

Full Length Research Paper

Small-scale mining and child labour in Kolwezi, Democratic Republic of Congo

Godelive Kusimwa Batano^{1,3*}, Martin Doevenspeck² and Nene Morisho Mwana Biningo³

¹Bayreuth International Graduate School of African Studies (BIGSAS), University of Bayreuth, Germany.

²Department of Geography, Faculty of Biology, Chemistry & Earth Sciences, University of Bayreuth, Germany.

³Faculty of Economics and Management, Université Catholique de Bukavu, DRC.

Received 29 March, 2023; Accepted 6 June, 2023

Child labour is a critical issue in artisanal and small-scale mining (ASM) in the Democratic Republic of Congo. The case of Kolwezi in Lualaba is of interest because the area is known as the capital of cobalt, a strategic mineral for the transition to a low-carbon economy. Since 2017, global demand for cobalt has been soaring and this raises the question of working conditions in the ASM. This paper attempts to provide a deeper understanding of the phenomenon of child labour in artisanal cobalt mining. The objective is to analyse the political and socio-economic drives of child labour in Kolwezi. By drawing on the current state of the literature and reports on child labour in the mines, as well as field survey, we investigate the social, political, and economic causes of child labour. Results suggest that children's involvement in the artisanal labour market is caused by poverty status, parental conceptions, income inequalities and market imperfections. The implication is that a holistic approach is required to effectively address the problem of child labour. Such an approach must consider both the situation of the child and the household where child labour occurs. The study emphasizes the importance of sensitization of parents and a holistic approach in all initiatives to eradicate child labour in ASM.

Key words: child labour, ASM, critical modern slavery, pivotal child.

INTRODUCTION

“There are no children here. We regularly check at the entrance to ensure that all miners are over 18” (Focus group, Kolwezi, September 2021).

Since parts of the global economy are moving away from carbon-led energy systems, the demand for cobalt used for solar photovoltaics and batteries in electric vehicles is soaring (Bazilian, 2018). The market value of cobalt is projected to be more than double between 2021 and 2027, from an estimated 8.57 billion US dollars in 2021 to a forecasted 17.39 billion US dollars in 2027 (Statista, 2022). At the upstream of the cobalt supply

chain, demands are directed above all towards the rich deposits in the Democratic Republic of Congo (DRC). According to the U.S. Geological Survey (2022), the global cobalt production was 170000 metric tons in 2021, with the DRC contributing up to 120000 tons.

In DRC, cobalt is mainly produced industrially. However the labour intensive artisanal and small scale mining sector (ASM) contributes between 15% (BGR, 2019) and 30% (De Silva et al., 2019) to DRC's total cobalt exports.

According to UNICEF (2014), more than 40000 children are working in hazardous conditions in mines of southern

*Corresponding author. E-mail: godelive.batano@uni-bayreuth.de.

DRC, with a majority in the cobalt sector. For International Labour Organization (ILO) (2005), “child labour in mining and quarrying is in virtually all cases, a worst form of child labour because of the extent and severity of hazards and the risks of death, injury and disease.” In ASM simple tools as shovels and chisels are used to dig underground shafts under precarious and hazardous working conditions (Geenen, 2018; Hentschel et al., 2003; Hilson, 2011; Rothenberg and Radley, 2014). About 40% of the Congolese artisanal mining labour force is younger than 18 years (Tsurukawa et al., 2011; World Vision, 2013).

The vast literature on child labour is not unanimous on the question of whether children should be allowed to work or not. The work-free childhood discourses argue directly or indirectly that children should not work. These approaches, embedded in a Eurocentric view, are used by international organisations to mobilize practitioners and media in various programs to eradicate child work suggesting that work-free childhood has to be the global norm (Abebe and Bessell, 2011). Studies on child labour in ASM tend to consider children as modern slaves, and adopting work-free childhood discourses, they emphasize child exploitation (see for example Free the Slaves, 2011; Kyamwami, 2013; Sovacool, 2021). This focus on exploitation suggests a ban on imports of goods the production of which involve child labour (Emerson, 2009). This paper argued in line with other scholars (Hilson, 2010; Jonah and Abebe, 2019; Kesby et al., 2006; Okyere, 2013, 2018) that these policy interventions are based on idealized Western norms and obscure rather than reveal realities of childhood in the Global South. Proposing the eradication of child labour as a panacea (ILO, 2005, 2011) tends to overlook the complexity of children's daily lives (Hilson, 2010, 2012; Okyere, 2018; Owusu et al., 2021) and may even worsen the situation of poor families and their children (Basu and Tzannatos, 2003; Emerson, 2009; Fors, 2012; Gnanou, 2017).

To unpack the situation of children in the South, we suggest mobilizing the socialization, critical modern slavery, and labour precarity perspectives. Child labour is embedded in a specific social and cultural trait such that it constitutes itself a socialization process (Potter and Lupilya, 2016; Togunde and Carter, 2006) as a means of transmitting values from parents to children. This means that the child is not only a natural category but a socio-cultural construction (Abebe and Bessell, 2011; James and Prout, 1997). Thus, an understanding of the social and cultural contexts in which children's work takes place is crucial in order to address hazardous child labour (Morrow and Boyden, 2010).

In this paper, we ask for the social, political, and economic causes of child labour in artisanal cobalt mining in Kolwezi, the Katanga province of DRC.

Social childhood research should address both the connection and the contradiction between the global and the local dimensions of childhood (Liebel, 2020). Thus,

limiting the reasoning to neo-abolitionist discourses restricts our scope of understanding and leads to the inaccurate formulation of public interventions that can create unintended harm to children (Maconachie and Hilson, 2016; Myers, 2001; Okyere, 2018).

Some researchers have challenged these Eurocentric child labour “norms” in Zimbabwe (Robson, 2004), Ghana (Hilson, 2010; Okyere, 2013) and Sierra Leone (Maconachie and Hilson, 2016). In this study, we draw upon this work not to idealize child labour (Okyere, 2013) but to highlight that child labour in ASM is more complex and multifaceted than it appears to be from an international abolitionist perspective. Robson (2004) points out that there is a need to de-emphasize the Northern myths of childhood as a time for play and innocence. This study contributes then to a critical rethinking of the mainstream work-free childhoods' argument to enhance the understanding on why children work.

In the following, we first present the conceptual framework locating this research among critical modern slavery, socialization, and labour precarity approaches. Then, in the third section we outline the methodology and research ethics explaining that data were collected through interviews with experts, parents and children. We present the context of ASM in the fourth section, insisting on mining governance and the proximity of mining activities to residential houses. Finally, in the fifth section, we discuss the results of our investigations by discussing how poverty, parents' behaviour, income inequalities and market imperfections affect child labour.

Approaching child labour: conceptual framework

Around 160 million children worldwide work (ILO and UNICEF, 2021). The ILO defines child labour as a “work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development” (ILO, 2022). To promote respect for fundamental rights at work, the ILO introduced the Minimum Age Convention (C138) in 1973 which was reinforced by Convention 182 on the worst forms of child labour (WFCL), signed in 1999 and ratified by ILO members. Convention C138 sets this minimum age at 15 years but accepts that children of thirteen or fourteen can do light work.

Child labour in sub-Saharan Africa is above all poverty driven (Bass, 2004; Hentschel et al., 2003; Maconachie and Hilson, 2016; Mwami et al., 2002; Owusu et al., 2021). In their analysis of child labour in Tanzania, Mwami et al. (2002) argue that the main explanation for children's involvement in ASM is the inability of parents to meet children's basic needs. However, the poverty assumption is challenged by Bhalotra and Heady (2003) who found that children in land-rich households are more likely to work because of imperfections in labour and land

markets.

To analyse accurately the work of children in ASM, we use the approaches of socialization, labour precarity, and a critical perspective on modern slavery. These three strands of debate disassociate themselves from the mainstream work-free childhoods discourse and provide space for a complex analysis of child experiences.

The remainder of this section discusses first the approach of modern slavery, then the theory of socialization, and finally labour precarity in ASM. Bales (2016) provides examples of modern slaves in the mines, suggesting that slavery is not a practice relegated to the past. The 1926 slavery convention of the League of Nations defines slavery as “the status or condition of a person over whom any or all of the powers attaching to the right of ownership are exercised” (Mende, 2019). The conceptualization of slavery in the 21st century differs from its historical forms but the victims in both cases suffer from dehumanization through the loss of freewill, power, and identity (Derby, 2009). Studying child labour through the lens of modern slavery is embedded in the international advocacy for the eradication of WFCL including child mining. ASM is an unsafe environment for both adults and children and numerous studies highlight issues such as the harsh working conditions of non-stop work underground, lack of safety measures, poor hygiene, lack of appropriate equipment, fatal accidents, and health hazards (Amnesty International, 2016; Banza Lubaba Nkulu et al., 2018; Hermes Investment Management, 2017; Rothenberg and Radley, 2014; Sovacool, 2021).

