (a proportion of the collected numbers were deemed invalid). From these, 1 583 responses were captured from all three surveys, providing an aggregated response rate of 22 percent, which is in line with literature review findings

38 Since mobile surveys were done using IVR, literacy demand was reduced but not entirely eliminated. To participate in our study an individual needed to at the very least know how to answer a phone and, more importantly, to be able to match keys on the phone that correspond to stated answer options.

39 This gender gap in mobile phone ownership in the DRC is confirmed by GSMA, *The Mobile Economy: Africa 2016*, <https://www.gsmaintelligence.com/research/?file=97928efe09cdba2864cdcfdad1a2f58c&download>, 2016, pp. 44-45, specifying that women in the DRC are 33 percent less likely to own a mobile phone than men.

showing IVR survey response rates ranging from 8 to 40 percent in low- and middle-income countries (see Gibson *et al.* 2017).⁴⁰ Table 3 shows the number of respondents per province.

Table 3: Number of respondents per province

	Survey 1	Survey 2	Survey 3	Total
Ituri	46	25	22	93
Maniema	193	109	104	406
North Kivu	139	69	76	284
South Kivu	434	152	109	695
Tanganyika	33	31	41	105
Total	845	386	352	1583

Table 4 shows the response rates per province for the three surveys.

Table 4: Response rates per province as percentages

	Survey 1	Survey 2	Survey 3	Total
Ituri	6	3	3	12
Maniema	19.5	11	10.5	41
North Kivu	8.5	4	4.5	17
South Kivu	13	4.5	3.5	21
Tanganyika	7.5	7	9.5	24
Total	12	5	5	22

3.3. Lessons learnt

Although mobile phone usage in the DRC has been lagging behind many other African countries, experts suggest that mobile penetration in 2015 was ten times higher than in 2005.⁴¹ In general, mobile phones are prevalent in urban centres in the DRC, where tele-communication systems operate relatively well when not hampered by blackouts or occasional network overload. The situation is quite different in remote rural areas, where small-scale artisanal mines tend to be located. In these areas, poor infrastructure, frequent power interruptions, patchy network coverage and limited mobile phone access make data collection through mobile surveys challenging.

To surmount network penetration challenges, call frequency was increased from once per day to two times per day. Furthermore, because miners often leave their phones at home when in the mining site, calls were concentrated in mornings from (7 am to 11 am) and evenings from (5 pm to 9 pm), as well as Saturdays and Sundays (all day).

To improve future response rates, we will also shorten the surveys to less than 10 questions for we observed that having more than 10 questions (as was the case in survey 2 and 3) contributed to higher drop off rates.

In conclusion, due to infrastructure and network problems in the Congolese context, there is a significant gap to be bridged between the theoretical advantages of large-scale deployment of mobile surveys and the realities on the ground.

40 Gibson D.G., Pereira A., Farrenkopf B.A., Labrique A.B., Pariyo G.W. & Hyder A.A., *Mobile Phone Surveys for Collecting Population-Level Estimates in Low- and Middle-Income Countries: A Literature Review*, in *Journal of Medical Internet Research* 19 (5), 2017.

41 GSMA, *Digital Inclusion and Mobile Sector Taxation in the Democratic Republic of the Congo*, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/01/gsma-digital-inclusion-and-mobile-sector-taxation-in-the-democratic-republic-of-the-congo-report.pdf>, November 2015, p. 4, p. 10.

4. ANALYSIS ODK DATA 2016 - 2018

In this section, ODK data collected by IPIS surveyors in 623 mining sites in eastern Congo⁴² in the period 2016 – 2018 is presented. Based on different sources from partner organisations and direct observations during field visits, those mining sites have been grouped by the presence or absence of due diligence programmes (DDP) as described in section 3.1.3.

4.1. Demographics

4.1.1. Miners

In the period 2016 - 2018 a total of 623 mines were visited (out of the 2 282 mining sites surveyed by IPIS since 2009). These mines employ an estimated of 115 539 artisanal miners (out of an estimation of 329 820 miners on mining sites surveyed by IPIS since 2009). About 52 percent of the mining sites (N = 623) are 3Ts mines, and 47 percent are gold mines (see Table 5 and Chart 1). Some of these sites have more than one mineral and can be producing both 3Ts and gold, or none of those. This explains why the sum of sites and workers numbers for 3Ts and gold might differ from the total number of sites and workers. Table 6 shows the number of sites visited by province in the period from 2016 – 2018 (including number of workers).

Table 5: Mines visited in 2016-2018 compared with all mines including in IPIS database

Due diligence	Number of sites (2016-18)	Number of workers (2016-18)	Number of sites (2009-18)	Number of workers* (2009-18)
All mines				
DDP	289	40 202	556	69 731
Non-DDP	334	75 337	1 726	286 905
3Ts mines				
DDP	256	35 636	428	61 423
Non-DDP	66	5 740	236	26 937
Gold mines				
DDP	28	4 158	123	7 900
Non-DDP	264	69 412	1432	248 147

*For sites visited more than once, the latest available information is used.

42 In the provinces of Haut-Lomami, Ituri, Maniema, Nord-Kivu, Sud-Kivu, Tanganyika.

Chart 1: Comparison of number of sites and miners in DDP versus non-DDP mines for sites visited in 2016-18

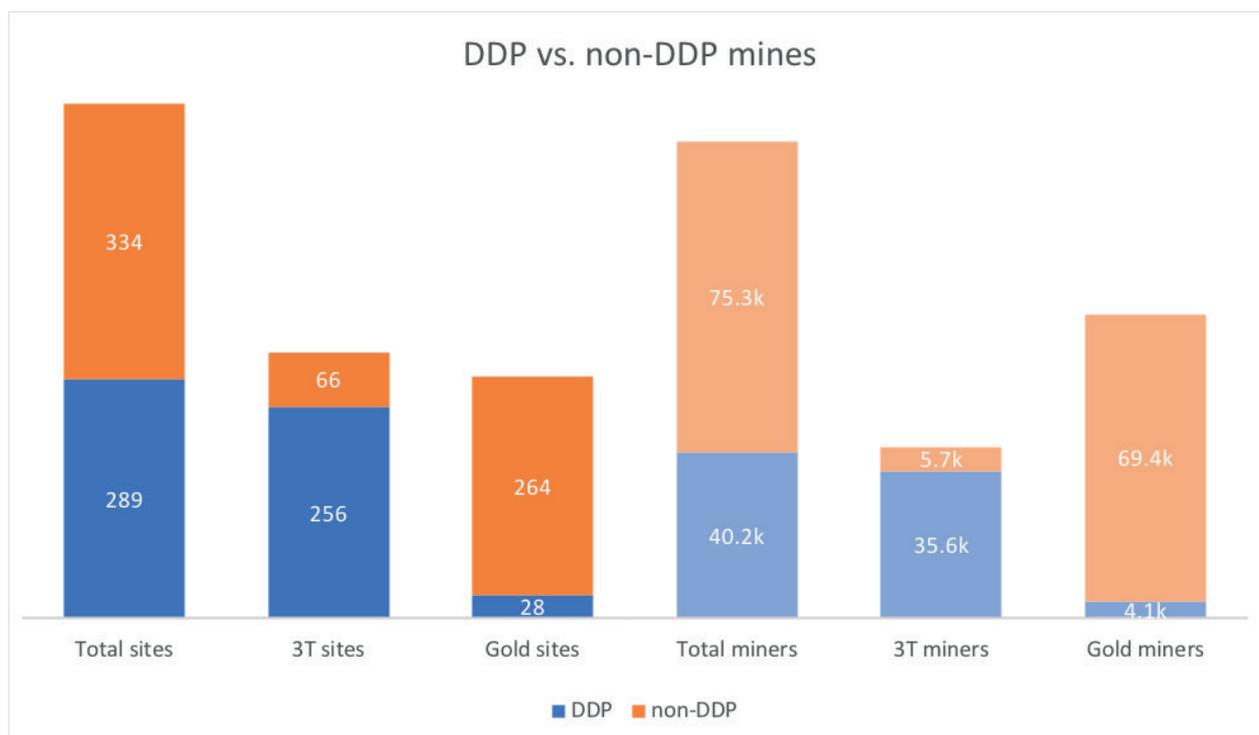


Table 6: Number of sites visited in 2016-18 per province

Province	Number of mines	Number of workers
Haut-Lomami	27	5 375
Ituri	59	10 486
Maniema	99	17 130
Nord-Kivu	102	17 595
Sud-Kivu	269	53 870
Tanganyika	67	11 083

The average size of a mining site is 185 workers (N = 623). The average number of workers is greater for gold mining sites (252 workers) than 3Ts mining sites (128 workers) (see Table 7).

Table 7: Average number of workers by minerals in due diligence vs. non-due diligence context

Average number of workers	Gold	3Ts
All mines	252 (N = 291)	128 (N = 322)
DDP	148 (N = 28)	139 (N = 256)
Non-DDP	264 (N = 263)	87 (N = 66)

4.1.2. Women working in the mine

The presence of women workers on mining sites was only addressed by IPIS surveyors after 2017, following a change in the questionnaire design. Women were present on 47 percent of the 239 mines where data

was collected regarding their presence. We observe that the share of sites on which women workers are present is lower in the due diligence group (39 percent, N = 112), than in the non-due diligence group (54 percent, N = 127).

Comparing presence of female workers in gold mines versus 3Ts mines, we observe that the proportion of gold mines with female workers (55 percent, N = 139) is higher than the proportion of 3Ts mines with female workers (36 percent, N = 94) (see Table 8). This can potentially be explained by a number of factors inherent to the different type of mineral exploitation between gold and 3Ts, such as organisation of the work, labour intensity and types of tasks (panning, carrying, washing tailings), localisation and type of settlements. Gold mining sites could be more isolated from the villages, therefore more women could work on the site with their husbands, rather than spending the day in a support village carrying other domestic or agricultural tasks. More research is necessary to understand this difference.

Table 8: Percentage of mines where women workers are present

Due diligence	Percentage Gold mines with female workers	Percentage 3Ts mines with female workers
All mines	55 percent (N = 139)	36 percent (N = 94)
DDP	48 percent (N = 21)	38 percent (N = 87)
Non-DDP	56 percent (N = 118)	29 percent (N = 7)

On the 239 mining sites where data regarding the presence of women was collected, we found that the share of women represented between 11 percent and 27 percent of the 41,138 workers. By extrapolating these numbers to the total number of workers in mining sites visited in 2016-18 (115,539 workers), we can estimate the number of women workers to be between 12,709 to 31,195 individuals.

4.1.3. Mineral selling price and production

Comparison of median selling prices of minerals extracted from due diligence mines versus non-due diligence mines shows almost no difference for cassiterite, a higher median price for coltan from due diligence mines, and a lower median price for gold from due diligence mines. (see Table 9)

Table 9: Median selling price in due diligence vs. non-due diligence context

Due diligence	Cassiterite (usd/kg)	Coltan (usd/kg)	Gold (usd/g)
DDP	5,19	30,48	38,53
Non-DDP	5,00	21,74	47,41

The data for average weekly production by mineral at due diligence versus non-due diligence sites show a similar trend (see Table 10).

Table 10: Average weekly site production in due diligence vs. non-due diligence context

Due diligence	Cassiterite (kg)	Coltan (kg)	Gold (g)
DDP	1 311	360	73
Non-DDP	1 032	271	184

The low median price and average production for gold mining sites that are part of a due diligence area, could be explained by the limited number of pilot programmes operating in the gold supply chain. The gold mining sites in this study that are considered to be part of a due diligence programme are located in three different zones (Some in Ituri, Nyamurhale in South Kivu and Kampene in Maniema). We know

from partner organisations piloting these efforts that the official production numbers that are recorded as part of their activities are smaller than the real estimated production of those areas.

Miners that are part of these pilot programmes officially record production amounts and are subject to pay official taxation for gold production and export, while being constrained to receive a price per gram that is in line with the international market. Therefore, in the current context, it is difficult for them to compete with the prices offered on the informal market, which are known to be higher due to tax evasion, fraudulent border crossing and money laundering practices documented in the studies of local partner organisations.⁴³

Based on previous research,⁴⁴ we know that a miner’s income represents more or less 50 percent of his weekly revenue. With these numbers in mind, the average or median weekly income per miner based on this formula, for each mineral (see Table 11):

$$0.5 \text{ of average or median of (weekly production per site * selling price per site) / number of workers per site.}$$

Table 11: Average weekly income per miner in due diligence vs. non-due diligence context

Due diligence	Cassiterite (usd)	Coltan (usd)	Gold (usd)
DDP	20,58 (N = 196)	30,89 (N = 40)	17,96 (N = 28)
Non-DDP	33,94 (N = 48)	25,11 (N = 10)	29,22 (N = 237)

Because the weekly income per miner varies from 0,5 USD to 300 USD in a few mining sites that are clearly standing as outliers in our dataset, we used the median weekly income per miner instead (see Table 12).

Table 12: Median weekly income per miner in due diligence vs. non-due diligence context

Due diligence	Cassiterite (usd)	Coltan (usd)	Gold (usd)
DDP	12,94 (N = 196)	16,99 (N = 40)	11,94 (N = 28)
Non-DDP	11,10 (N = 48)	10,62 (N = 10)	17,22 (N = 237)

The small number of DDP gold mining sites that were surveyed as part of this study might explain the lower median weekly income for gold miners. Otherwise, we noted that gold miners in non-DDP sites have a higher median weekly income than cassiterite miners in areas covered by due diligence efforts.

In several mining sites (Mukombe, Ngunde, Lutala) in the DDP zone of Kalima, miners complained about the low price for cassiterite (8,000FC/kg) imposed by local mineral traders.