Critical modern slavery studies question this dominant approach to contemporary slavery. Mende (2019) highlights five critical points: Her first critique is that slavery is defined as a homogeneous concept with a clear distinction between the slaves and the non-slaves although in actuality “people’s experience of exploitation, abuse, powerlessness and restriction ranges along a continuum” (O’Connell Davidson, 2010). The second line of criticism she makes is against the broad consensus that modern slavery is an absolute evil to be fought against. Such a conceptualization does not only distort the consideration of the diversity of situations of exploitation and oppression but also leads to a depoliticization of slavery (Mende, 2019; Davidson, 2010) undermining the analytical acuity. Her third point relates to the emotionalization of modern slavery, which falls again into the binary trap of juxtaposing the North with the South, that is, the saviour with the victim who needs to be rescued. Fourth, she highlights the limitations of anti-slavery policies that ended up repressing slaves rather than slavery. This is visible in anti-trafficking policies which lead to a legitimization of state restrictions not only on trafficking itself but also on migration in general (Aradau, 2008; Mende, 2019). As a last point of critique, Mende identifies that slavery research focuses only on one dimension of power, that is control, and neglects the structural, discursive normalizing, and latent

power dimensions (Choi-Fitzpatrick, 2017; Mende, 2019).

For the situation of the child in the South, it is crucial not to detach child labour from the social, political, and economic environment in which it is shaped. The neo-abolitionist discourses lead to a legitimization of a ban on child labour (through a boycott of products supposedly containing child labour). Despite the probably good intention behind this,¹ understanding the root causes of child labour is important as “a blind and uncritical acceptance of international codes and agreements on child labour could have an adverse impact on children” (Maconachie and Hilson, 2016). And even the work-free approach differentiation between harmless and harmful labour undermines an accurate understanding of the situation of children (Bourdillon 2019; White, 2009) by focusing on harm and neglecting the benefits for children (Bourdillon, 2019). Robson (2004), for example, calls for a shift from Northern myths about childhood to an acknowledgement of children’s role in caring for HIV-positive adults. The present study builds on these critical views to analyse the causes of child labour. The focus is on an in-depth analysis of the lives of children in the mines, not limited to physical harm, but integrating a more comprehensive understanding of children’s experiences.

The second conceptual device is socialization which refers to the basic process of social interaction by which people acquire behaviours essential for effective participation in society (Gaitán, 2014). Children’s work cannot be analysed independent of the socio-cultural patterns in which it is produced. According to Mazrui (1986), cited by Bass (2004), the Africa triple heritage – indigenous, Islamic and colonial influences – shapes children’s lives in Africa today and both indigenous and colonial² factors seem relevant to us in the case of DRC’s history. In general, children in Africa participate from a very young age in domestic and field activities (Gnanou, 2017:85); indigenous cultures consider child work as part of household production which serve the purpose of preparing the child for his future adult role (Bass, 2004). Socio-cultural norms not only provide the meaning of what a child is and what childhood implies (Karikari, 2016) but also convey the conception of child labour as a means of informal apprenticeship transmitting valuable skills (Bass, 2004; Bourdillon and Mutambwa, 2014; Kielland and Tovo, 2006; Krauss, 2016). This apprenticeship relationship between the child and his mentor can in some contexts drift towards exploitation (Kielland and Tovo, 2006:75-88; Krauss, 2016). The

¹ Some scholars are sceptical of this strategy because, in sub-Saharan Africa, the industrial sector is small and it employs less or no children making the effect of this policy marginal at the continental level (Bass, 2004; Gnanou, 2017).

² Most African countries have experienced periods of colonization by Western countries and have developed an extroverted agriculture oriented towards the export of crops where children were employed though the work of children was inconspicuous in colonial labour statistics because it passed as that of the household head (Bass, 2004; Grier, 2006).

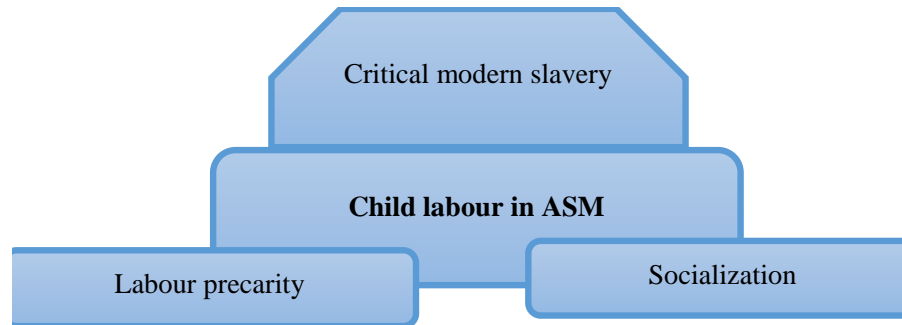


Figure 1. Conceptual framework.
Source: Conception of the authors.

allegation that child labour is socio-culturally specific (Abebe and Bessell, 2011; Bourdillon, 2013; Bourdillon and Mutambwa, 2014; Togunde and Carter, 2006; White, 2009) should not obscure that the context itself is changing. As pointed by Kesby et al. (2006:187) “values and forms of socialization seen as ‘traditional’ are not static formulas handed down from the past but dynamic systems of knowledge/power that are constantly adapting as people struggle to maintain or change them.” This raises hybrid conceptions of childhood influenced by the current political-economic configurations. Such a combination constitutes an angle of analysis that can provide further insights into the current experiences of children in ASM and is the focus of this study.

The third concept is labour precarity. In sub-Saharan Africa, children are affected by political and economic constraints such as poverty, debt, corruption, war, ethnic conflict, disease, international competition and ineffective legislation (Bass, 2004). During the debt crisis of the 1980s, structural adjustment programme forced countries to adopt austerity measures regarding social spending. These measures undermined the provision of social protection (Cooper, 2018), left workers in situations of precarity (Barchiesi and Querrien, 2017) and increased child poverty and child labour in some countries (Abebe and Bessell, 2011; Robson, 2004).

The attention to political economy highlights the dynamics that shape child labour (Abebe, 2021), as power relations that define wealth distribution can impoverish some households and increase the need for child labour. The labour precarity conditions in the ASM of Lualaba result from a historical burden linked to the decline of parastatal structures (Dibwe Dia Mwembu, 2001; Makori, 2017; Rubbers, 2010, 2017) which revived the ASM. Currently, this sector is also subjected to capitalist market forces where the miner has little bargaining power (Kabemba and Mukuli, 2020).

To sum up, we draw on concepts of labour precarity (Cooper, 2018; Geenen, 2021; Makori, 2017) and socialization (Bass, 2004; Gnanou, 2017; Kielland and Tovo, 2006) as well as a rethinking of the modern slaves’ narratives (Brace and Davidson, 2018; Maconachie and

Hilson, 2016; Mende, 2019; O’Connell Davidson, 2010; Simic and Blitz, 2019) to analyse the causes of child labour. This conceptual framework allows for a deeper analysis of children’s experiences that goes beyond the work-free approach. Figure 1 shows the conceptual framework.

METHODOLOGY AND RESEARCH ETHICS

This study is based on a fieldwork carried out in Kolwezi from September to December 2021. The data were collected by qualitative tools including semi-structured interviews, focus groups and observation at artisanal mining sites.

A total of 27 semi-structured interviews were conducted with key stakeholders such as SAEMAPE (Service for Assistance and Supervision of Artisanal and Small-Scale Mining), administrative authorities and leaders of mining cooperatives in Lualaba, NGOs, parents (including head of households) and children. As the spectrum of actors was diverse, we developed three different survey instruments: for experts (E), for parents (P), and for children (C). The topics of the interviews were related to the role of actors in ASM, the causes of child labour, parents’ views on their children’s work and the interaction between mining activities and education. Semi-structured interviews with experts were conducted either at the workplace, to ensure that the interviewees were in a familiar space, or in another location chosen by the respondents. Purposive and snowballing strategies were important in locating expert-informants. At the end of the semi-structured interview, we asked them to refer us other informants with relevant knowledge on child labour. Being introduced to a respondent by another was helpful since people were reluctant to talk due to the sensitivity of the topic. The discussion with the parents took place either on the mine site during the day or at their homes in the evening. The interviews were conducted in French (for most interviews with experts) or in Swahili (for most parents and children). A purposive sampling was used to locate parents and children.

The focus of the three focus group discussions conducted at ASM was to understand the causes and effects of child labour. The focus group with the board members of two mining cooperatives concentrated on their perceptions and understanding of the causes of child labour. The two other focus groups with parents and children aimed to explore the frequency of children’s presence in the mines, the relationship between parents and working children, and the causes of child labour. The research team also carried out field observations at selected mine sites. The observation focused on the physical space where children perform their activities, the tools used and the attitude of the digger-parents in the mines. At

Cobalt production in tonnes, 2021^e

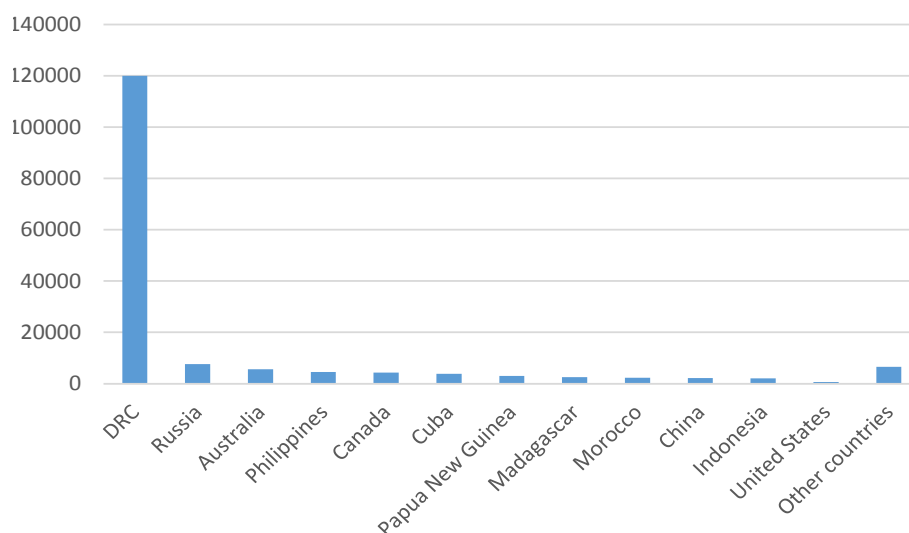


Figure 2. Cobalt production in tonnes, 2021^e, e=estimated.
Source: Based on data from U.S. Geological Survey (2022).

the end of each visit, field notes were drafted, and they allowed for an in-depth understanding of the opinions expressed during the interviews. The research assistants helped to decode specific words related to the dialect used on the site.

The use of a variety of respondents allowed us to produce data that covered a wide range of aspects related to child labour in ASM in Lualaba. The results provide an understanding of the complex nature of children's involvement in cobalt mining. However, we cannot claim that these results are applicable to the whole mining sector in DRC and this is not the purpose of this study. Artisanal mining sites in the DRC differ according to the type of minerals extracted but also the episodes of war experienced.

The issue of child labour in mining is a very sensitive one and respondents needed to be assured that the research was being conducted strictly for scientific purposes. Child labour is prohibited by law and takes place in hiding. To increase the comfort of respondents, two assistants with experience in artisanal mining research were recruited locally.

The data collected are reported anonymously. The research team always requested the respondent's voluntary participation. The respondent was reassured that he could participate or not, and that he could also discontinue his participation without any consequences for him.

Participants were given a form with detailed information about the purpose of the research, the use of the data, the respect of confidentiality and the contact information of the persons responsible for the research for any inquiry. To interview children, consent was required from the children themselves as well as their parents.

Context of artisanal mining

Cobalt mining in DRC

As a by-product of copper mining, cobalt deposits are mainly located in the south-eastern provinces of Haut-Katanga and Lualaba, the Congolese part of the so-

called copper belt (Kabemba and Mukuli, 2020). Depending on the pace of the global energy transition, cobalt demand could increase by 143 to 370% between 2020 and 2040 (Manley et al., 2022). Figure 2 shows the cobalt production in tonnes in 2021.

DRC accounts for more than 70% of the world cobalt reserve and is the leading producer of cobalt from mines (U.S. Geological Survey, 2022), "in 2020, 70% of the country's cobalt production was provided by five companies: KCC (Glencore), Tenke Fungurume Mining (TFM, owned by CMOC), Metalkol (ERG), Somidez (CNMC) and STL (Gécamines)" (Malu-Malu, 2021) and the market price went up to 51267 USD per ton in September 2022 (Mines.cd, 2022). Kolwezi with an estimated population of 510000 is the provincial capital of Lualaba and one of the most important mining centres for copper, cobalt, uranium, and radium. Figure 3a and b show the study location and some mining sites.

In 1906, the Belgian colonizer founded the *Union Minière du haut Katanga (UMHK)* – lately renamed *Gécamines* – which was the jewel of the Congolese mining industry (Rubbers, 2015). In 1938 Kolwezi town was founded by the UMHK as the headquarters of its newly created western division (Mthembu-Salter, 2009).

From 1928 to 1961, this industrial company implemented a stabilization policy for the workers in order to avoid high rates of turnover in a situation of increasing rivalry from other mining companies, for instance, those from Rhodesia (Dibwe Dia Mwembu, 2001). This social policy of Gécamines took care of the employer's nuclear family (wife and children) to ensure that it provided a quality workforce for the capitalist industry.

During the 1990s, the Congolese mining sector

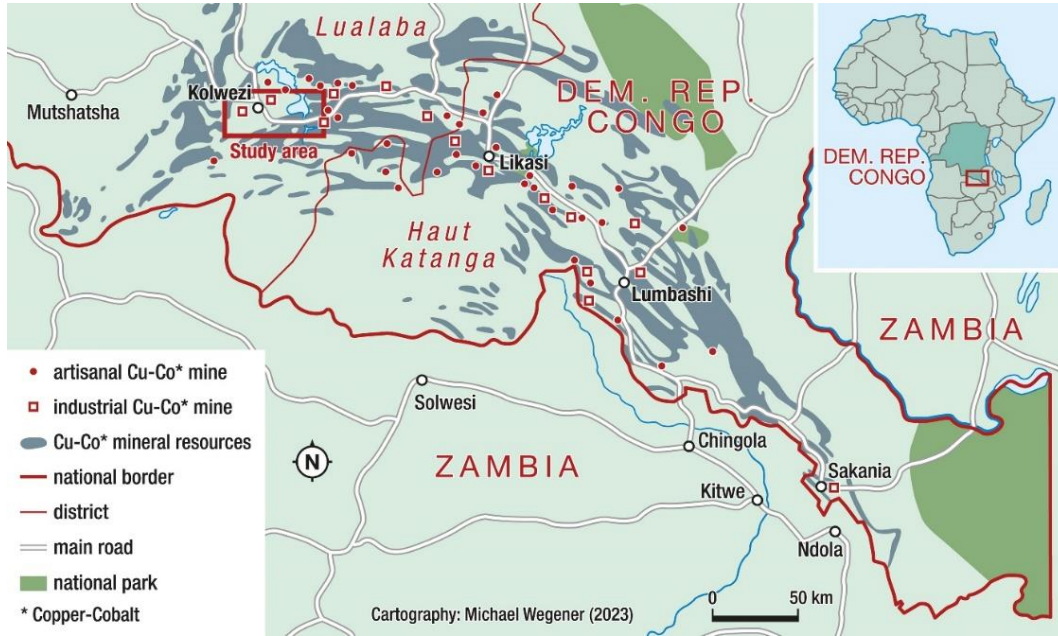


Figure 3a. Study location in the South Est of DRC.
Source: Authors.