43 Bafilemba F, Leshnev S. “Congo’s Conflict Gold Rush: Bringing gold into the legal trade in the Democratic Republic of Congo”. *The Enough Project*. April 2015. Available at: <https://enoughproject.org/reports/congos-conflict-gold-rush>.

44 Weyns, Y, Hoex L, Matthysen K. “Analysis of the interactive map of artisanal mining areas in eastern DR Congo: 2015 update”. *International Peace Information Service*. October 2016. Available at <http://ipisresearch.be/publication/analysis-interactive-map-artisanal-mining-areas-eastern-dr-congo-2/>.

4.2. Conditions of extraction

4.2.1. Miner cooperatives

The Congolese mining code⁴⁵, the *Réglement Minier*⁴⁶ and several ministerial decrees⁴⁷, regulate artisanal and small-scale mining in DRC. According to the law, artisanal miners need to hold a license, have to be member of a mining cooperative and have to work in so-called Artisanal Exploitation Zones (ZEA), designated by the Congolese Mapping Service for Mining (*Cadastre Minier*).

Mining cooperatives are present in about 74 percent of the mines that were visited starting in 2016 (N =623). Cooperatives were in 83 percent of mines covered by due diligence programmes, whereas they were present in 66 percent of non-due diligence mines. This means a vast majority of the 623 mines visited appear to have mining cooperatives.

Cooperatives can request the *Division des Mines* to re-zone an area to make it a ZEA. Although cooperatives are supposed to reinforce solidarity, improve working conditions, empower their members and increase miners' negotiating power in order to promote higher revenues, the reality is they deviate from these roles. A lot of controversy surrounds miner cooperatives because several have become instruments through which local elites exploit miners.⁴⁸ This claim was confirmed by field data collected by IPIS surveyors who noted that in some mines or even entire mining zones, artisanal miners distrust cooperatives. They recorded comments such as **“cooperatives do not defend the interests of miners, and do not help them increase their production”** in several cassiterite mines in the zone of Masisi, and in almost all the coltan mines which were visited in the Kisengo zone (both zones are considered covered by ITSCI). In mines in Kisengo, miners complained that cooperatives no longer provide mining and safety equipment to them. In several gold mines in Ituri, miners perceived cooperatives as being instrumentalized by local elites so as to impose extra taxes.

In several cassiterite mining sites in the DDP zone of Kalima, miners complained that they lack appropriate equipment to work efficiently in the mines. For example, IPIS surveyors observed numerous female miners digging in the mining site of Lubile (Chantier 30) using machetes.

4.2.2. Taxation by state services

Taxation on small-scale mining in the DRC is a complex matter due to contradictions in the laws underpinning land rights and the lack of a transparent land governance framework. Scholars argue that land use in DRC is managed by a multitude of systems, practices and institutional frameworks including a statutory land system, customary systems and a variety of informal land governance practices.⁴⁹ Not only do these overlapping systems lack harmonization, they each have different rules, rights and obligations, making land disputes very difficult to resolve.

Three official state services are permitted to levy taxes on mineral production on a mining sites⁵⁰: SAEMAPE (*Service d'Assistance et d'Encadrement es Mines Artisanales et de Petit Echelle*, formerly SAESSCAM), the provincial *Division des Mines*, and customary authorities (*chefferie*).

45 Journal Officiel de la République Démocratique du Congo, *Loi n°18/001 du 9 mars 2018, modifiant et complétant la Loi n°007/2002 du 11 juillet 2002 portant Code Minier*, art. 5, 97-114, 28 March 2018, pp. 17-18; 36-41.

46 Décret n°038/2003 du 26 mars 2003 portant Règlement Minier, Kinshasa, 26 March 2003.

47 E.g. Ministère des Mines, *Arrêté ministériel n°0706/CAB.MIN/MINES/01/2010 portant mesures urgentes d'encadrement de la décision de suspension des activités minières dans les provinces du Maniema, Nord-Kivu et Sud-Kivu*.

48 De Haan J. & Geenen S., *Mining cooperatives in Eastern DRC. The interplay between historical power relations and formal institutions*, in *The Extractive Industries and Societies 3* (3), 2016, p. 830.

49 For an overview of land issues in eastern Congo see: Vlassenroot, K., *Dealing with land issues and conflict in eastern Congo: towards an integrated and participatory approach*, Report on seminar held in Brussels on 20-21, 2012. More detailed discussion can be found in: Vlassenroot, K & Huggins, C., *Land, migration and conflict in eastern DRC*, in *From the ground up: land rights, conflict and peace in Sub-Saharan Africa*, edited by Huggins, C & Clover, J. Institute for security Studies, 2005:115-194.

50 De Brier G. & Merket H. "Artisanal Gold Monitoring Pilot in Mambasa, Ituri". *International Peace Information Service*. September 2017. Available at <http://ipisresearch.be/publication/artisanal-gold-monitoring-pilot/?hilitte=percent27mambasa percent27&highlight=mambasa>.

Table 13: Presence of and taxation by state services

Due diligence	Percentage of mines where at least one state service is present	Percentage of mines where at least one state service is levying taxation	Percentage of mines where at least one state service is levying taxation (other than SAEMAPE, Division des Mines or Chefferie)
DDP (N = 289)	93 percent	70 percent	7 percent
Non-DDP (N = 334)	84 percent	81 percent	20 percent

As we can see in Table 13, on most of the mining sites at least one state service is present. Most of these services are levying taxation, legal or illegal, legitimate or not. If we exclude SAEMAPE, *Division des Mines* and customary authorities, we see that some other state services (such as *Police des Mines*, DGI, or ANR)⁵¹ are still levying taxation in 7 percent of DDP mines (N=289) versus 20 percent of non-DDP mining sites (N=334). According to witnesses interviewed at the gold mine G22 in the non-DDP zone of Kamituga, **“the *Police des Mines* arrives frequently in the mine to arrest and fetter miners, forcing them thus to pay a fine”**. A witness in the gold mine Camp 3 in the Mongbwalu zone explained how the behaviour of state agents is perceived by miners: **“State services are mere tax collectors; they collect money, accompanied by *Police des Mines* to intimidate the miners”**.

State services imposing taxes, are supposed to give the tax payer a receipt upon tax payment. Not providing a receipt can be considered an indication of an irregular tax transaction. The frequency of not providing a tax receipt upon tax payment was reported less frequently in DDP mines (7 percent, N = 289) than in non-DDP mines (21 percent, N = 334).

In particular cases, SAEMAPE and *Division des Mines* do not levy taxation directly at the mining sites: e.g. in the zone of Kisengo, it is the private company Mining Mineral Resources (MMR), owner of several mines in the region, that pays the taxes which state services raise on mining operations.

4.3. Environmental impact of mining

Mercury treatment, used to extract gold from ore in artisanal gold mining, is a major source of soil and water contamination, posing serious health risks to miners and community members living in the vicinity of gold mines.⁵² In about 35 percent of the monitored gold mines (N = 284) mercury treatment is used.

About 72 percent of gold miners surveyed (N = 72 625) in this study work on a mining site where mercury is used. The number of gold mining sites covered by due diligence efforts in eastern DRC is currently too low to compare due diligence and non-due diligence contexts.

4.4. Serious abuses

4.4.1. Presence and interference of FARDC or irregular armed groups

IPIS defines the presence of an armed actor as the presence in a mining site or the control of access roads to a mining site by FARDC soldiers or by any armed group. Police or *Police des Mines* agents, forest guards, migration or intelligence officers are not considered as armed actors in this context.

Overall, FARDC or irregular armed groups are present on 35 percent of the mining sites (N = 623) (see Table 14).

Table 14: Percentage of mines and workers working in a mining site where at least one armed actor is present

51 DGI = Direction Générale des Impôts; ANR = Agence Nationale de Renseignements.

52 Esdaile J.M. & Chalker, J.M., *The Mercury Problem in Artisanal and Small-Scale Mining*, in *Chemistry – A European Journal* 24 (27), 2018, p. 6906.

Due diligence	Percentage of mines where at least one armed actor is present	Percentage of workers working in a mining site where at least one armed actor is present
All mines	35 percent (N = 623)	35 percent (N = 115 539)
DDP	21 percent (N = 289)	19 percent (N = 40 202)
Non-DDP	48 percent (N = 334)	43 percent (N = 75 337)

Based on these numbers, we see a strong decrease in the presence of armed actors in areas where due diligence efforts are implemented but we don't know if due diligence efforts discourage the presence of these actors or if these efforts are mainly deployed in areas where these actors are less present (or a mix of both). At the same time, the presence of armed actors remains important in due diligence areas. This is because the presence of FARDC⁵³ in or around mining sites is not, *per se*, related to the criteria for establishing due diligence programmes in an area.

IPIS developed the concept of interference in mining activities, which is defined as the presence of an armed group or the presence of undisciplined FARDC elements (*"militaires indisciplinés"*). Undisciplined FARDC elements conduct illegal activities linked with the exploitation of minerals, such as illegal taxation, forced labour, commerce or monopoly of certain goods, buying or selling minerals or digging themselves.

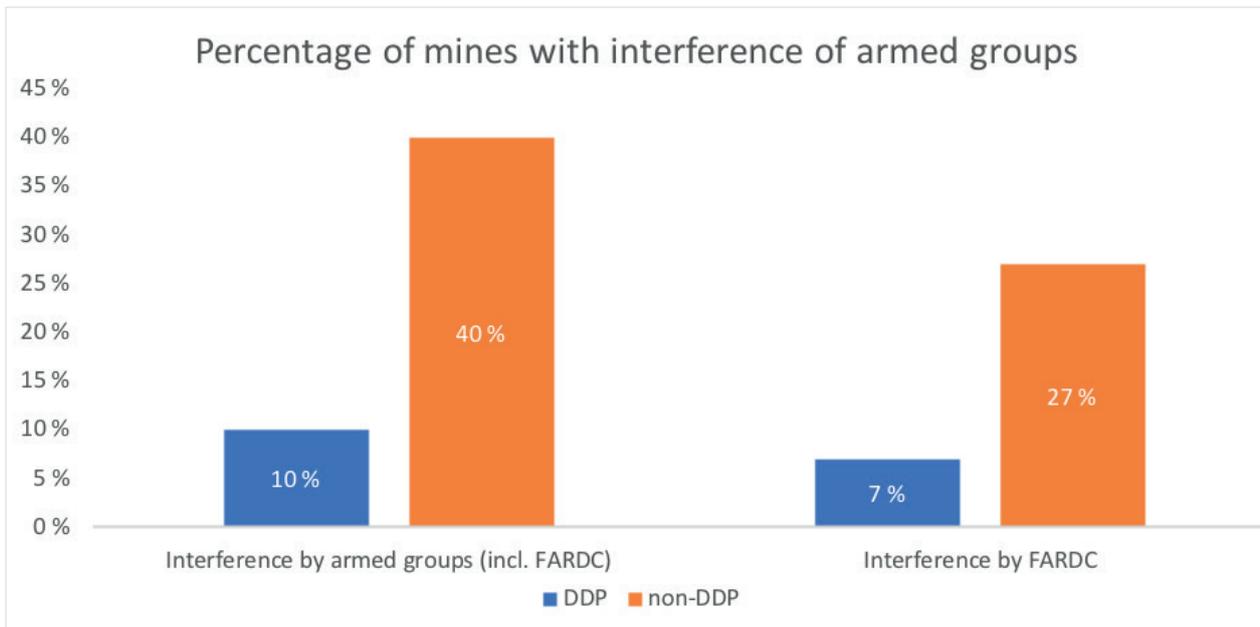
Interference by FARDC or irregular armed forces was noticed in almost 26 percent of the mines (N = 623), with a strong difference between mining sites with due diligence (10 percent, N = 289) and without due diligence (40 percent, N = 334) (see Table 15 and Chart 2).

Table 15: Percentage of mines and workers working in a mining site where at least one armed actor is interfering with mineral exploitation

Due diligence	Percentage of mines where at least one armed actor is interfering	Percentage of workers working in a mining site where at least one armed actor is interfering
All mines	26 percent (N = 623)	28 percent (N = 115 539)
DDP	10 percent (N = 289)	8 percent (N = 40 202)
Non-DDP	40 percent (N = 334)	38 percent (N = 75 337)

Chart 2: Percentage of mines where interference of armed groups was observed

53 FARDC is present in or near 28 of all the mines which were visited (N = 623), with a lower share (18 percent, N = 289) in the group of due diligence mines, compared with the group of non-due diligence mines (36 percent, N = 334).



If we only look at FARDC interference, we see that undisciplined soldiers were reported on 7 percent of the mines covered by due diligence programmes (N = 289), and in 27 percent of the mines not covered by such programmes (N = 334, see Chart 2). A typical example is the non-DDP zone of Kamituga, where FARDC levied illegal taxation in about 80 percent of the gold mines visited in the past 6 months by IPIS monitors.

In the DDP zone of Kisengo, FARDC has taken positions in the vicinity of coltan mines to protect them against potential attacks of Mai Mai Hapa na pale and Twa-militia. However, the army has also set up a roadblock between the road connecting these mining sites with the village of Kisengo, where passers-by are asked to pay 500FC. In the DDP zone of Kalima (mainly cassiterite mines) the picture is mixed. FARDC in the western part of this zone seems to operate correctly, adhering to their task of protecting the local population but in the eastern part of the zone several reports suggest that FARDC is imposing illegal taxation, forced labour and arbitrary arrests. In the non-DDP zones of Kalulu and Bikenge (gold mining sites), FARDC seems to perform their task correctly, as it was reported at several sites that FARDC protects the local populations and their belongings.⁵⁴

4.4.2. Illegal taxation by FARDC or irregular armed groups

The imposition of illegal taxation by FARDC or irregular armed groups was confirmed in 17 percent (N = 623) of the mining sites visited with a noticeable difference between DDP mines (6 percent, N = 289) and non-DDP mines (28 percent, N = 334). In DDP mines, no armed groups were reported conducting illegal taxation meaning that it was always perpetrated by undisciplined FARDC elements.