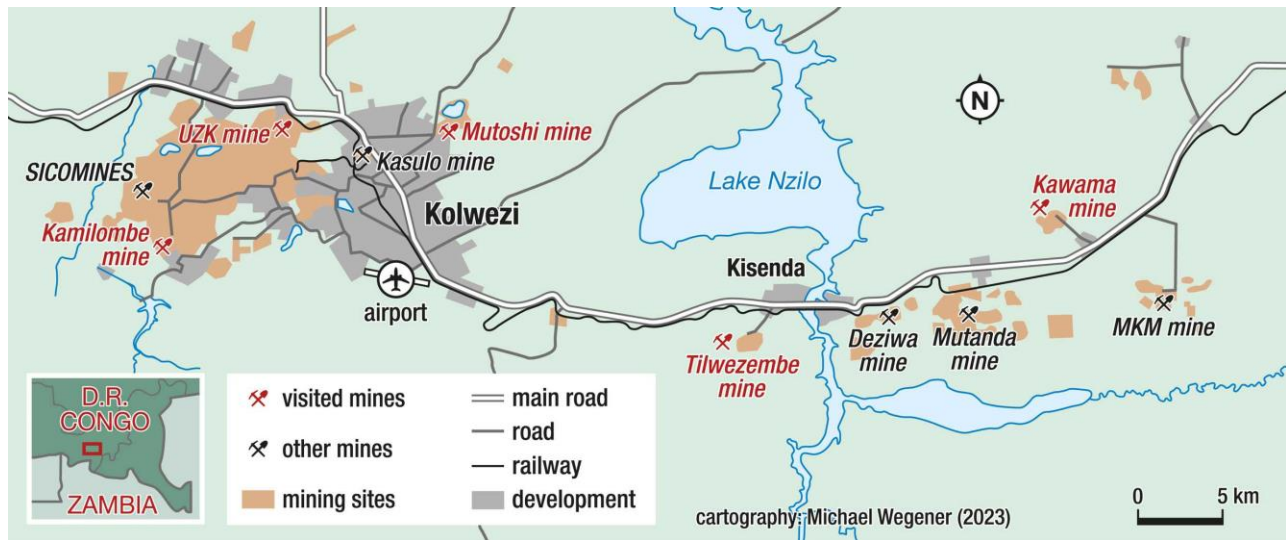


Figure 3b. Visited mines are in red, and the other mines of interest are in dark. The access to Kasulo was denied to the research team.
Source: Authors.

collapsed due to war, crises and economic mismanagement, thus the state-owned company bankrupted and ASM developed (Al Barazi et al., 2017).

Governance problems in a fragile state

The DRC has a clear legal framework concerning child labour. The DRC labour code (2002) defines all workers’

rights and regulations regarding labour, it also prohibits the employment of children under the age of 16. Article 26 of the mining code prohibits children under 18 years of age to enter mining (Code minier, 2018). The report of Amnesty International (2016) highlights gaps and weaknesses in Congolese mining regulation such that the country fails to protect miners (and children) from human rights abuse. The legal framework is not effectively implemented due to limitations related to the

implementation budget, dissemination in local languages, weak sanctions (COTECCO, 2020) and corruption (according to a community leader).

In a discussion, an agent from SAEMAPE stated that children are no longer present in cobalt ASM: “We are doing our best to withdraw children from mines, if you check at all the formal mining sites, you cannot find children.” This assertion is underscored by members of the cooperatives’ management committee, one of whom stated: “In this mining site there are no children, everything is controlled at the entrance. We ask for the voter’s card to ensure that the digger is an adult. If we find a child, he is immediately chased away.” The COTECCO report mentions 17 state and 20 non-state institutions involved in this fight. However, currently the government fails to properly coordinate all these actors by defining intervention domains (as health, nutrition, education, etc.).

Proximity between artisanal mining sites and residential houses

Lualaba province is characterized by the cohabitation of communities and mineshafts. An illustrative case is Kasulo. This mining site was a residential area. Around 2014, a resident who was digging a toilet found ore and started selling to trading houses (Expert 6). Several residents stepped over and started digging inside their houses and discovered that they could also find minerals. Then the government decided to relocate the people to Samukinda and the concessions were sold to Congo Dongfang Mining (CDM).

A human right activist explained that in the artisanal mining sites located far from the houses, it is difficult to find children, but for the sites close to the communities, the proximity of the mines to children’s houses creates real temptation. During holidays, if the kids do not have place for leisure, they go to ASM. Respondents underline that the mine joins the child at home. In some residential areas, heads of households fence off their plots with sheet metal to ensure that they can work without being seen or disturbed while digging underground for minerals (E5, E6). Then, child labour takes place within the household and not at a mining site per se.

In Lualaba, this proximity of housing to mining sites is rooted in its historical configuration, said a human right activist. During the colonial period, the city was shaped to serve the capitalist system of extraction and evacuation of minerals. Thus, the workers’ camps had to be close to their workplace, the mines. These residential areas, commonly called “cite”, include locations as Kapata, Musonoi, Lwilu, and Mutoshi, among others. When Gécamines collapsed, some of its concessions were given either to mining cooperatives or to private companies. The artisanal mining sector has mushroomed in the surrounding and children who live in these “cites” have easy mobility to enter artisanal mining.

Quantification of child labour in Kolwezi

It is difficult to quantify child labour in mining (E1, E2, E9) as it is prohibited by the Congolese mining law, and thus, illegal. In addition, children are irregulars at the mining sites because they go to school or move constantly from one site to another.

In 2014, UNICEF estimated that 40000 of children were involved in artisanal mining in the south of DRC (UNICEF, 2014). The Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) estimated that the number was 2500 children in the Haut Katanga and Lualaba (BGR, 2019). This lends credibility to informants who said that child labour is hidden, and the number fluctuates considerably. An administrative authority affirmed that there were 9000 children in Lualaba in 2017 and that it was difficult to get current statistics for 2021. According to a human right activist, children in Kolwezi work mostly on the surface, carrying out a variety of tasks such as washing the stones, digging with picks and shovels, collecting mineral stones at the surface, transporting minerals from the shaft to the trucks, sorting, and performing petty trade of water, food or cheap alcohol.

Drivers of child labour in Kolwezi

Subsistence poverty

Experts, parents, and children underline that the main reason for children’s involvement in mining is poverty³. One woman said that she is a widow and did not have enough money to feed her family of ten, so two of her children worked in the quarry carrying bags from the pit to the truck to earn between 3000 and 5000 CDF (Congolese Democratic Francs) a day⁴. The situation of poverty hinders the eradication of child labour. A civil society member said: “It is difficult to remove children from mines because of poverty. These children can be driven out today and come back tomorrow. The police can chase them and when they get home their parents tell them to go to another site.”

When cobalt prices rise, people come flocking to Kolwezi from neighbouring regions. These are poor, and food insecure households, said an administrative authority. Some families, coming from other provinces, send their children to the ASM because they are not able to feed them. These children stay near the restaurants on the outskirts of the mining sites to help the restaurant owners by cleaning the dishes and get food as payment for the day (E3, E4, E5, P9).

The fact that child labour is poverty-driven is widely supported by the literature (Basu and Van, 1998; Fors, 2012; Hamenoo et al., 2018; Hilson, 2010, 2012). Child

³ Poverty is addressed in absolute terms.

⁴ During the time of fieldwork, 2000 CDF was equivalent to 1 USD.

Table 1. Some indicators in DRC.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
GDP per capita (current US\$)	334.02	387.08	424.6	457.96	486.79	497.32	471.32	467.07	565.83	596,56	543.95	584.11
Poverty rate	70	na	63.4	na	na	na	na	na	na	73.1	na	na

na= Data not available.

Source: World Bank (2022), INS (Kibala Kuma, 2020).

labour outside the household is more than twice as prevalent among the poorest 20% of households compared to the richest 20% (Faber et al., 2017).

DRC is among poor countries in the world; in 2019, its GDP per capita was 596,56 USD and its poverty rate was 73,1%, suggesting that 7 out of 10 Congolese are below the poverty line (Table 1). Our fieldwork suggests that poverty interacts with other aspects such as parent behaviour, income inequality and market imperfections in perpetuating child labour in Lualaba (Figure 4).

Parents behaviour and child labour

Parents' and community's socio-cultural conceptions of child work

Parents' views on child labour differed depending on their income levels. Parents who considered themselves to have sufficient income compared to their neighbourhoods were against child labour, one head of household said: "Children should not work in ASM, parents should provide for them. Yesterday evening, my wife told me that my 15-year-old son went to the quarry during the day. I thundered at the child and told him never to go there again. The quarry is bad for children because it corrupts their morals and leads them to be irregular at school."

But less fortunate parents had nuanced views.

One mother said: "I came here with my two daughters, they help me to clean the mineral, and children should help their parents." The idea that the child must contribute to the well-being of the family and that child labour is one such contribution is supported by interviews E2, E10, P1, P8, and is similar to the "child going to farm narrative" (Hilson, 2010, 2012; Kielland and Tovo, 2006). Africa has a long history of child labour in the domestic and agricultural spheres (Bass, 2004) such that child work is not a new phenomenon. The lack of sufficient means to support the family amplifies this socio-cultural tacit acceptance of child labour in Lualaba. Some parent's construct of childhood differs from the Eurocentric conception of work-free childhood but is closer to the socialization argument and to the concept of "other childhoods" theorized by Kesby et al. (2006).

These apprehensions are influenced by the Africa indigenous culture, the place of agriculture, and the role of colonization (Mazrui, 1986). Our materials are consistent with Gnanou's point that in traditional society, socialization focuses on learning duties and roles to conform to the group rather than on individual freedoms and this legitimates child labour (Gnanou, 2017).

Hilson (2010) suggested that children's work in the mine is a transposition of children's work in the fields alongside their parents and this is present in our material as well. A young boy said: "I often go help my dad in the fields, and some

days he doesn't need me there. So, I go to the artisanal mine to collect the minerals." For this kid, working in the field and working in the artisanal mine are alike. Another aspect that emerges from interviews is a desire for intergenerational transmission of skills. For some parents, it is normal for an artisan like a carpenter to pass on skills by training his children, and in a similar way, the adult artisanal digger can do the same. Such a consideration of children's work as an apprenticeship process is consistent with the findings of Kielland and Tovo (2006).

Education

Access to education remains a challenge in DRC. Before September 2019, parents had to pay school fees and other school expenses from primary school onwards. Due to precarious labour conditions, some parents were unable to provide for their kids. Thus, some children went into mining after dropping out from school while others considered ASM as a means to generate extra income for school related expenses. Our material suggests that access to education and child labour participation appear to be both substitutive and complementary.

For migrant families, the pressing issue is not school enrolment; household poverty and workforce requirement in ASM overweigh the parent's need to educate their children. Child work

substitutes for school attendance. Some kids drop out because their parents do not have enough money to take care of them. A 17 year-girl affirmed: “I stopped studying two years ago. My father died and my mother did not have enough money to pay for us, we are eight children. So, I started to collect stones from the cobalt ores up to now.”

Complementarity stems from the fact that children work at the mine in order to access education. In such cases children can go to ASM during holidays to be able to afford school fees and other furniture, and stop mining once the school year begins. A girl said: “I always come here during holidays, because when I am going to school, I don't have time to come here”.

One boy told us: “I was worried as the school year would start soon but at home my mother had not bought any items such as notebooks, pens, or uniforms. So I came here (to ASM) to afford those items”. Another 14-year-old boy affirmed: “Yesterday, I earned 5000 CDF, and today I continue to work. I need 25000 CDF to buy a schoolbag because next month I will go to school.”

These affirmations were supported by an NGO member who said: “Our team went to sensitize parents in a local school to make sure their children will not go to the mines during holidays. Most of these parents answered us that the children must prepare for their return to school by buying supplies such as notebooks and uniforms.”

Child work facilitates access to school highlighting the findings of Okyere (2018: 249) that “children's desire to access education and the challenges they faced with this objective had become a direct causal factor for their entry into work classified by the ILO as worst forms of child labour.”

Sometimes, the child's daily schedule is divided between mining and schooling. A girl affirmed: “I wake up early, around 6 am, I go to wash the ore and return home around 10 am and this leaves me the time to prepare before going to school in the afternoon. But I noticed that I am tired and cannot follow what the teacher is saying.”

The Congolese government has now implemented a free primary education but according to the kids and other respondents, there are still challenges in the law's effectiveness.

Exploitation and the nexus of women's role and child labour

Child labour in ASM, whether taking place within or outside the household sphere, presents itself as a repercussion of the labour precarity of adults. First, in the household sphere the poor parent can rely on the child to help sort, clean, and transport the ore. This is tangible in places like Kamilombe where the observer can see the whole family cleaning and sorting. The child provides the cheapest workforce for his family as also reflected by Meillassoux (1975) who argues that the (capitalist) production system survives thanks to a cheap labour

force drawn from the sphere of reproduction. This is exemplified by the following words of a woman from Kamilombe: “I come here to sort and clean the ore with my 14-year-old daughter so that I can have enough ore to sell.”

Second, child labour can take place outside the household sphere. Children try to earn some extra money in ASM to increase their parents' income. One expert said: “A child can earn up to 5000 CDF a day, and if three of them go to the mine, the mother can receive 15000 Congolese francs at the end of the day.” One parent affirmed: “The child goes during the day to collect minerals and sell them, and in the evening, he gives the money to his mother who goes to buy the ‘mbogha’⁵, so if this child does not go to the quarry how will the mother feed them?”

For one community leader, the exploitation of children means that children accept any price for their minerals because they do not know the value of their time and effort. Additionally, their bargaining power is low as they know that their activities are illegal. Thus, in poor households, children's conditions in situations of exploitation are determined at the intersection between the sphere of production and the sphere of reproduction as described by Meillassoux's concept of domestic community (Meillassoux, 1975).

Concretely the situation of the children in several households is such that poverty and hardship hit the father as household head, then spills over to the whole family with greater intensity. First, a situation occurs in which the father can no longer provide or fails to provide for the household; he may have died (e.g., from war, illness, a landslide in the mines, etc.), or have left the household (e.g., abandoning the family because he found a second wife and could not assume the financial responsibilities of two households), or he may be present yet cannot fully provide. This situation is then transferred to the mother as it deteriorates into food insecurity. To cope, the mother is forced to involve her kids. Over time, one of the children will take the place of the father. We will call him the “pivotal child.” This child receives this label because he is negotiating poverty without considering himself as being in a situation of exploitation at the narrow sense of modern slavery. He is rather constrained by his household's economic situation. Most of the time, he is the first or the second born, in the 15-17 age range and he is obedient to his mother. For this child, going to the mine is the only option to get food at home, and to pay the school fees of his siblings. He is proud of himself, exhibiting an un-childlike behaviour (Kesby et al., 2006) by developing survival mechanisms in challenging circumstances as described by Kendrick and Kakuru's (2012) study on child-headed households.

In a way, the pivotal child compensates for the exclusion of the women, who cannot access all parts of

⁵ The “mbogha” refers to the accompaniment of the fufu. This can be meat, fish or vegetables.

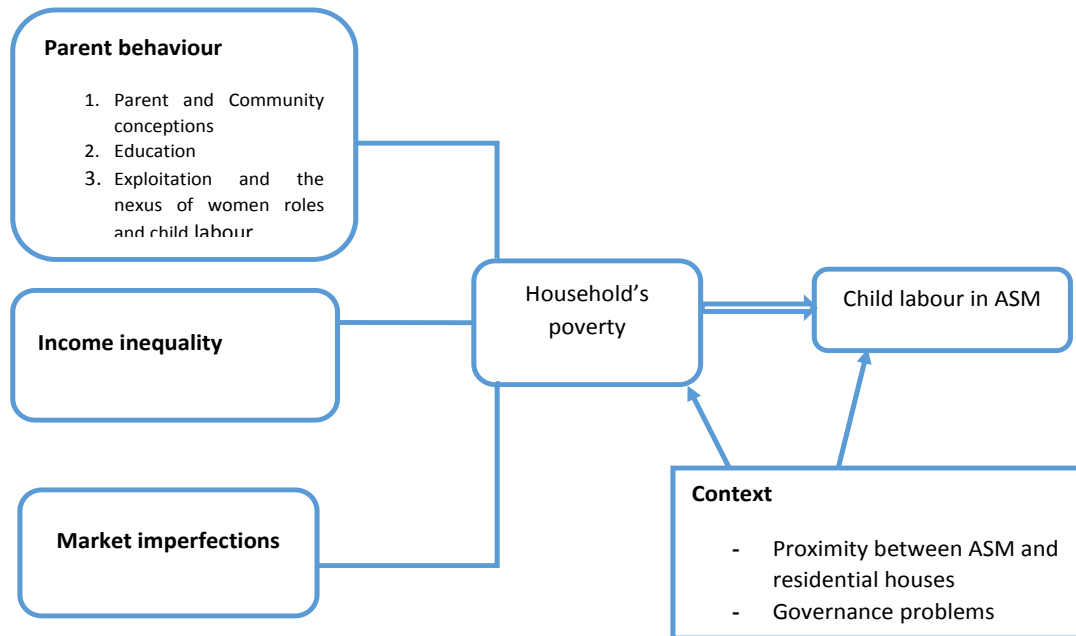


Figure 4. Causes of child labour in Kolwezi cobalt mining.
Source: Conception of the authors.

the mine because of customary rules⁶. This child also fills the gap of an irresponsible father protected by a patriarchal system.

The pivotal child is not perceived as enslaved by his mother, but rather as the one who saves the whole household from an enslavement of hardship and hunger. An NGO member stated that whenever she is sensitizing poor parents to withdraw their children from the mines, they tell her that some children deserve the label of “child Moses” referring to the biblical incident where Moses freed the Israelites from slavery.

Income inequalities along the cobalt supply chain

The cobalt supply chain comprises a range of actors such as artisanal miners, pit masters, traders, and industrial companies. Depending on his position, an actor may benefit more or less from cobalt mining. If the actor does not earn enough, the need to resort to child labour increases. This type of inequality becomes apparent when we discuss with pit owners and négociants (that is, small buyers of ore). One small buyer affirmed: “My kids would never go to artisanal mining because I am working for them. They have sufficient food, and they are going to school.” A widow affirmed: “Kids of formal workers cannot come here, they have sufficient food, and their parents meet all their basic needs, this is not the case for us.