Remarkably, there were hardly any observed differences between due diligence and non-due diligence mines with respect to illegal taxation by armed actors—oftentimes by FARDC—in nearby villages. The practice was confirmed in 8 percent (N = 266) of the cases of due diligence mines compared to 9 percent (N = 321) in non-due diligence mines.

Roadblocks were observed in the vicinity of 10 percent (N = 288) of due diligence mines, compared to 18 percent (N = 330) of the non-due diligence mines. A possible explanation could be that armed groups and FARDC move out of the due diligence mining areas but continue their illegal practices in adjacent villages or on roads controlling access to the mining areas.⁵⁵

⁵⁴ These observations were made in the period July – October 2018.

⁵⁵ Schouten P, Murairi J. & Kubuya S., “Everything that moves will be taxed”: The political economy of road blocks in North and South Kivu, DIIS/IPIS Report, November 2017, p. 5. Available at <http://ipisresearch.be/publication/everything-moves-will-taxed-political-economy-roadblocks-north-south-kivu/>.

4.4.3. Forced labour

According to the International Labour Organization⁵⁶, forced labour refers to “involuntary work performed under menace of any penalty applied by an employer or a third party.” Forced labour in artisanal mines in eastern Congo is a serious human rights issue most often linked to the presence and interference of armed actors, FARDC and irregular militia alike.⁵⁷

If we only consider forced labour, which is one of the different forms of interference that IPIS surveyors are trained to consider when visiting a mining site, we see that forced labour was reported in only three mining sites in a due diligence context (1 percent, N = 289) and ten mining sites in a non-due diligence context (3 percent, N = 334).

4.4.4. Child labour

By ILO guidelines, child labour is defined as, “the work performed by children who are under the minimum age⁵⁸ legally specified for that kind of work, or work which, because of its detrimental nature or conditions, is considered unacceptable for children and is prohibited”.⁵⁹ In our study, we sought to identify if respondents perceived that there were children under the age of 15 working at mine sites in the mining zone in which they lived or worked.

The presence of children under 15 working in the mineral exploitation (digging, carrying, washing) was reported in 39 mining sites (16 percent, N = 238). We noted a strong difference between DDP mines (5 percent, N = 110) and non-DDP mines (26 percent, N = 128). Out of those 39 sites, only three were not a gold producing site, which indicates that the presence of child labour is far more prevalent in the gold supply chains.

56 [ILO report](#) ILO, *Hard to see, harder to count: survey guidelines to estimate forced labour of children and adults*, 2012: p13.

57 Jackson, S., *Making a killing: Criminality and coping in the Kivu war economy*, in *Review of African Political Economy* 29 (93-94), 2002; Stoop, N., Buraye, J.K. & Verpoorten, M., *Relocation, reorientation, or confrontation? Insights from a representative survey among artisanal miners in Kamituga, South Kivu*, Working Paper 2016.09, Institute of Development Policy and Management, University of Antwerp, April 2016.

58 ILO Report (2012), *op. cit.* p. 12; the ILO guidelines for estimating forced labour of adults and children define a child as “all persons under the age of 18.”

59 ILO Report (2012), *op. cit.* p. 16.

5. SOCIAL, ENVIRONMENTAL AND HUMAN RIGHTS IMPACT OF MINING

- This section presents the key findings from the mobile surveys assessing the social, environmental and human rights impacts of mining in eastern DRC.
- The Annex II of OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas⁶⁰ defines serious abuses as any forms of: torture, forced or compulsory labour exacted under the menace of penalty, the worst forms of child labour, gross human rights violations such as widespread sexual violence and war crimes. For the mobile survey, we sought to capture a subset of the aforementioned indicators by investigating respondents' perception on mining incidents, gender-based violence, other forms of violence, presence of child labour and the reports of bribery or corruption in their area.

5.1. General statistics

The first survey addressed demographic and socio-economic questions such as respondents' income and the effect of mining on the local economy (see Table 16).

Table 16: Number of respondents for survey 1 per mineral

Survey 1	Cassiterite	Coltan	Gold	Total
Due diligence	488	25	88	601
No Due diligence	0	0	244	244
Total	488	25	332	845

The second survey addressed gender issues, impact of mining and serious abuses such as violence and gender violence (see Table 17).

Table 17: Number of respondents for survey 2 per mineral

Survey 2	Cassiterite	Coltan	Gold	Total
Due diligence	228	21	43	292
No Due diligence	0	0	94	94
Total	228	21	137	386

The third and last survey was dedicated to understand the conditions of extraction and serious abuses such as child labour and forced labour (see Table 18).

Table 18: Number of respondents for survey 3 per mineral

Survey 3	Cassiterite	Coltan	Gold	Total
Due diligence	222	29	30	281
No Due diligence	0	0	71	71
Total	222	29	101	352

Since some indicators were spread over different surveys, we will not analyse the results per survey but rather, per indicator.

60 OECD (2016), *op. cit.*, pp. 20-21

5.2. Demographics

The first survey gives some indications regarding the demographic situation of respondents. It is important to note that respondents to surveys 1, 2 and 3 are not necessarily the same persons because each survey was sent out at a different point in time to the whole database of phone numbers collected by IPIS.

For each question, the number of respondents vary. Mobile surveys are subject to communication breach or skip logic which influences survey completion rates. Therefore, all statistics are provided as a percentage followed by the total number of respondents.

5.2.1. Miners

Most of the respondents of the first survey (56 percent out of 703 people) identified as miners. Proportions were similar in survey 2 (56 percent out of 352) and in survey 3 (54 percent out of 315).

Most of the respondents are part of the mining community, as 68 percent (out of 279) of the non-miner respondents specified that they provide good or services to people working in a mining site. Almost half of the respondents (48 percent out of 605) are living less than 1 hour from a mining site. Only 11 percent reported living more than 1 day from a mining site.

People in mining communities often move from one place to another. Almost half of the respondents (49 percent out of 557) have lived in their current area for less than 2 years, whereas

25 percent have lived there for more than 3 years.

5.2.2. Gender

About 16 percent of respondents to the surveys were women (15 percent out of 386 for survey 2, 17 percent out of 352 for survey 3). This question was not asked to respondents in survey 1.

The percentage of women is quite high considering the fact that only 12,5 percent of the phone numbers collected by IPIS before sending out questionnaires were identified as belonging to a woman. This can be explained by the fact that one phone number can be answered by both members of the household, thus highlighting the importance of asking the gender question at the beginning of each survey.

5.2.3. Income

Most of the respondents (76 percent out of 526) said they support a family with their income. This number is similar in both areas with due diligence programmes (76 percent out of 145) and without due diligence programmes (79 percent out of 381).

Among those who said they have to support a family with their income, 62 percent (out of 397) said their income is not sufficient to feed, clothe and house their family. This was comparable in both areas with due diligence programmes (61 percent out of 283) and without due diligence programmes (65 percent out of 114).

Among those who said they do not support a family, the number was even higher with 81 percent (out of 115) of the respondents saying that their income is not sufficient to feed, clothe and house themselves. Again, numbers were similar in both areas with due diligence programmes (84 percent out of 85) and without due diligence programmes (73 percent out of 30).

When asked to compare their income from this year to their income from last year, 45 percent (out of 491) of the respondents noted that their income had decreased. This is true both in due diligence and in non-

due diligence mining areas (see Table 19).

Related to the perception of declining incomes may be the effect of the depreciation of the *Franc congolais* from about 920FC/ USD in 2016 to 1,600FC/USD in 2018. This devaluation of the local currency has seriously impacted the buying-power of the Congolese due to increased prices of basic commodities.⁶¹

Table 19: How would you compare your income from last year to your income this year?

Due Diligence	Increased	Remained the same	Decreased	Don't know / skip	Total number of respondents
All respondents	19 percent	21 percent	45 percent	15 percent	491
In DDP zones	20 percent	21 percent	46 percent	13 percent	351
In Non-DDP zones	16 percent	21 percent	44 percent	19 percent	140

5.3. Conditions of Extraction

5.3.1. Labour

According to the International Labour Organization⁶², forced labour refers to “involuntary work performed under menace of any penalty applied by an employer or a third party”. It can mean that persons are coerced to work through the use of violence or intimidation, or by more subtle means such as accumulated debt, retention of identity papers or threats of denunciation to immigration authorities.

Mobile survey responses provide some insight into working conditions in the mining areas included in this study. We see, for example, that 21 percent (out of 164) of the respondents are not working for themselves. When this is the case, most of them are working for a “*négociant*” (mineral trader) or another miner, although the number of respondents is too small to be statistically significant for this sub-question.

The same portion (20 percent out of 153) of the respondents said they are not free to leave the mine they work at any time. We observed a small difference between areas with due diligence programmes (19 percent out of 118) and areas without due diligence programmes (23 percent out of 35).

Furthermore, a greater number of respondents (41 percent out of 148) said that they are not paid for their work. The share is strictly identical (41 percent) for both due diligence and non-due diligence areas. Among those who are not paid for their work, about half of them (51 percent out of 61) said that they are working to pay a debt.

5.3.2. Taxation

It is important to distinguish between legal taxation based on Congolese law and undertaken by mining services (SAEMAPE and *Division des Mines*) or under generally accepted customary regulations (*chefferies*), and illegal taxation by other state or non-state actors.

About 77 percent (out of 144) of the respondents said that they are paying a tax or a fee to operate in a mining site. The share is slightly lower in areas with due diligence programmes (73 percent out of 113) than in areas without due diligence programmes (90 percent out of 31). While the number of respondents is quite low, we can potentially assume that there are more taxations or fees (legal or illegal) to operate in a mining site in areas without diligence programmes in place.

61 La Tempête, *Conséquence de la dépréciation du franc congolais: Hausse de prix des denrées alimentaires à Kinshasa*, 28 March 2017.

62 ILO report (2012), *op. cit.*, p13.

More information is provided by the follow-up question. Among those respondents who said they have to pay a tax or a fee to operate in a mining site, 65 percent of them reported that they have to pay the tax or fee to state agents and 10 percent of them said they have to pay to the FARDC (see Table 20). It is important to note that this question was asked as a single-choice option and would require a more in-depth analysis to capture all the actors that are levying taxation on mining sites.

Table 20: Who do you pay a tax to?

	All respondents	In DDP zones	In non-DDP zones
Government official	65 percent	60 percent	81 percent
Traditional chief	5 percent	5 percent	4 percent
Trader	4 percent	4 percent	4 percent
FARDC	10 percent	12 percent	4 percent
Armed group	2 percent	2 percent	0 percent
Cooperative	11 percent	12 percent	7 percent
Other	3 percent	4 percent	0 percent
Total number	107	80	27

Similarly, 76 percent of the respondents (out of 136) said they have to pay a tax to transport the mineral, with a slight difference between areas with due diligence programmes (74 percent out of 106) and areas without due diligence programmes (87 percent out of 30). When asked to whom they have to pay a tax to transport minerals out of the mine, 66 percent (out of 104) mentioned state agents, 15 percent mentioned the miner cooperative and 10 percent the FARDC (see Table 21).

Table 21: Who do you pay a tax to transport minerals out of the mine?

	All respondents	In DDP zones	In non-DDP zones
Government official	66 percent	60 percent	85 percent
Traditional chief	2 percent	3 percent	0 percent
Trader	2 percent	3 percent	0 percent
FARDC	10 percent	10 percent	8 percent
Armed group	5 percent	5 percent	4 percent
Cooperative	15 percent	19 percent	4 percent
Total number	104	78	26

Previous IPIS research documented the importance of roadblocks and transport roads in the local economy eastern DRC.⁶³ Survey respondents indicated that both production and transport of minerals is sometimes subjected to illegal taxation by state and non-state actors.

5.3.3. Presence and performance of state services

Most of the respondents (71 percent out of 257) said that either SAEMAPE, *Division des Mines* or *Police des Mines* is present in their local area. The findings are similar (70 percent and 71 percent) in both mining areas with or without due diligence programmes, which can be explained by the fact that the collection of mobile phone respondents number was focused in areas with similar characteristics such as the absence

63 Schouten P, Murairi J. & Kubuya S. (2017), *op. cit.*

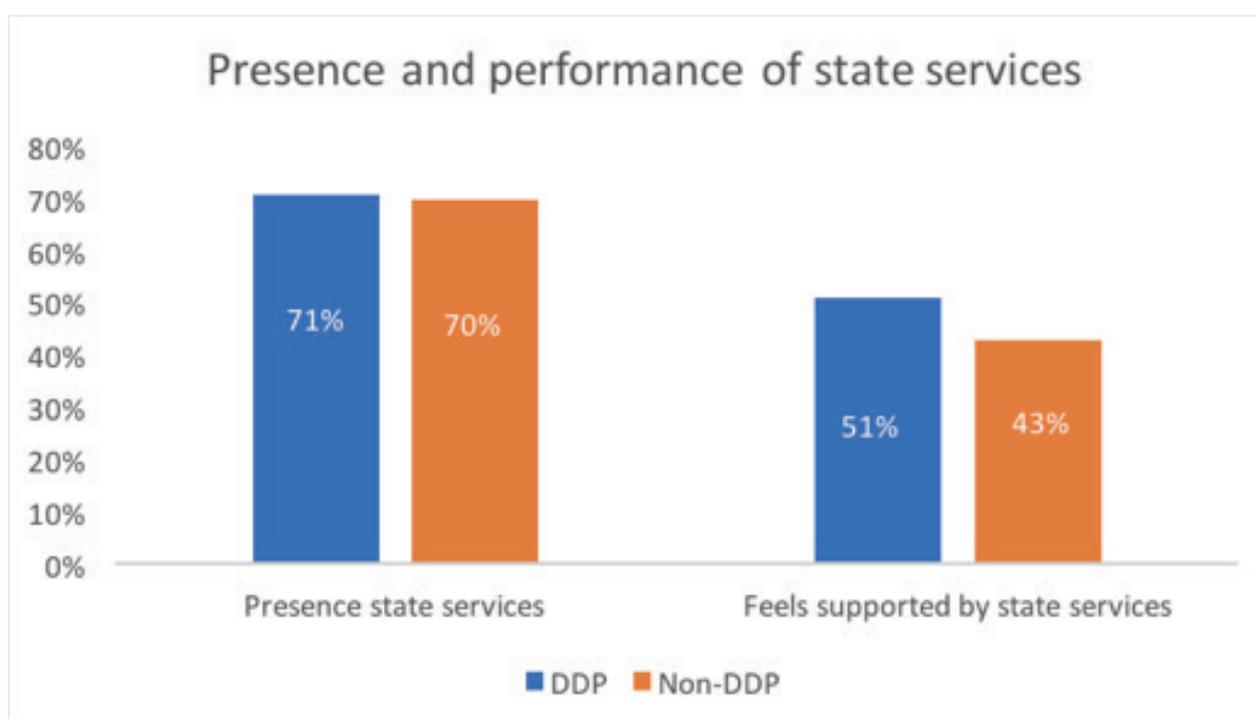
of armed groups interference, a reasonable degree of accessibility and a relatively high concentration of workers. All these criteria favour the deployment of state services on the ground (see table 22).