⁶ Customary conceptions refuse to allow women to enter the mineshaft. The idea is that if a woman enters the pit, the minerals will disappear, and appropriate rituals will be needed to make the shaft productive again.

I don't have any qualification; I rely on my children's workforce.” Figure 5 shows the flow chart of the cobalt supply chain.

A community leader said that artisanal miners are the lowest earning actors along the cobalt supply chain and have little bargaining power. Intermediaries can cheat on the price but also on the composition and thus of the quality of the minerals. Some malicious intermediaries manipulate the scale so that the digger thinks he has been offered a good price when in fact the weight was underestimated. Miners do not receive a fair price as stressed by Geenen (2021), they “receive less than half and potentially as low as 6% of the price-by-weight that traders receive for their production” (Faber et al., 2017). This situation exacerbates the precarious labour conditions and weakens children's conditions.

In some cases, miners take out loans from small buyers to start digging and are then forced to sell to the same small buyer with less bargaining power. In contrast to some studies (Bales, 2016; Sovacool, 2021), some miners do not consider themselves as being in a modern slavery situation. For them, the small buyer is actually a friend who was able to provide for their need for cash at a time when there were no other alternatives.

Market imperfections

Price volatility on the international market

The cobalt international price is volatile, tripling between 2016 and 2018, then falling with equal severity (Manley et



Figure 5. Flow chart of the cobalt supply chain. Source Amnesty International (2017).

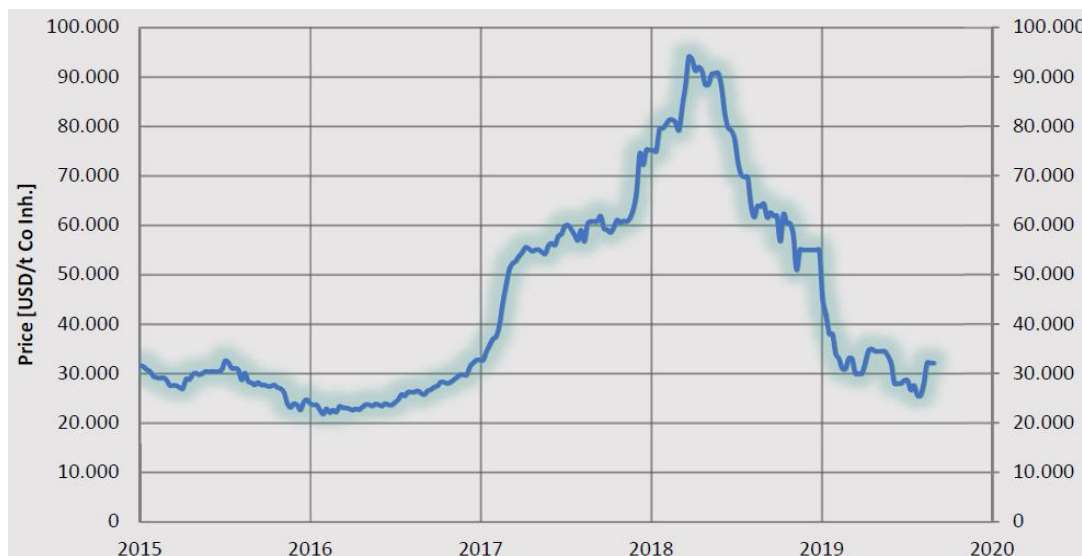


Figure 6. Cobalt price development in US dollars since 2015. Source: BGR (2019).

al., 2022). Adult miners’ incomes fluctuate along with these booms and busts, making them vulnerable. Negative shocks on artisanal income can increase child labour (Faber et al., 2017) due to the household’s need to compensate for the income shortfall.

The luxury axiom suggests that an increase in income is associated with a decrease in the reliance on child labour (Basu and Van, 1998). The results of our material are not univocal. The rise in prices during this cobalt boom resulted in improved earnings for miners according to one cooperative member. But the decline in child labour was not straightforward due to divergent forces. Some parents became more involved in artisanal work with their children as the sector became more attractive. A woman from an NGO affirmed that small buyers, or négociants, worked with more children to amplify their profits, and rising prices attracted migrants who came to Kolwezi with their kids and spent long hours in artisanal sites. These trends are consistent with the study of Van Hear (1982) which found that the development of a capitalist agriculture in Ghana increased the need for labour force and more children were hired as casual

workers. Figure 6 shows the cobalt price development in US dollars since 2015.

Land market

In DRC, there is a conflict on the allocation of land plots among the residential habitations, agriculture, artisanal or industrial mining. According to one international NGO agent, these tensions are amplified by the discovery of new deposits and the unclear land property rights regimes. It is amidst this complex and ill-defined system that child labour has found a place to burgeon.

To begin with, the discovery of new mineral deposits in Lualaba is a recurrent event. Whenever new deposits are found, the inhabitants can be delocalized. Land dispossession weakens the livelihoods (Franciscans International et al., 2022) and in such cases the mining communities can condone child labour to compensate for meagre revenues. But even before delocalization, mining is carried out in an unregulated manner favouring child labour.

The enforcement problem of property rights constitutes another source of market imperfections. According to Congolese mining law, ASM should only take place where the ZEA⁷ (artisanal exploitation areas) are established but these zones are lacking. As a result, ASM sometimes takes place inside or around concessions of industrial companies.

Two cases emerge from this proximity (Nkumba, 2020): Either the company grants permission to the artisanal diggers to work on the site and sell their production to the company (see for example Calvão et al., 2021); or the company prohibits artisanal mining such that miners invade the site (Katz-Lavigne, 2020; Nkumba, 2020; Prause, 2020) and violent conflicts occur (Makori, 2017).

According to the statement of one SAEMAPE agent, child labour is widespread in unofficial areas. For illustration, let us consider artisanal mining site A which is close to an industrial company's concession where the latter has exclusive ownership rights. In this case it is unclear whether child labour can be tackled at this site when even artisanal mining itself is not officially recognized. Here, child labour is one issue within another – that is, within illegal artisanal mining. On the contrary, in official mining sites, an effort is made to remove children from the mines, barriers are constructed at the entrance to site B and children are not allowed inside, said an agent of the SAEMAPE. Though a small number of children enter clandestinely or at night, according to an agent of a local NGO.

Labour market

There are sharp contrasts between the precarious conditions of artisanal miners and the luxurious lifestyle of formal employees of mining companies. One focus group participant said that his children are not as fortunate as those of the rich, the rich drive on the road in jeeps but he and his household struggle to survive from one day to the next. This is in line with Geenen's (2021) argument that artisanal workers are confronted on a daily basis with the extravagant spending of the employees of mining companies making them aware of their misfortune.

A community leader affirmed that ASM involves uncertainty of income and several hazards such as landslides which cause physical injury or death. The death of one parent weakens the familial sphere leaving children in orphan hood which in turn favors pivotal child behaviour. The harsh working conditions coupled with low earnings may lead to situations of exploitation for both adults and children. At local markets, pricing often follows incomprehensible, opaque and unfair procedures (BGR, 2019:iii) undermining income of miners and putting children at risk. On top of all this, there is the fear of losing their job at any moment due to land

dispossessions of a mining company, affirmed the vice president of one mining cooperative. This situation reinforces labour precarity of diggers.

Conclusion

This research draws on nuanced views about the complexities of child work (Gnanou, 2017; Hilson, 2010; Maconachie and Hilson, 2016; Okyere, 2018) to analyse the root causes of child labour in cobalt mining.

The conceptual framework is built on critical modern slavery, socialization, and labour precarity. The critique of modern slavery allows the Eurocentric narrative of work-free childhood to be addressed in order to reveal the apprehensions of some parents and children in Kolwezi. Socialization allows us to understand the detrimental effects of child labour as a used means of coping with poverty. By focusing on labour precarity in mining communities, we gain a better grasp of the deteriorating living standards that can sometimes leave families without a father figure, forcing them to rely on child labour. As emphasized by previous research, child labour in Lualaba is mainly poverty driven. To put it differently, poverty of the household compels it to rely on each of its members to meet basic needs.

Whereas previous studies have underlined that children are exploited; our survey suggest that the narrative of exploitation is not uncontested in the accounts of children and mothers. In a fatherless household, the pivotal child is negotiating poverty by working in the mines and finds himself freeing his mother and siblings from the slavery of hunger and non-access to education.

This paper first aims to contribute a shift in focus from the eradication of child labour per se to a comprehensive analysis of the political, social, and economic constraints that push children into ASM; and second, to highlight the link between child labour and women's role in mining communities. This link deserves further attention as mothers who are poor and abandoned by their spouse are more likely to tolerate or resort to child labour.