When asked if those state services actually support the local area, half of the respondents (50 percent out of 179) said that they feel supported by them. The number is slightly better in areas with due diligence programmes (51 percent out of 149) than areas without due diligence programmes (43 percent out of 30). (see table 22 and chart 4)

Table 22: Presence and performances of state services

Due diligence	Presence state services	Feels supported by state services
All respondents	71 percent	50 percent
In DDP zones	71 percent	51 percent
In Non-DDP zones	70 percent	43 percent

Chart 3: Presence and performance of state services



5.3.4. Effect of mining on individual life

Studies suggest that artisanal mining supports directly or indirectly between 1 - 1.75 million people in the Kivu provinces only.⁶⁴ That number will be significantly increased if we include the provinces of Ituri, Maniema and Tanganyika, where gold, coltan and cassiterite mining are on the rise. The recovery of global commodity prices is also stimulating the growth of artisanal mining in eastern DRC

where large-scale mining investments continue to be relatively limited.⁶⁵ To get a general sense of the significance of artisanal mining we asked informants to give us their perception of the effect of mining on their personal lives.

64 Geenen S. & Radley B., *In the face of reform: what future for ASM in eastern DRC?*, in *Futures* 62, 2014.

65 Schütte, P., *International mineral trade on the background of due diligence regulation: A case study of tantalium and tin supply chains from East and Central Africa*, *Resources Policy*, December 2018.

A significant proportion of respondents (46 percent) reported that the effect of mining on their lives was that it had made their lives better. 36 percent thought mining made no change to their lives and 12 percent reported mining had made their lives worse (N = 473) (see also section 4.1.3).

Further analysis of these results revealed the perception of the effect of mining on a person's life was not influenced by the presence or absence of due diligence programmes: 45 percent of respondents in DDP zones versus 48 percent in non-DDP zones answered that 'it made their lives better'; 36 percent in DDP zones versus 34 percent in non-DDP zones reported 'it made no change'; and 14 percent in DDP-zones versus 8 percent in non-DDP zones answered 'it made their lives worse' (see Table 23).⁶⁶ That is, irrespective of whether a person was in a due diligence site or a non-due diligence site, there was little difference in terms of people's perception of the effect of mining on their lives.

Table 23: Perception of effect of mining on a person's life

Due Diligence	Made life better	No change	Made life worse
In DDP zones	45 percent	36 percent	14 percent
In non-DDP zones	48 percent	34 percent	8 percent

Upon analysing the perception of the effect of mining on a person's life in each province, we found that mining was thought to make life better especially in the provinces of Maniema, South Kivu and North Kivu.

5.4. Impact of mining

5.4.1. Health and Safety

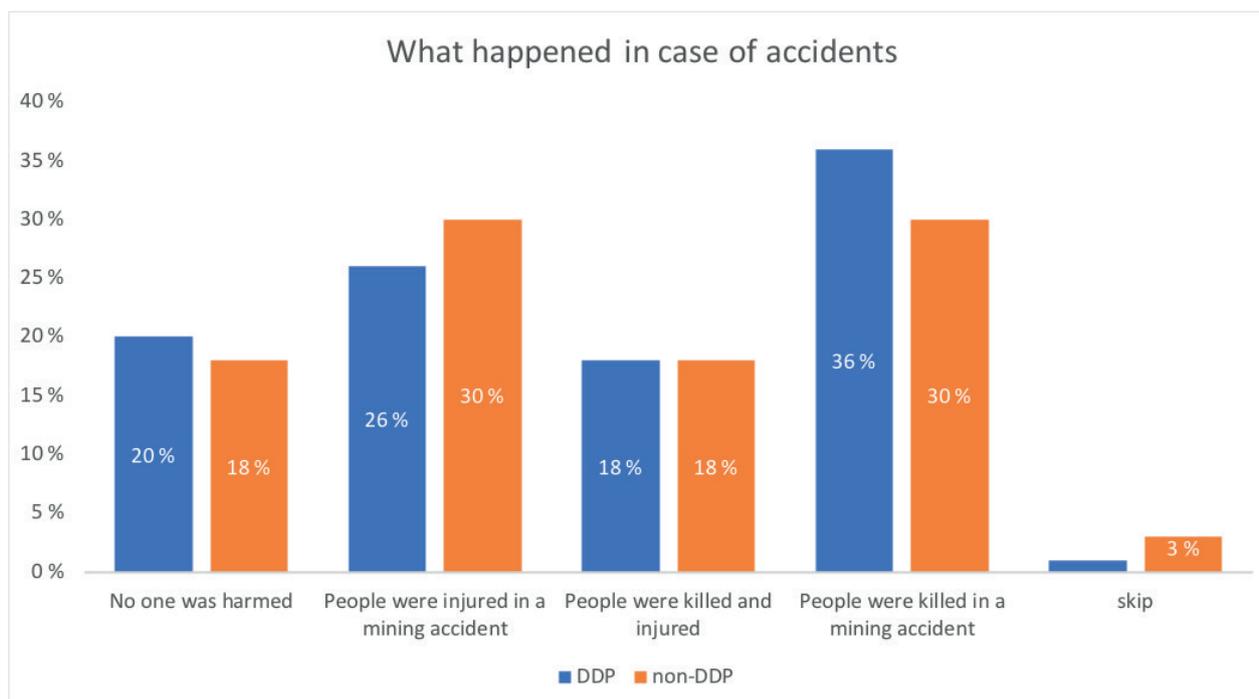
Artisanal miners extracting gold, cobalt or cassiterite tend to dig deep pit mines anywhere between 1-150 metres in depth and of varied horizontal length. Generally, most miners are not formally trained in mine safety and they often work using simple equipment like shovels, picks, chisels and mallets, especially in the exploration phase. The combination of limited knowledge, lack of technical skills and equipment and treacherous terrain is known to significantly raise the risk of artisanal mine collapses.

Our study noted that 42 percent of people living in artisanal mining communities (N = 329) reported experiencing or hearing about a mining accident. Further analysis highlighted that people in DDP areas reported witnessing or hearing about accidents at mine sites less often (41 percent) than their counterparts in non-DDP areas (47 percent).

An examination of the outcomes of mine accidents revealed that approximately half of respondents who reported experiencing or hearing about a mine accident (N=130) also said that the accident resulted in the someone's death (Chart 4 shows proportions of respondents per type of zone).

66 That is due diligence is *independent* of the perception of the effect of mining on a person's life (Chi square test value of $p=0.146$).

Chart 4: What happened in case of an accident?



Of those that reported experiencing or hearing about mine accidents, 65 percent identified as miners whereas 35 percent reported being non-miners. In fact, miners were more likely to report mine accidents than non-miners.

5.4.2. Environmental Impacts

OECD Due Diligence guidelines recommend that companies know the context of conflict-affected or high-risk areas by studying relevant information relating to extraction and its impact on conflict, human rights or *environmental harm* in the country of potential origin.⁶⁷ To gather some feedback on environmental impact, we sought to find out specifically if deforestation, bush meat consumption, use of mercury and pollution of waterways were primary environmental concerns in mining areas.

Our findings show that just over half of respondents (55 percent) view deforestation and/or bush meat consumption as environmental concerns in their local areas (N = 279), with a slightly larger proportion of respondents reporting these environmental impacts in DDP zones (56 percent) than in non-DDP zones (48 percent, see Table 24). This may point to the increasing encroachment of mining and other economic activities on woodland and uninhabited areas.

Additionally, because the use of mercury is specifically associated with gold mining areas, we observed that 55 percent of the respondents reported the use of mercury and/or pollution of waterways as an important concern (N = 276). A slightly larger proportion of respondents reported mercury use in DDP zones (57 percent) compared to non-DDP zones (48 percent, see Table 24). Further study is needed to understand the causes of these environmental issues and ways to reduce their impact in mining areas.

67 OECD (2016), *op. cit.*, pp. 57-58.

Table 24: Proportion of respondents reporting environmental impacts

Due Diligence	Deforestation and/or bush meat	Mercury and/or water pollution
All respondents	55 percent	55 percent
In DDP zones	56 percent	57 percent
In Non-DDP zones	48 percent	48 percent

5.5. Serious Abuses

5.5.1. Gender Violence

Over a third of women respondents (37 percent) reported being mistreated because of their gender (N=51).⁶⁸

A notable aspect of our female respondents was that at least a quarter of them (36 percent) also identified as miners (N=119). This likely suggests that female miners may make a significant proportion of the female workforce in artisanal mines. Due to the low response of women, we were not able to reliably compare the mistreatment of women in zones with due diligence programmes versus zones without due diligence programmes.

5.5.2. Violence

The people of eastern Congo have witnessed a disproportionate amount of violence since 1996 that has cost more than 3 million lives.⁶⁹ The use of violence and the threat of the use of force is an important indicator of serious abuse for it is one of the ways armed groups coerce individuals to profit from artisanal small-scale mining.⁷⁰ To obtain a snapshot of violence in ASM communities in eastern Congo, we asked informants about whether they had witnessed violence, who perpetrated it and also whether they were victims of violence.

Table 25: Proportion of respondents hearing about or experiencing acts of violence

Due Diligence	Seeing or hearing of violence	Experiencing violence
All respondents	47 percent	28 percent
In DDP zones	46 percent	28 percent
In Non-DDP zones	49 percent	29 percent

Witnessing violence

47 percent of respondents reported seeing or hearing of an act of violence (N = 306). In addition, despite the smaller number of female respondents, women (47 percent) were just as likely as men (46 percent) to report hearing or seeing an act of violence in the place where they live or work.

Furthermore, our analysis also reveals that the presence or absence of due diligence programmes has no

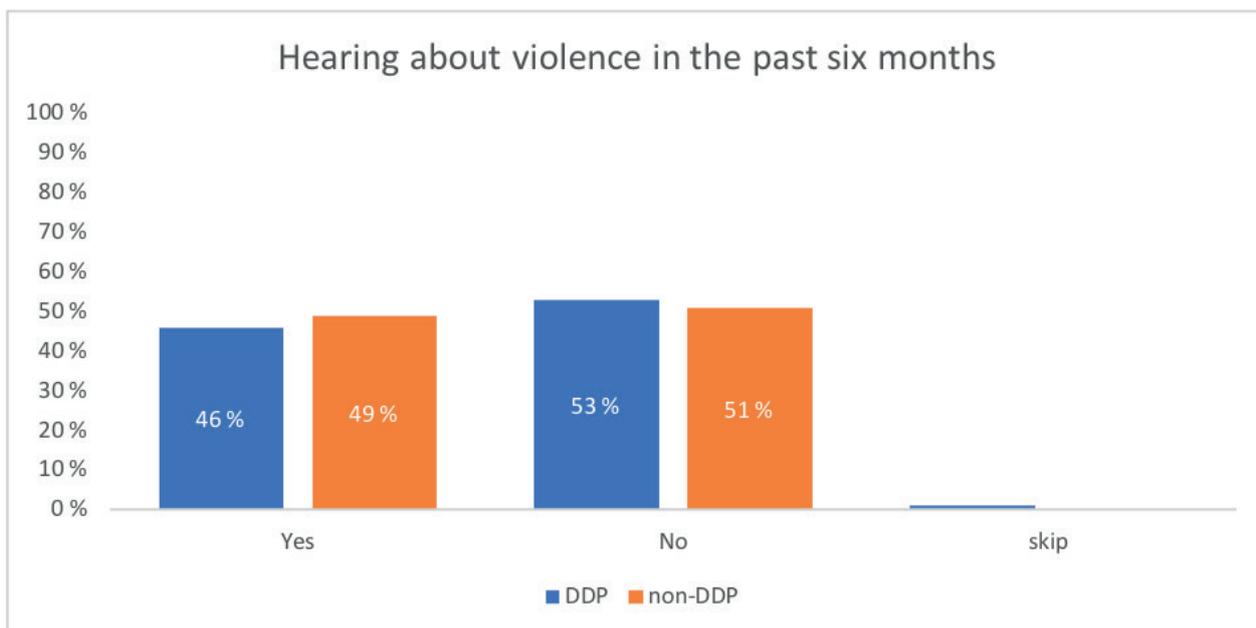
68 The panel of respondents included 15 percent female and 84 percent male. This low response rate of women is partly due to the relatively lower numbers of women in artisanal mining areas and the relatively lower number of mobile phones in the hands of women, especially women in remote rural areas (see Methodology section). This low response rate made it impossible to obtain statistically significant analyses about gender-based violence.

69 Turner T., *The Congo wars: conflict, myth and reality*, London: Zed books, p. 3.

70 OECD (2016), *op. cit.*, pp. 20-21.

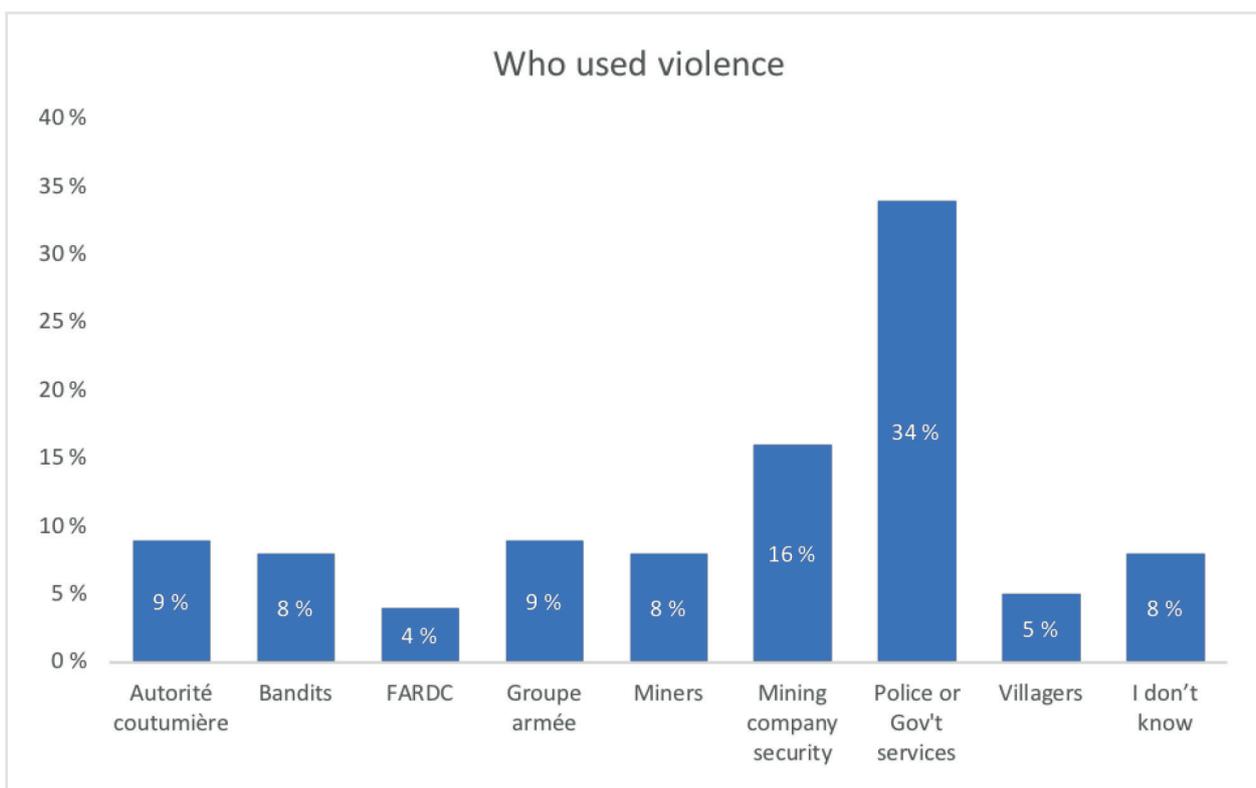
influence on reports of witnessing violence: 46 percent of respondents in DDP zones witnessed violence, compared to 49 percent in non-DDP zones (see Table 25 and Chart 5).

Chart 5: Proportion of respondents hearing about violence in the past 6 months



However, we noted that non-miners were more likely to report incidences of violence than miners. The latter point gained more importance particularly after we observed that the most reported perpetrators of violence were “police and government services” (34 percent of the respondents, N=141) (see Chart 6).

Chart 6: Proportion of respondents mentioning a specific perpetrator of violence



While police and government services were cited as perpetrators of violence in every one of the five provinces we sampled in eastern Congo, their actions were most noted in South Kivu and Maniema. The frequency of the reports naming police and government services as the major perpetrators of violence was the same in due diligence (34 percent) and non-due diligence zones (34 percent).

Similarly, mining company security were reported as the perpetrator 16 percent of the time, and primarily by respondents living in South Kivu and Maniema provinces and to a lesser extent North Kivu. Likewise, mining company security agents were reported as perpetrators of violence just as often in due diligence zones (15 percent) as they were in non-due diligence zones (17 percent).

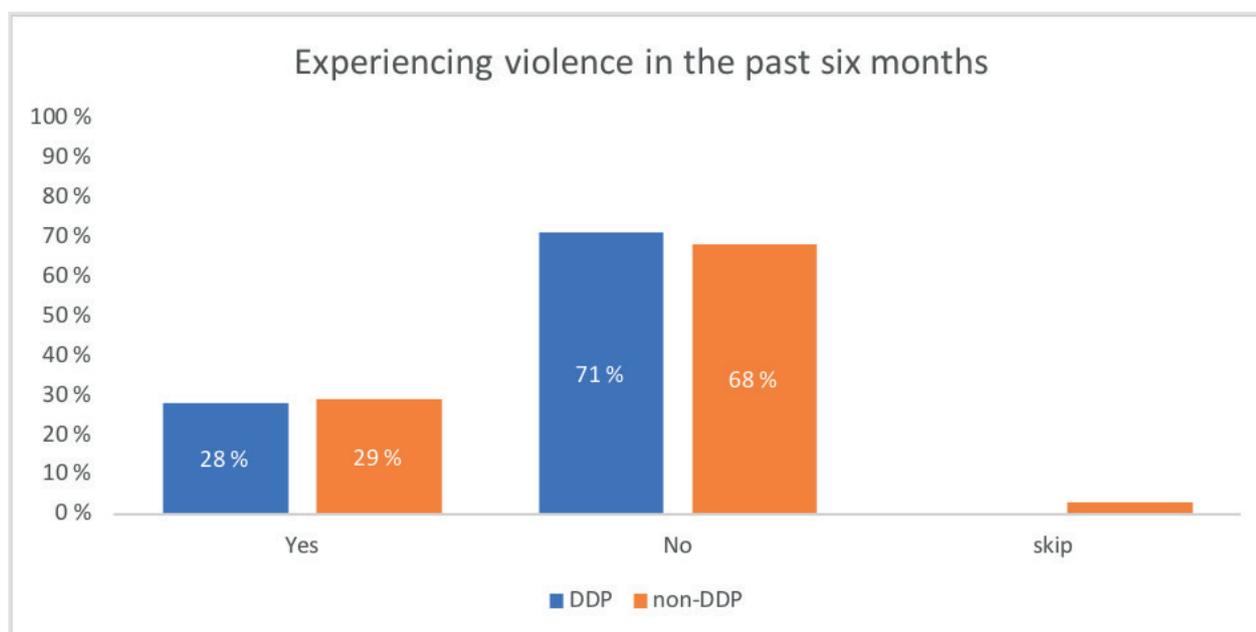
Given that in our study we sampled areas that we believed to have little or no armed group interference, we still observed that FARDC and armed groups accounted for 13 percent of the total reports of perpetrators of violence. This potentially highlights a spread of armed group interference in mining areas of the region in the first half of 2018.

Experiencing violence

When we asked if respondents had been victims of violence in the past six months, 28 percent of 296 respondents confirmed experiencing violence. Furthermore, miners reported being victims of violence far more often than non-miners, which may point to mine sites being more likely sites of violence than other social locations.

Another notable aspect was that there was *no correlation* between the presence or absence of due diligence and experiencing violence (with 28 percent of respondents reporting experiencing violence in due diligence zones, and 29 percent in non-due diligence zones). This implies that a person was just as likely to be a victim of violence in a due diligence zone as compared to non-due diligence zone (see Table 25 and Chart 7).

Chart 7: Proportion of respondents experiencing violence in the past 6 months

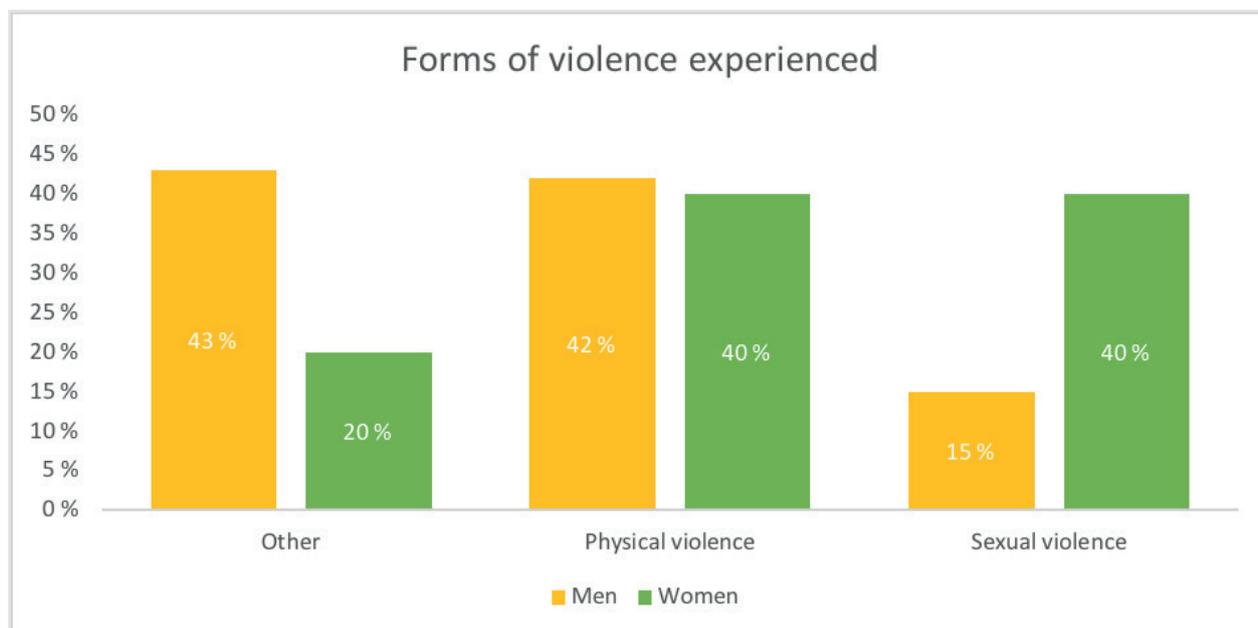


Within the sample of 84 people reporting experiencing violence, 42 percent of respondents were victims of physical violence, 18 percent of sexual violence and 40 percent other forms of violence.

Although there were fewer respondents that identified as women that had experienced violence (12 percent), women reported experiencing physical violence as often as men 40 percent and 42 percent, respectively). When it came to reports of sexual violence, women reported that they experienced sexual

violence at a disproportionately higher (40 percent) rate than male respondents (15 percent, see Chart 8).

Chart 8: Forms of experienced violence



Relative to non-miners, we observed that miners were more often the victims of physical and sexual violence. This likely strengthens the view that mine sites may be a significant site of violent confrontation.

Another important finding was that reported physical or sexual violence had no correlation with the presence or absence of due diligence programmes. That is, one was just as likely to be a victim of physical or sexual violence in a due diligence zone as they were in a non-due diligence zone. Further research is necessary to ascertain if due diligence programmes are able to mitigate the experience of various types of violence over the *longue durée*.

Reports of both physical and sexual violence also reiterate general concerns that state agents, specifically men in uniform, are predominantly responsible for perpetrating some of the worst forms of physical and sexual violence in eastern Congo.⁷¹ Taking into consideration that police and government agents were most frequently reported as perpetrators of acts of violence, further research is needed to investigate the extent state agents are implicated in promoting the physical and sexual violence reported in mining communities.

5.5.3. Child labour

By ILO guidelines, child labour is defined as, “the work performed by children who are under the minimum age legally specified for that kind of work, or work which, because of its detrimental nature or conditions, is considered unacceptable for children and is prohibited.”⁷² In our study, we sought to identify if respondents perceived that there were children under the age of 15 working at mine sites in the mining zone in which they lived or worked.

It is worth recalling here that, with regard to the mobile survey, we asked people to report what they saw in the past six months. In addition, because our sampling strategy enabled us to collect information from mining zones that likely had several mine sites near an important trading post (*point de vente*), it

71 A study by Kelly et.al (2011) reports that 83% of women who have survived sexual violence in eastern Congo identified their attacker as wearing some form of uniform. See: Kelly J.T., Betancourt, T.S., Mukwege, D., Lipton, R. & VanRooyen, M.J., *Experience of female survivors of sexual violence in eastern Democratic Republic of the Congo: A mixed-method study*, in *Conflict and Health*, 5 (25), 2011).

72 ILO report (2012), *op. cit.*, p. 16.

is possible that a number of respondents in the same mining zone could report about the same child labour incident resulting in over-reporting. As such, in this report we are able to report on the general scope of the problem of children working at mine sites.

Over half of respondents (54 percent) reported they had seen children under 15 years working at a mining site near the place where they live or work (N = 269).

When we looked at the spread of this data across the provinces, only in Tanganyika province was there a “low” of 37 percent of respondents who reported seeing children working in mines. In every other province, more than 50 percent of people reported seeing children working in mine sites.