The Congolese government is working with other stakeholders to withdraw children from mines. However, based on our data, any project that focuses solely on removing children from mines will either fail or be only partially successful. Emphasis should be on enhancing the benefits that artisanal miners derive from their work so that they can support their families without resorting to child labour. Sensitization activities should continue and a focus on women's role would be beneficial. To improve miners' bargaining power on the market, it would be useful to use mining cooperatives. The mining code (2002, 2018) recognizes the existence of these cooperatives. However, the literature highlights their functional limitations due to their instrumentalization by the most powerful actors (Haan, n. d.).

In the case of the DRC, it is also important to examine the social responsibility of mining companies and to

⁷ Zone d'exploitation artisanale.

improve governance along the cobalt supply chain. It is an all-inclusive approach involving several stakeholders that can produce better outcomes for children.

FUNDING

This work was supported by Deutsche Forschungsgemeinschaft (grant number EXC 2052/1 – 390713894).

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Abebe T (2021). Child labour : A shock absorber for economic precarity. *OpenDemocracy*. <https://www.opendemocracy.net/en/beyond-trafficking-and-slavery/child-labour-a-shock-absorber-for-economic-precarity/>
- Abebe T, Bessell S (2011). Dominant Discourses, Debates and Silences on Child Labour in Africa and Asia. *Third World Quarterly* 32(4):765- 786.
- Al Barazi S, Näher U, Vetter S, Schütte P, Liedtke M, Baier M, Franken G (2017). Le Cobalt De La Rdc – Potentialités, Risques Et Importance Sur Le Marché Mondial Du Cobalt. *Commodity Top News* 53:15.
- Amnesty International (2016). This is What We Die for : Human Rights Abuses in the Democratic Republic of the Congo Power the Global Trade in Cobalt. https://www.amnestyusa.org/files/this_what_we_die_for_-_report.pdf
- Amnesty International (2017). Democratic Republic of Congo : Government must deliver on pledge to end child mining labour by 2025. *Amnesty International*. <https://www.amnesty.org/en/latest/news/2017/09/democratic-republic-of-congo-government-must-deliver-on-pledge-to-end-child-mining-labour-by-2025/>
- Aradau C (2008). *Rethinking Trafficking in Women*. Palgrave Macmillan UK.
- Bales K (2016). *Blood and earth: Modern slavery, ecocide, and the secret to saving the world* (First edition). Spiegel & Grau.
- Banza Lubaba Nkulu C, Casas L, Haufroid V, De Putter T, Saenen ND, Kayembe-Kitenge T, Musa Obadia P, Kyanika Wa Mukoma D, Lunda Ilunga J-M, Nawrot TS, Luboya Numbi O, Smolder E, Nemery B (2018). Sustainability of artisanal mining of cobalt in DR Congo. *Nature Sustainability* 1(9):495-504.
- Barchiesi F, Querrien A (2017). Précarité africaine: Pour une généalogie et une critique. *Multitudes* 69(4):180.
- Bass LE (2004). *Child Labor in Sub-Saharan Africa*. Lynne Rienner Publishers.
- Basu K, Tzannatos Z (2003). The Global Child Labor Problem: What Do We Know and What Can We Do? *The World Bank Economic Review* 17(2):147-173.
- Basu K, Van PH (1998). The Economics of Child Labor. *The American Economic Review* 88(3):412-427.
- Bazilian MD (2018). The mineral foundation of the energy transition. *The Extractive Industries and Society* 5(1):93-97.
- BGR (2019). Mapping of the artisanal copper-cobalt mining sector in the provinces of Haut-Katanga and Lualaba in the Democratic Republic of the Congo.
- Bhalotra S, Heady C (2003). Child Farm Labor: The Wealth Paradox. *The World Bank Economic Review* 17(2):197-227.
- Bourdillon M (2013). Critical Approaches to Children's Work and the Concept of Child Labor. In: M. Bourdillon, *Childhood Studies*. Oxford University Press.
- Bourdillon M (2019). "Child Labour" and Children's Lives. In M. Bourdillon, S. Meichsner, & A. Twum-Danso Imoh (Éds.), *Global Childhoods beyond the North-South Divide* (1st edition 2019). Springer International Publishing: Imprint: Palgrave Macmillan.
- Bourdillon M, Mutambwa G (2014). The place of work in African childhoods. *Codesria, Council for the Development of Social Science Research in Africa*.
- Brace L, Davidson JO (2018). *Revisiting slavery and antislavery. Towards a Critical Analysis*. Springer Berlin Heidelberg.
- Calvão F, McDonald CEA, Bolay M (2021). Cobalt mining and the corporate outsourcing of responsibility in the Democratic Republic of Congo. *The Extractive Industries and Society*.
- Choi-Fitzpatrick A (2017). *What slaveholders think : How contemporary perpetrators rationalize what they do*. Columbia University Press.
- Code minier (2018). *CODE MINIER TELLE QUE MODIFIEE ET COMPLETEE PAR LA LOI N° 18/001 DU 09 MARS 2018*.
- Cooper F (2018). From Enslavement to Precarity? The Labour Question in African History. In: W. Adebaniwi (Éd.), *The Political Economy of Everyday Life in Africa* (1re éd.). Boydell and Brewer Limited pp. 135-156.
- COTECCO (2020). Analyse Pré-situationnelle. « Des Besoins, obstacles et opportunités des acteurs, programmes, Pratiques et cadre réglementaires pour lutter contre le travail des enfants dans les chaînes d'approvisionnement de Cobalt ». OIT.
- De Silva SJ, Strauss T, Morisho N (2019). The Mutoshi Pilot Project. 35.
- Derby CN (2009). *Contemporary slavery: Researching child domestic servitude*. University Press of America.
- Dibwe Dia Mwembu D (2001). *Bana shaba abandonnés par leur père: Structures de l'autorité et histoire sociale de la famille ouvrière au Katanga 1910-1997*. Editions L'Harmattan.
- Emerson P (2009). The Economic View of Child Labor. In Hindman HD (Éd.), *The world of child labor: An historical and regional survey*. M.E. Sharpe.
- Faber B, Krause B, De La Sierra RS (2017). *Artisanal Mining, Livelihoods, and Child Labor in the Cobalt Supply Chain of the Democratic Republic of Congo*. Center for Effective Global Action Policy Report (CEGA) P 61.
- Fors HC (2012). Child labour: A review of recent theory and evidence with policy implications. *Journal of Economic Surveys* 26(4):570-593.
- Franciscans International, Dominicans for Justice and Peace, Centre Carter, Caritas Goma (2022). *L'impact de l'exploitation minière sur les droits des communautés locales en République démocratique du Congo*. https://congominer.org/system/attachments/assets/000/002/224/original/Rapport_conjoint_FI_CESCR_RDC_2022_%281%29.pdf?1642514338
- Free the Slaves (2011). *The Congo report. Slavery in conflict minerals*.
- Gaitán L (2014). Socialization and Childhood in Sociological Theorizing. In Ben-Arieh A, Casas F, Frønes I, Korbin JE (Éds.), *Handbook of Child Well-Being: Theories, Methods and Policies in Global Perspective* (pp. 759- 793). Springer Netherlands.
- Geenen K (2021). *Gnawing Away at the City : Narratives of Domestic Precarity in a Congolese Mining Town*. *African Studies Review* 64(2):412-433.
- Geenen S (2018). *Underground dreams. Uncertainty, risk and anticipation in the gold production network*. Geoforum.
- Gnanou P (2017). *Le travail des enfants en Afrique, de l'éducation à l'exploitation: Regard croisé sur le Burkina Faso et le Mali*. L'Harmattan.
- Grier BC (2006). *Invisible hands: Child labor and the state in colonial Zimbabwe*. Heinemann.
- Haan JD (n. d.). *Coopératives minières au Sud-Kivu: Recours ou extorsion ? Analyses and Policy Brief n°19*. 6.
- Hamenoo ES, Dwomoh EA, Dako-Gyeke M (2018). *Child labour in Ghana: Implications for children's education and health*. *Children and Youth Services Review* 93:248-254.
- Hentschel T, Hruschka F, Priester M (2003). *Artisanal and Small-scale Mining : Challenges and Opportunities*. IIED.
- Hermes Investment Management (2017). *Modern Slavery : The true cost of cobalt mining*. <https://humantraffickingsearch.org/resource/modern-slavery-the-true-cost-of-cobalt-mining/>