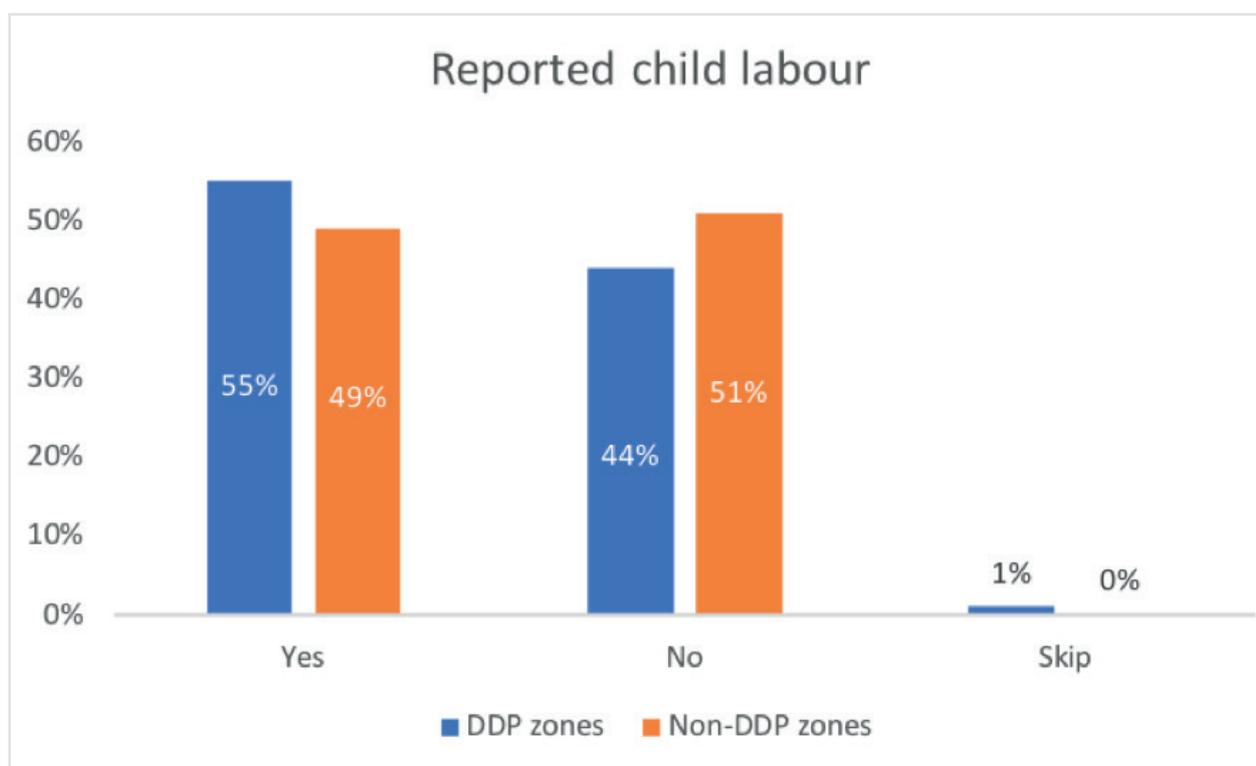
The study did not find a correlation between reporting children working in the mines and the presence or absence of due diligence because 55 percent of respondents reported that they had seen child labour in mines in DDP zones versus 49 percent in mines in non-DDP zones (see Table 26 and Chart 9). This difference between DDP and non-DDP zones suggests the presence (or absence) of due diligence does not necessarily affect people’s perception of the existence of children working at mining sites.

Furthermore, miners were more likely to report the presence of children at mine sites than non-miners. The positive correlation between occupation and reports about children at mine sites is logical, as miners spend more time in mines than non-miners and are therefore more likely to report what happens at these sites.

Table 26: Proportion of respondents reporting child labour

	All respondents	In DDP zones	In Non-DDP zones
Reported child labour	54 percent	55 percent	49 percent

Chart 9: Proportion of respondents reporting child labour



The high incidence of reports about children under 15 years working at mine sites signals a risk that there may be considerable child labour in mining communities in eastern Congo.

Research in what is today Haut Katanga province indicates that poverty often compels women to bring their children into mining-related activities more often than men, because it is women who are generally responsible for the daily survival of the family.⁷³ The presence of children working in mines underscores the complex challenges facing this region, and may also be a signal of wider transformations to the idea of family and the conception of youth, particularly in rural communities.

5.5.4. Corruption

The OECD Due Diligence Guidelines for Responsible Supply Chains mentions that one risk mitigation measure for companies is, “while sourcing from areas of ASM, support formalisation of security arrangements between ASM communities, local government and public or private security forces, in cooperation with civil society groups and international organizations, as appropriate, to ensure that all payments are freely made and proportionate to the service provided...”.⁷⁴ Prior research undertaken by IPIS and *Association Africaine de Défense de Droits de l’Homme* (ASADHO) demonstrates that state and non-state armed groups in eastern Congo have been financing a substantial part of their activities through forms of racketeering that include extortion, illegal taxation, solicitation of bribes, among other forms of predation.⁷⁵ The absence of mechanisms to regulate, monitor or even control the work of state agents, let alone its citizens, beyond the boundaries of urban areas has contributed to characterization of the Congolese state as not only a weak state but also as a failed state.⁷⁶

Bearing in mind the prominence of racketeering activities by state and non-state actors in eastern Congo, we sought to get a general idea of the scale of bribery and corruption in mining communities, as understood by local residents in the past six months, or from around March to September, 2018. Our aim was to grasp the extent to which residents in mining communities were bothered by requests for bribes, illegal taxes and corruption activities. We did not seek to draw inferences on the frequency or specific nature of these bribery and corruption activities.

63 percent of the respondents (N = 286) reported experiencing or hearing about bribery or corruption. Furthermore, we observed a positive correlation between due diligence and reports about experiencing or hearing about corruption. That is, individuals in due diligence areas had experienced or heard about corruption less often (59 percent) than their counterparts in non-due diligence areas (75 percent, see Table 27 and Chart 10).⁷⁷

Table 27: Proportion of respondents hearing of or experiencing bribery or corruption

	All respondents	In DDP zones	In Non-DDP zones
Heard of or experienced bribery or corruption	63 percent	59 percent	75 percent

73 André G. & Godin M., *Child labour, agency and family dynamics: The case of mining in Katanga (DRC)*, in *Childhood* 2(2), 2014, p. 169. See also: Amnesty International, “This is what we die for: Human rights abuses in the Democratic Republic of the Congo Power the Global Trade in Cobalt”, 2016, pp 28-33.

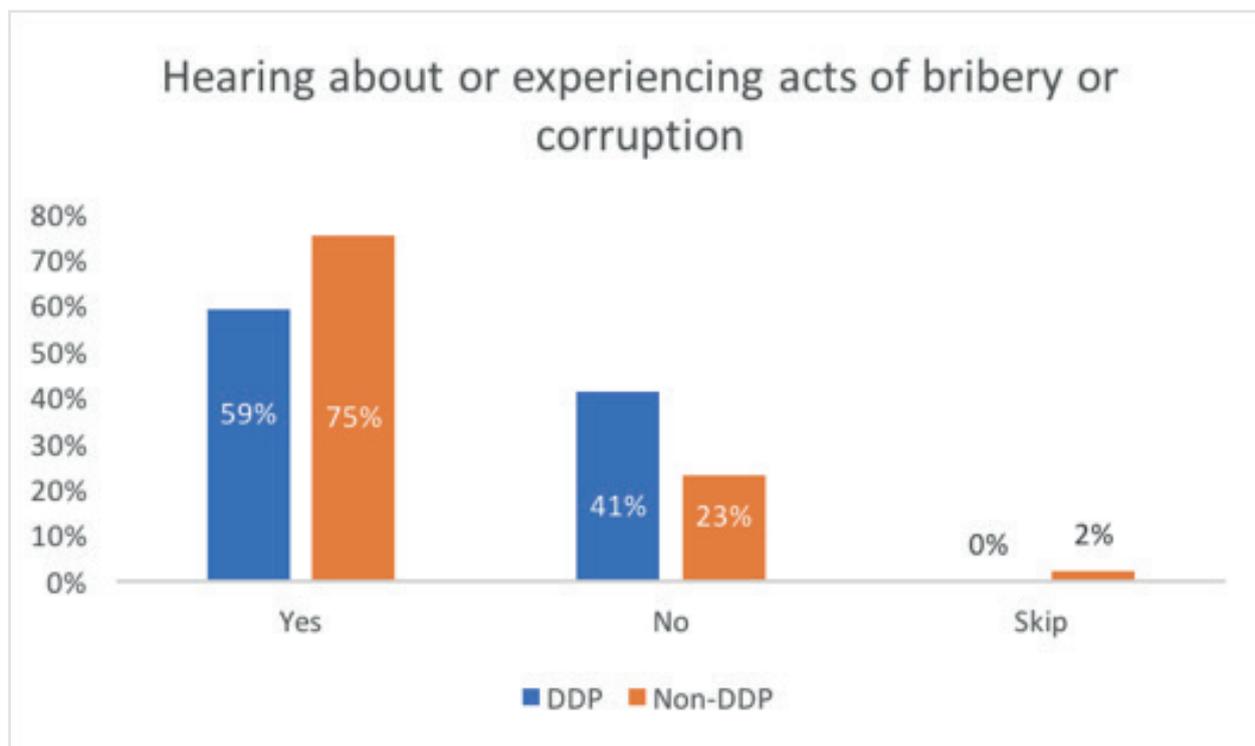
74 OECD (2016), *op. cit.*, p. 25.

75 Mukubwa J.B., *Les creuseurs miniers artisanaux et communautés environnantes, victims des services de sécurité et de la justice au Sud-Kivu, à l’Est de la RDC*, ASADHO/IPIS, 2017.

76 Trefon T., *Public Service Provision in a Failed State: Looking Beyond Predation in the Democratic Republic of Congo*, in *Review of African Political Economy* 119, 2009, pp. 17-18.

77 Chi square test results show p value = 0.034.

Chart 10: Proportion of respondents hearing about or experiencing bribery or corruption



In addition, we noted that miners reported experiencing or hearing about corruption more frequently than non-miners.⁷⁸ This result possibly indicates that instances of corruption are more pronounced or acute in mining sites than in other social locations.

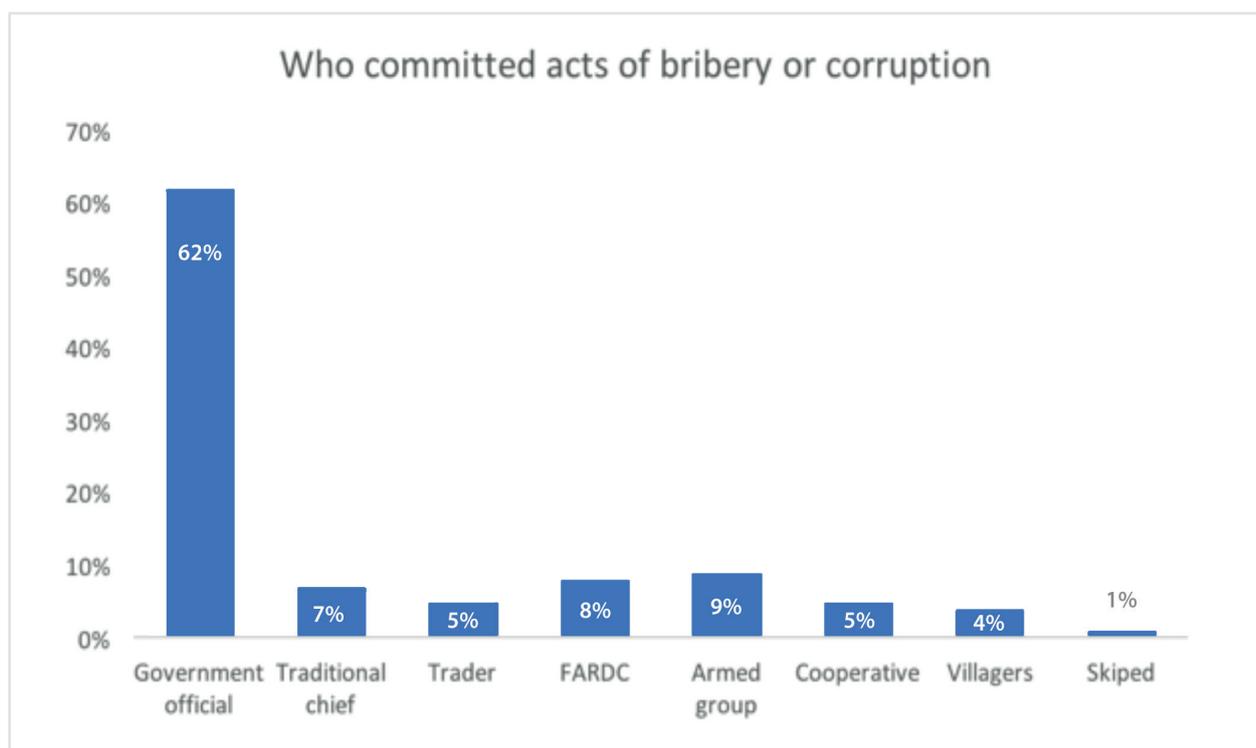
When we explored who committed acts of corruption or demanded a bribe or illegal tax, we observed that 62 percent of respondents reported that it was state agents, 8 percent of people reported FARDC and 9 percent armed groups, while the rest pointed to customary authorities, mining cooperatives, local traders, and villagers (N=174). (see Table 28 and Chart 11)

Table 28: Who committed acts of bribery or corruption?

	All respondents	In DDP zones	In Non-DDP zones
Government official	62 percent	57 percent	75 percent
Traditional chief	7 percent	7 percent	6 percent
Trader	5 percent	5 percent	4 percent
FARDC	8 percent	10 percent	2 percent
Armed group	9 percent	11 percent	4 percent
Cooperative	5 percent	4 percent	6 percent
Villagers	4 percent	5 percent	2 percent
Total number	174	126	48

78 Chi square test results show p value = 0.000.

Chart 11: Who committed acts of bribery or corruption?



From these results, we note that an overwhelming number of respondents view state agents as the key perpetrators of bribery and corruption. Reports of bribery and corruption were more or less evenly distributed across all provinces, with the lowest frequency being in Tanganyika.

When the results of “who committed acts of corruption or demanded a bribe or illegal tax” are cross tabulated against due diligence, we noted that there were far more reports of bribery, corruption and illegal taxation by state agents in non-due diligence zones (75 percent) than in due diligence zones (57 percent) (see Table 28). This may point to some influence of due diligence efforts at reducing racketeering by state agents, or it could also hint that people in due diligence zones may feel more empowered to reject or deflect advances by state agents because of greater social support provided in their communities.

5.5.5. Discrimination based on Ethnic Origin

The violence and internal displacement of peoples in eastern Congo starting in 1996 is widely viewed as just one of the many painful legacies of the Rwandan genocide. While many refugees fleeing armed groups in Rwanda settled in eastern Congo, they continued to be singled out on the basis of their ethnicity and massacred by various rivalling armed groups.⁷⁹ In addition, Congolese have migrated to mining sites in other provinces or regions for economic reasons over the past decades resulting in the emergence of multi-ethnic mining communities.⁸⁰

We observed that 36 percent of 290 respondents reported experiencing some form of discrimination on the basis of their ethnicity.

Miners reported being mistreated more often because of their origin compared to non-miners. It is entirely likely that this finding is related to the fact that miners, being highly mobile individuals who

79 Verweijen, J & Vlassenroot, K, *Armed mobilisation and the nexus of territory, identity, and authority: the contested territorial aspirations of the Banyamulenge in eastern DR Congo*, *Journal of Contemporary African Studies*. 33, 2015.

80 De Brier G. & Merket H., *Monitoring Report Artisanal Gold Monitoring Pilot in Mambasa, Ituri*, IPIS Report, 2017, p.30; Bryceson D.F. & Geenen S., *Artisanal frontier mining in gold in Africa: Labour transformation in Tanzania and the Democratic Republic of Congo*, in *African Affairs* 115 (459), 2016, pp. 315.

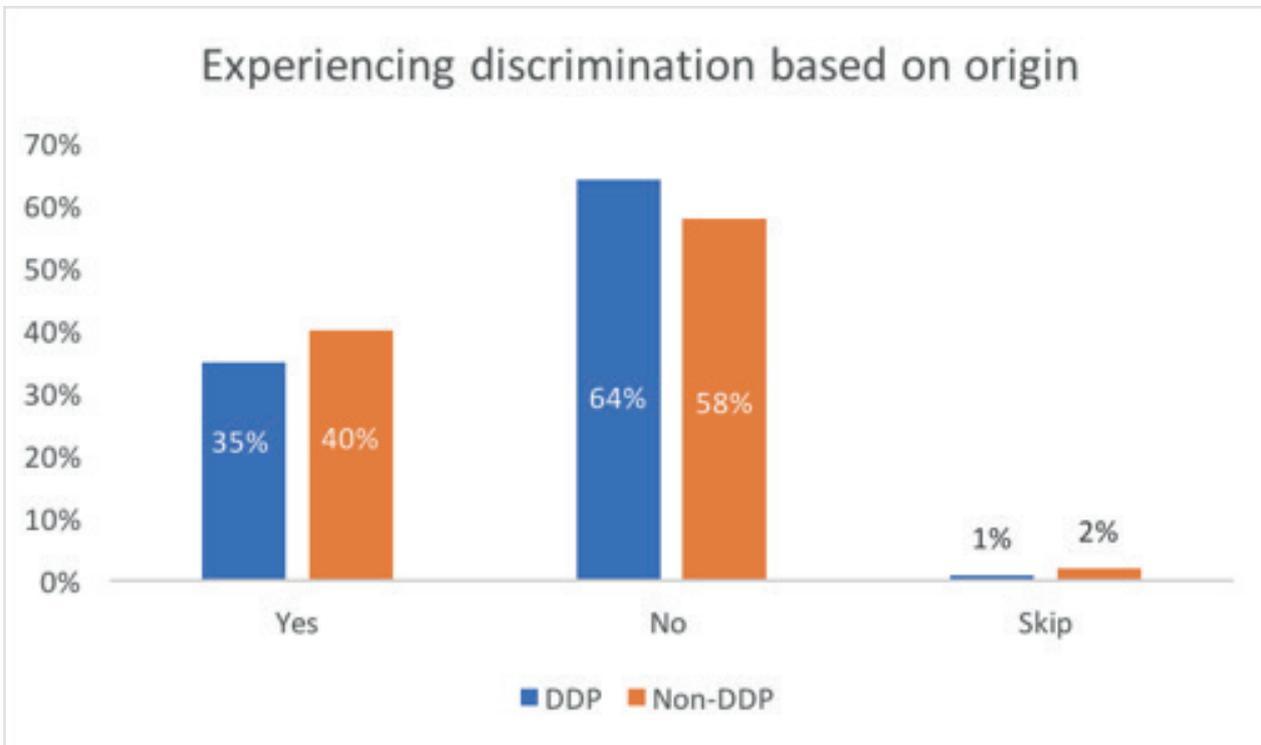
migrate to different areas in search for work or opportunity, are more likely to be exposed to ethnic discrimination.

We also observed that ethnic-based discrimination is not correlated to due diligence zone, that is, respondents reported that they experienced ethnic discrimination in both due diligence and non-due diligence zones. 35 percent of respondents in DDP zones reported experiencing discrimination compared to 40 percent of respondents in non-DDP zones (see Table 29 and Chart 12). Given the local history of conflict in the region, the observed incidence of ethnic discrimination reflects the possible existence of simmering tensions over autochthony and belonging.

Table 29: proportion of respondents experiencing discrimination based on origin

	All respondents	In DDP zones	In non-DDP zones
Experienced discrimination based on origin	36 percent	35 percent	40 percent

Chart 12: proportion of respondents experiencing discrimination based on origin



6. PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

This study analyses social and human rights impacts in artisanal small-scale mining communities in eastern DRC based on indicators of income, governance, forced labour, child labour, violence, work conditions in artisanal mines and security concerns related to armed groups. It compares mines and mining zones covered by due diligence programmes to those not covered by such programmes.

Mining site field visits and mobile-based surveys provided baseline data on the economic, social, environmental and human rights situation from the perspective of miners and other mining community members. When comparing data collected on the mining sites during field visits with data from mobile surveys, it is important to keep in mind the two levels of analysis employed: mining sites and individual experience and perception.

It worth noting that the low number of gold mining sites covered by due diligence programmes means that comparing DDP and non-DDP mining sites will inherently be subject to any difference between 3T and gold exploitations. At the same time, we assumed that the spread of due diligence programmes on the ground in recent years, both as an extension of 3Ts coverage and as pilot projects for gold, would have a positive impact on the sector as a whole due to the mixed geographical spread of mining sites.

6.1. Impact of mining and income

According to mobile surveys, 46 percent of the respondents said mining had made their life better, 35 percent reported it had made no change at all while 12 percent suggested it had made their lives worse (N = 473). At the same time, two-thirds of the respondents reported being unable to feed, clothe and house themselves or their families with their current incomes, and 45 percent of the respondents indicated their incomes had decreased in the past year. While those numbers were similar in both DDP and non-DDP areas, data from the mining sites visits show that for 3T miners, the median weekly income per miner appears higher in areas covered by due diligence programmes than in non DDP mines. These results should be interpreted with caution, because socio-economic well-being of community members is influenced by many factors. For example, an important economic factor seriously affecting the buying-power of the Congolese population since 2016 has been the depreciation of the *Franc congolais*.

6.2. Presence and interference of armed actors, including illegal taxation and forced labour

Data from field visits show that FARDC or irregular armed groups were present on 35 percent mines sites and interfering in 26 percent of the mining sites included in this study (N = 623), with a strong difference between DDP mining sites (10 percent, N = 289) and non-DDP sites (40 percent, N = 334). We also noted a better performance in DDP mines, regarding illegal taxation by an armed actor and forced labour (although the overall proportion of mines where forced labour was observed, was low).

In the mobile surveys, over 40 percent of respondents reported that they were not getting paid for their work and around 20 percent reported that they were working to pay a debt (although we did not specify the type of debt so one could have been referring to a personal debt unrelated to mining operations or, for example, the repayment of a loan provided by a moneylender who pre-financed a mining-related activity.⁸¹

6.3. Child labour

The presence of children under 15 working in the mineral exploitation was reported in 16 percent of the mining sites (N = 238), most being in the gold sector. We noticed a strong difference between DDP mines

81 De Brier G. & Merket H. (2017), *op. cit.*, p. 32.

(5 percent, N = 110) and non-DDP mines (26 percent, N = 128). Over half of the respondents (54 percent, N = 269) of mobile surveys reported that they have seen children working in mines in the past six months.

6.4. Presence and support from state services, corruption and illegal taxation by non-armed actors

State services are more present in DDP mines than in non-DDP mines, and abusive taxation by state services seems to be less frequent in DDP mines. Only half of all respondents (50 percent, N = 179) indicated feeling supported by state services⁸² and a higher proportion of these individuals were in areas with due diligence programmes. Similarly, individuals in areas with due diligence experienced or heard about corruption *less* often than their counterparts in non-due diligence areas.

6.5. Violence and ethnic discrimination

Overall, 47 percent of respondents reported seeing or hearing an act of violence and 28 percent reported that they had experienced violence. Individuals were just as likely to report having heard of, or been a victim of violence in a DDP area than a non-DDP area. Police or government agents were the most reported perpetrators of violence. 36 percent of respondents reported experiencing ethnic discrimination—this figure was more or less comparable in both DDP and non-DDP areas.

6.6. Safety in mines

Although the difference is rather small, people in DDP areas reported witnessing or hearing about accidents at mine sites less often (41 percent) than their counterparts in non-DDP areas (47 percent). An examination of the outcomes of mine accidents revealed that just over half (51 percent) of respondents who had witnessed or heard of an accident also believed that the accident resulted in someone's death.

6.7. Environmental degradation

Reports of deforestation, bush meat consumption, use of mercury and pollution of waterways were comparable in both DDP and non-DDP areas (proportions of respondents reporting environmental impacts were slightly higher in DDP zones). The use of mercury was confirmed in about 35 percent of the gold mining sites visited (N = 284) but, those mining sites accounted for 72 percent of the total estimated population of gold miners in our study (N = 72,625).

6.8. Conclusion

Although some human rights and labour violations were observed less frequently in DDP mines compared to non-DDP mines (e.g. illegal taxation by state services, interference by FARDC, child labour), our findings demonstrate that these abuses still occur in mines and mining zones which are covered by responsible sourcing programmes. These field observations were supported by the results of the mobile surveys reflecting individual perception and experience. Mobile surveys revealed that many respondents in both DDP and non-DDP mining zones reported hearing of or personally experiencing illegal taxation, acts of violence, forced labour and child labour. Moreover, comparable proportions of respondents reported hearing about or experiencing accidents in mines (including fatal accidents), suggesting that precarious working conditions in artisanal small-scale mines remain a pressing issue. Although our study does not allow us to draw conclusions about causality, nor to compare accident frequencies in DDP zones versus non-DDP zones, it clearly suggests that safety conditions in artisanal mines need to improve in both due diligence and non-due diligence zones.

82 The rest of the respondents did not find state services supportive (39 percent), did not know (7 percent) or thought this question does not apply to them (4 percent). Cf. Chapter 5.3.3 Presence and performance of state services.

6.9. Lessons learnt

Obtaining feedback from miners and their communities offers critical insight on the impact of due diligence in eastern DRC. The methodology deployed for this study relied on a large sample of mine sites and individuals directly working and living in artisanal mining areas. We used mobile phone surveys, which offer a safe, anonymous and cost-effective way to reach individuals who were often in remote rural areas.

Based on the data presented in this study, due diligence programmes appear to have a positive impact on some of the conditions of extraction and mitigation of some of the serious abuses often linked to mineral exploitation in eastern DRC. However, it is not possible to assess if these programmes are improving the situation on the ground, or deployed in what are already more stable and accessible areas of the country. For some categories of this study, it appears that due diligence has a limited impact, for example, on miners' economic welfare where a significant proportion of workers reported decreasing incomes and working to pay a debt. Both field and mobile surveys data on child and forced labour underscore the systemic challenges of advancing human rights in eastern DRC.

The findings of this study need to be interpreted with some caution for the following reasons:

- As a pilot study, this investigation was undertaken over a short time period. As a result, it may be helpful to consider the results as a baseline to support future measurement of the impact and progress of due diligence in years to come.
- Our mobile-based surveys collected data on the 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.
- Participation in due diligence is not random and mining operations in due diligence areas may have different socio-economic characteristics compared to non-due diligence sites, which potentially introduces a selection bias between due diligence and non-due diligence areas.
- Multiple factors influence community well-being and living and working conditions in Eastern Congo, making the evaluation of a single variable a tough task. For example, the depreciation of the *Franc Congolais* since 2016, has seriously affected the buying power of the Congolese population. Furthermore, the fluctuating nature of global commodity markets can have a tremendous impact on local selling prices for minerals. Finally, other socio-economic development initiatives not related to due diligence programmes but undertaken in the same mining areas where responsible sourcing programmes are established, can impact the local population's perceptions and well-being. Future studies should try to take full account of the complexity of the economic, social and political context in the DRC so as to better grasp the net effect of due diligence programmes on the lives of people in mining communities in Eastern Congo.

6.10. Recommendations

This study offers an important baseline for deepening our understanding of due diligence through an analysis of the social, economic and human rights dynamics in Eastern Congo. The combination of in-person and mobile phone surveys provides nuance on local complexities by combining field observations with perceptual data collected from mobile phone users living and working in artisanal mining areas.