- Hilson G (2010). Child Labour in African Artisanal Mining Communities : Experiences from Northern Ghana: Child Labour in Artisanal Mining Communities (Northern Ghana). *Development and Change* 41(3):445-473.
- Hilson G (2011). Artisanal mining, smallholder farming and livelihood diversification in rural sub-saharan africa: an introduction. *Journal of International Development* 23(8):1031-1041.
- Hilson G (2012). Family Hardship and Cultural Values: Child Labor in the road forward. <https://data.unicef.org/resources/child-labour-2020-Malian-Small-Scale-Gold-Mining-Communities>. *World Development* 40(8):1663-1674.
- International Labour Organization (ILO) (2005). Eliminating Child Labour in Mining and Quarrying. (International Programme for the Elimination of Child Labour.).
- International Labour Organization (ILO) (2011). Children in Hazardous Work: What We Know, What We Need to Do. International Labour Office Brookings Institution Press Available from: <http://site.ebrary.com/id/10512167>
- International Labour Organization (ILO) (2022). What is child labour (IPEC). <https://www.ilo.org/ipec/facts/lang--en/index.htm>
- ILO, UNICEF (2021). Child Labour : Global estimates 2020, trends and global-estimates-trends-and-the-road-forward/
- James A, Prout A (1997). Constructing and reconstructing childhood : Contemporary issues in the sociological study of childhood (second).
- Jonah O-T, Abebe T (2019). Tensions and controversies regarding child labor in small-scale gold mining in Ghana. *African Geographical Review* 38(4):361-373.
- Kabemba C, Mukuli GB (2020). Surexploitation et injustice contre les creuseurs artinaux dans la chaine d'approvisionnement du cobalt congolais. Southern Africa Ressource Watch.
- Karikari I (2016). Child labor: A critical discourse analysis Indiana University-Purdue University Indianapolis.
- Katz-Lavigne S (2020). Distributional impact of corporate extraction and (un)authorised clandestine mining at and around large-scale copper- and cobalt-mining sites in DR Congo. *Resources Policy* 65:101584.
- Kendrick M, Kakuru D (2012). Funds of knowledge in child-headed households : A Ugandan case study. *Childhood* 19(3):397-413.
- Kesby M, Gwanzura-Ottmoller F, Chizororo M (2006). Theorising other, 'other childhoods' : Issues emerging from work on HIV in urban and rural Zimbabwe. *Children's Geographies* 4(2):185-202.
- Kibala Kuma J (2020). Pauvreté et chômage en République Démocratique du Congo : État des lieux, analyses et perspectives. Université de Kinshasa Centre de Recherches Economiques et Quantitatives (CREQ).
- Kielland A, Tovo MC (2006). Children at work : Child labor practices in Africa. Lynne Rienner Publishers.
- Krauss A (2016). Understanding child labour beyond the standard economic assumption of monetary poverty. *Cambridge Journal of Economics* 41(2):545-574.
- Kyamwami PK (2013). Travail des enfants dans le site minier d'exploitation artisanale de Bisie en territoire de Walikale. 36.
- Liebel M (2020). Decolonizing Childhoods : From Exclusion to Dignity (1re éd.). Policy Press.
- Maconachie R, Hilson G (2016). Re-Thinking the Child Labor "Problem" in Rural sub-Saharan Africa: The Case of Sierra Leone's Half Shovels. *World Development* 78:136-147.
- Makori T. (2017). Mobilizing the past : Creuseurs, precarity and the colonizing structure in the Congo Copperbelt. *Africa* 87(4):780-805.
- Malu-Malu MD (2021). Cobalt : La RDC cherche la recette gagnante – Jeune Afrique. <https://www.jeuneafrique.com/1169697/economie/cobalt-la-rdc-cherche-la-recette-gagnante/>
- Manley D, Heller PRP, Davis W (2022). Le cobalt : Renforcer la gouvernance est une urgence pour la transition énergétique (p. 55). Berkeley Law, Center for Law, Energy and the environment; Natural Resource Governance Institute.
- Mazrui AA (1986). The Africans: A triple heritage. BBC Publisher.
- Meillassoux C (1975). Femmes, greniers et capitaux. F. Maspero.
- Mende J (2019). The Concept of Modern Slavery : Definition, Critique, and the Human Rights Frame. *Human Rights Review* 20(2):229-248.
- Mines.cd (2022). RDC: Les prix du cuivre, du cobalt, du zinc et d'argent en hausse sur le marché international. <https://mines.cd/rdc-les-prix-du-cuivre-du-cobalt-du-zinc-et-dargent-en-hausse-sur-le-marche-international/>
- Morrow V, Boyden J (2010). Social values and child labour. In Fassa AG, Parker DL, & Scanlon TJ (Éds.), *Child Labour: A Public Health Perspective* (pp. 69- 78). Oxford University Press.
- Mthembu-Salter G (2009). Natural Resource Governance, Boom and Bust : The Case of Kolwezi in the DRC.
- Mwami JA, Sanga AJ, Nyoni J (2002). Tanzania : Child labour in mining : a rapid assessment. ILO.
- Myers WE (2001). The Right Rights? Child Labor in a Globalizing World. *The ANNALS of the American Academy of Political and Social Science* 575(1):38-55.
- Nkumba EU (2020). How to Reduce Conflicts Between Mining Companies and Artisanal Miners in the Province of Lualaba : Overcoming the Policy and Systemic Barriers to a Model that Respects Human Rights. *Business and Human Rights Journal* 5(2):296-302.
- O'Connell Davidson J (2010). New slavery, old binaries : Human trafficking and the borders of 'freedom'. *Global Networks* 10(2):244-261.
- Okyere S (2013). Are working children's rights and child labour abolition complementary or opposing realms? *International Social Work* 56(1):80-91.
- Okyere S (2018). Moral Economies and Child Labour in Artisanal Gold Mining in Ghana | SpringerLink. In *Revisiting Slavery and Antislavery: Towards a Critical Analysis*. Springer International Publishing. https://link.springer.com/chapter/10.1007/978-3-319-90623-2_9
- Owusu SA, Afrifa RD, Obeng FA (2021). Effect of illegal small-scale mining on basic education of children in rural communities in Ghana : Perspectives for future development. *African Geographical Review*, pp. 1-14.
- Potter C, Lupilya AC (2016). 'You have hands, make use of them!' Child labour in Artisanal and Small-scale Mining in Tanzania : 'You Have Hands, Make use of Them!'. *Journal of International Development* 28(7):1013-1028.
- Prause L (2020). Conflicts related to resources : The case of cobalt mining in the Democratic Republic of Congo. In *The Material Basis of Energy Transitions Elsevier* pp. 153- 167.
- Robson E (2004). Hidden Child Workers : Young Carers in Zimbabwe. *Antipode* 36(2):227-248.
- Rothenberg D, Radley B (2014). The Lived Experience of Human Rights and Labor Violations in Select Artisanal Mining Sites in North and South Kivu.
- Rubbers B (2010). Claiming workers' rights in the Democratic Republic of Congo : The case of the Collectif des ex-agents de la Gécamines. *Review of African Political Economy* 37(125):329-344.
- Rubbers B (2015). When Women Support the Patriarchal Family : The Dynamics of Marriage in a Gécamines Mining Camp (Katanga Province, DR Congo). *Journal of Historical Sociology* 28(2):213-234.
- Rubbers B (2017). Towards a life of poverty and uncertainty? The livelihood strategies of Gécamines workers after retrenchment in the DRC. *Review of African Political Economy* 44(152):189-203.
- Simic A, Blitz BK (2019). The modern slavery regime : A critical evaluation. *Journal of the British Academy* 7(s1):1-34.
- Sovacoal BK (2021). When subterranean slavery supports sustainability transitions? Power, patriarchy, and child labor in artisanal Congolese cobalt mining. *The Extractive Industries and Society* 8(1):271-293.
- Statista (2022). Cobalt industry worldwide. Statista. <https://www.statista.com>
- Togunde D, Carter A (2006). Socioeconomic causes of child labor in urban Nigeria. *Journal of Children and Poverty* 12(1):73-89.
- Tsurukawa N, Prakash S, Manhart A (2011). Social impacts of artisanal cobalt mining in Katanga, Democratic Republic of Congo. Öko-Institut e.V.
- UNICEF (2014). Factsheet : Enfants dans les mines.
- U.S. Geological Survey (2022). Mineral Commodity Summaries 2022 (p. 206).
- Van Hear N (1982). Child Labour and the Development of Capitalist Agriculture in Ghana. *Development and Change* 13(4):499-514.
- White B (2009). Social sciences views on working children. In: H. D. Hindman (Éd.), *The world of child labor : An historical and regional survey*.

World Bank (2022). GDP per capita (current US\$)—Congo, Dem. Rep.
<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=CD>

World Vision (2013). Child Miners Speak. Key Findings on Children and Artisanal Mining in Kambove DRC.