While participation in due diligence programmes *correlates* with better direct outcomes for mining production, this should not be extrapolated to imply any *causal relationship* between due diligence and positive human rights and development outcomes. Although we may find positive human rights outcomes in more stable areas, we cannot say with full certainty that these outcomes are directly attributable to due diligence because such outcomes are by default disproportionately present in stable areas. Only through a longitudinal study may we be able to disentangle the specific impacts of due

diligence on key economic, social and environmental conditions.

The reported presence of child labour, poverty and violence by miners, women and community members suggests that irrespective of the relative effectiveness of due diligence, basic human rights and necessities remain elusive for large segments of the population in Eastern Congo. This provides an opportunity for donors, companies and other partners to invest in supplementary projects to address socio-economic and governance issues in mining communities such as, child labour, gender equality, health and safety or even business skills.

At present, due diligence is primarily focused on identifying and mitigating risks of adverse impacts associated with the conditions of mineral extraction and the relationships of suppliers operating in conflict regions.⁸³ We recommend that additional effort be directed at driving economic, social and environmental change and transformation through due diligence programmes, which can play a *catalytic role* for responsible artisanal mining practice in Eastern Congo and beyond.⁸⁴

To make due diligence more impactful as a social and economic and human rights intervention in Eastern Congo, we believe that the following points need consideration:

- 1. Measuring progress:** The study created a baseline and shed light on a list of mining and human rights conditions in due diligence and non-due diligence programmes in line with OECD Annex II [see introduction]. Measuring progress at the site level over time can offer meaningful and practical value for the design of due diligence and other mining development programmes. We believe that tracking progress over time can yield deep insights into the specific effects of due diligence and other programmes that may be happening in parallel. At an aggregate level, this approach can, for instance, help us compare the progress made in DDP and non-DDP mine zones by province and specific minerals. Such an approach will require further investment into monitoring and impact evaluation so as to obtain larger samples to support more robust analysis and practical lessons at mine sites.
- 2. Creating an approach to impact that is meaningful to miners and mine communities:** The baseline study offers a *diagnostic* of the impact of due diligence on human rights anchored in direct feedback from miners and communities. Creating approaches that positively impact miners and their communities will require more continuous engagement and commitment to putting the rights of the local population at the center of due diligence and other programme initiatives. Reported violence and labour abuses underscore the need to develop more effective grievance and complaint systems for miners and communities to empower 2-way dialogue and actual change on the ground.
- 3. Strengthening linkages and coordination between due diligence and other mining and development initiatives:**

As tools serving broader socio-economic goals, future due diligence programmes can have three practical implications for artisanal mining:

- a. Linking due diligence programmes to other mining technical assistance and other economic development programmes appears critical to leverage due diligence support with capacity building, financial and other interventions in mining communities. Future impact evaluation can also provide a better understanding of the effectiveness of due diligence, mining practices and other economic development interventions in order to increase resources allocated to achieve maximum impact.
- b. Local and national government and non-governmental stakeholders need to play an integral role in articulating the role of due diligence within their broader development strategy. Doing so will require moving beyond due diligence as a 'check-the box' exercise to link certification with actual development outcomes and progress (e.g. sustainable development goals (SDGs) and local development strategies).
- c. International partners and other minerals supply chain actors need to support more comprehensive and systematic impact monitoring to improve impact measurement through increased data sharing

83 OECD Due Diligence Guidelines (2011:14).

84 See the goals of BGR (https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-DRC/CTC_DRC_node_en.html) and Tetra Tech (<http://www.tetratech.com/en/projects/capacity-building-for-responsible-minerals-trade>).

and coordination. Despite its unique scope, this baseline study only covered a portion of the mining areas in Eastern Congo. Collaboration between international partners and private sector organizations in the downstream of the supply chain can help create a more sustainable and robust evidence base to improve due diligence and human rights impacts. The OECD offers a multi-stakeholder forum for convening further discussions around the impact of due diligence. Other groups such as the European Partnership for Responsible Minerals (EPRM), the Responsible Mining Initiative (RMI) or the Public-Private Alliance for Responsible Minerals Trade (PPA) can also play a central role in supporting the creation of a shared knowledge and database on due diligence, human rights and development in conflict affected and high-risk areas (CAHRAs).

4. Methodological considerations: The prevailing conditions in mining communities in Eastern DRC posed a number of practical and logistical challenges (see methodology in chapter 3). The next study phase will need to:

- a. Develop robust strategies to increase panel size, overall response rate and womens' participation, in particular.
- b. Overcome or bypass local infrastructure and network limitations so as to increase the scope of the study thereby allowing us to enlist more mobile survey respondents.
- c. Further adapt our questionnaires to enhance efficacy and allow for greater depth of analysis so as to enable us to measure the net impact of due diligence programmes in Eastern Congo as accurately as possible.

ANNEXE I: MOBILE PHONE SURVEY QUESTIONS.

(ODK questionnaire used in this study is available on request)

Category	Question No.	Survey	Questions	Answer Options
INTRODUCTION			<p>Hello. You recently provided the International Peace Information Service (IPIS) with your number to contact you to participate in a survey about artisanal mining in Eastern Congo. We will conduct a total of 3 surveys to find out how you and your community are impacted by artisanal mining. This information will help us understand the living and working conditions of artisanal miners so as to recommend policies to improve the artisanal mining sector.</p> <p>Participation in the survey is voluntary and your answers will be kept anonymous. The survey takes approximately 2 minutes to finish and we will send you 1000FC in credit for finishing the survey. We will read you the questions, and you can select your answer by pressing the number on your phone that corresponds to your answer. If you want to skip a question or don't know the answer, press 0. If you want to hear the question again, wait and we will repeat it for you.</p>	
LANGUAGE CHOICE				
PRIVACY & CONSENT			Would you like to take the survey now?	Please press 1 for Yes, 2. for Call back later, 3. for No, you do not wish to take the survey.
DEMOGRAPHIC	(if 1 to consent) 1	2 and 3	Are you male or female?	Press 1. Male, 2. Female
SERIOUS ABUSES-GENDER	(if 2 in Q1) 2	2	In the past six months, were you treated badly because you are a woman?	Press 1. for Yes, 2, for No,
DEMOGRAPHIC	3	1	How old are you?	Press 1. if you are under 18 years old, 2. if between 19 - 30, 3. if between 31- 40, 4. if over 40
DEMOGRAPHIC	4	1,2 and 3	Are you a miner?	Press 1. for Yes 2. for No

Category	Question No.	Survey	Questions	Answer Options
DEMOGRAPHIC	(if 2 in Q4) 5	1,2	Do you provide goods or services to people working at a mining site?	Press 1. for Yes 2. for No
DEMOGRAPHIC	6	1	How far do you live from the mining site?	Press 1. for less than an hour, 2. for more than an hour, 3. for less than a day, 4. for more than a day
DEMOGRAPHIC	7	1	How long have you lived in this area?	Press 1. for less than a year 2. for less than 2 years 3. for less than 3 years 4. for more than 3 years
CONDITIONS OF EXTRACTION	8	1	What would you say has been the effect of mining on your life?	Press 1. if mining has made your life better 2. if mining has made no change to your life 3. if mining has made your life worse 4. if you do not know
CONDITIONS OF EXTRACTION	9	1	Do you know about any initiatives promoting responsible sourcing of minerals like ITSCi, BSP and BGR?	Press 1. for Yes, 2, for No,
CONDITIONS OF EXTRACTION	10	3	Please tell us how mining is impacting your local area?	Give your answer and press # when complete.
CONDITIONS OF EXTRACTION	11	2	In the past six months at the place where you live or work, did you experience or hear about an accident at a mining site?	Press 1. for Yes, 2, for No,
	12	2	What happened?	Press . . . 1. If People were killed in a mining accident 2. If People were injured in a mining accident 3. If People were killed and injured 4. If No one was harmed
SERIOUS ABUSES	13	2	In the past six months at the place where you live or work did you hear about any act of violence?	Press 1. for Yes, 2, for No,

Category	Question No.	Survey	Questions	Answer Options
	(if 1 to Q13) 14	2	According to you, who used violence?	Press 1. for Police or Government services, 2. for Mining company/ private security, 3. for Miners, 4. for Autorité coutumière, 5. for Villagers, 6. for bandits 7. for FARDC 8. for Groupe armée 0. I don't know,
SERIOUS ABUSES	15	2	In the past six months, did you experience any form of violence?	Press 1. for Yes, 2. for No,
	(if 1 to Q15) 16	2	Which form of violence?	Press 1. for Physical violence 2. for Sexual violence 3. for Other
SERIOUS ABUSES-ETHNIC	17	2	In the past six months, were you treated badly because of your origin?	Press 1. for Yes, 2. for No,
CHILD LABOUR	18	3	In the past six months at the place where you live or work, have you seen children under 15 year working at a mining site?	Press 1. for Yes, 2. for No,
FORCED LABOUR (miners specific)	(if 1 to Q4) 19	3	Do you work for yourself?	Press 1. for Yes, 2. for No,
FORCED LABOUR (miners specific)	(if 2 for Q19) 20	3	Who do you work for?	Press 1. for Other miner 2. for Negociant 3. for Chef coutumier 4. for Groupe armée 5. for FARDC 5. for Agent de l'état 6. for Commerçant 7. for Cooperative 8. for Other
FORCED LABOUR/ DIRECT SUPPORT (miners specific)	(if 1-8 in Q20) 21	3	Are you free to leave the mine you work at any time?	Press 1. for Yes, 2. for No,

Category	Question No.	Survey	Questions	Answer Options
FORCED LABOUR/DIRECT SUPPORT (miners specific)	(if 1-8 in 20) 22	3	Are you paid for your work?	Press 1. for Yes, 2, for No,
FORCED LABOUR/DIRECT SUPPORT (miners specific)	(if 2 for Q22) 23	3	Are you working to pay a debt?	Press 1. for Yes, 2, for No,
DIRECT/ INDIRECT SUPPORT (miners specific)	24	3	Do you pay a tax or fee to operate in the mining site?	Press 1. for Yes, 2, for No,
DIRECT/ INDIRECT SUPPORT (miners specific)	25	3	If 1, Who do you pay the tax?	Press 1. for Agent de l'état 2. for FARDC 3. for Groupe armee 4. for Chef coutumier 5. for Mining cooperative 6. for Commerçant 7. for Other
DIRECT/ INDIRECT SUPPORT (miners specific)	26	3	Do you pay a tax to transport minerals out of the mine?	Press 1. for Yes, 2, for No,
DIRECT/ INDIRECT SUPPORT (miners specific)	27	3	If 1, Who do you pay the tax?	Press 1. for Agent de l'état 2. for FARDC 3. for Groupe armee 4. for Chef coutumier 5. for Mining cooperative 6. for Commerçant 7. for Other
LIVING CONDITIONS - ECONOMIC	28	3	Do you support a family with your income?	Press 1. Yes, 2, No,
LIVING CONDITIONS- ECONOMIC	(if 1 to 28) 29	3	Is your income sufficient to feed, clothe and house your family?	Press 1. Yes, 2, No,
LIVING CONDITIONS- ECONOMIC	(if 2 to 29) 30	3	Is your income sufficient to feed, clothe and house yourself?	Press 1. Yes, 2, No,

Category	Question No.	Survey	Questions	Answer Options
LIVING CONDITIONS-ECONOMIC	31	3	How would you compare your income from last year to your income this year?	Press 1. if your income has increased from last year to this year, 2. if your income has remained the same from last year to this year, 3. if your income has decreased from last year to this year, 4. if you do not know
SERIOUS ABUSE-GOVERNANCE	32	2	In the past six months at the place where you live or work, have you experienced or heard about bribery or corruption?	Press 1. Yes, 2. No,
SERIOUS ABUSE-GOVERNANCE	(if 1 to 32) 33	2	Who committed acts of corruption or demanded a bribe or illegal tax?	Press 1. for Agent de l'état 2. for FARDC 3. for Groupe armee 4. for Chef coutumier 5. for Mining cooperative 6. for Commerçant 7. for Villagers 8. for Other
CONDITIONS OF EXTRACTION-GOVERNANCE	34	3	Is SAEMAP, Division de mines or Police de Mines present in your local area?	Press 1. Yes, 2. No, 3. Don't know
CONDITIONS OF EXTRACTION-GOVERNANCE	(if 1 to 34) 35	3	Do you think SAEMAP, Division de Mines, Police de Mines and other 'services de l'état' support your local area?	Press 1. if you feel supported by them 2. if you do not find them supportive 3. if you do not know 4. if this question does not apply to you
ENVT	36	2	In the past six months, have you seen any of the following environmental impacts in your local area?	Press 1. Deforestation 2. Consumption of bush meat 3. Both deforestation and consumption of bush meat 4. None of the above
ENVT	37	2	In the past six months, which of the following environmental impacts linked to mining have you seen in your local area?	Press 1. Use of mercury 2. Pollution of waterways 3. Both use of mercury and pollution of waterways 4. None of the above
Goodbye	1	1,2	Thank you for participating in the IPIS Mining Impact survey. Soon, we will send you 1000FC airtime directly to your phone.	

Category	Question No.	Survey	Questions	Answer Options
Goodbye	1	3	Thank you for participating in the final IPIS Mining Impact survey. Soon, we will send you 1000FC airtime directly to your phone. We appreciate your responses and will keep you informed about the results of the survey.	
Goodbye	2	1, 2 and 3	We will call you back another time. Thank you!	
Goodbye	3	1, 2 and 3	No problem if you don't want to participate in this survey. We will call you in the next survey round!	
Goodbye	4	1	(if <18) Sorry but you are too young to participate in this survey. Goodbye.	
Error message			You pressed a number which isn't available. Please try again.	
Timeout			You haven't answered this question yet. We will play it again.	

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