

Overview of child labour in the artisanal and small-scale mining sector in Asia and Africa

Dylan O'Driscoll
University of Manchester
04 October 2017

Question

What data is available regarding the numbers of children involved? What are the supply chains? What data is available regarding the type of child labour involved in mining? What are the positive and negative implications of child labour?

Contents

1. Overview
2. Data on numbers of children involved
3. Supply chains
4. Type of labour
5. Positive and negative implications of child labour
6. Donor/Agency Mapping
7. References

The K4D helpdesk service provides brief summaries of current research, evidence, and lessons learned. Helpdesk reports are not rigorous or systematic reviews; they are intended to provide an introduction to the most important evidence related to a research question. They draw on a rapid desk-based review of published literature and consultation with subject specialists.

Helpdesk reports are commissioned by the UK Department for International Development and other Government departments, but the views and opinions expressed do not necessarily reflect those of DFID, the UK Government, K4D or any other contributing organisation. For further information, please contact helpdesk@k4d.info.

1. Overview

This rapid review synthesises data from academic, policy, and NGO sources on child labour in the artisanal and small-scale mining (ASM) sector in Asia and Africa. ASM refers to small groups engaged in low-cost, low-tech, labour-intensive excavation and processing of minerals. Therefore, a clear distinction can be made between industrial and large-scale (usually licensed) mining on the one hand, and artisanal and small-scale (often unlicensed) mining on the other. Small-scale mining also includes all lower segments of mining (both non-mechanised and mechanised) that are not conventional industrial mining operations (Schipper, de Haan, & van Dorp, 2015).

It is difficult to make estimates on the number of children working in mines due to a lack of clear data on the topic and the lack of uniformed definitions on what constitutes child labour. Moreover, ASM is by definition informal and often illegal, thus practitioners operate in secret making research difficult. However, the International Labour Organisation (ILO) estimates that there are more than one million children working in ASM, with the number increasing with the de-agrarianisation of large areas in Africa and Asia.¹

The data on supply chains in ASM is limited and it is difficult to credibly assess when minerals involving child labour make it into Europe. Due to the informal and often illegal nature of ASM they have a longer, more complicated, supply chain where responsibility and traceability is lost along the way. However, there are a range of organisations – such as Fairtrade, Fairmined, OECD, and the Responsible Jewellery Council – that offer certification that guarantees that the entire supply chain is audited and free of elements such as child labour.

Children engage in a range of tasks in ASM, however not all of them are considered dangerous and often mirror the tasks they would undertake in agriculture. This is where there is a debate between agencies such as ILO and the UN, who consider all forms of child labour in mining the worst form, and academics, who argue the case is more complex. Moreover, ILO and the UN argue that child labour in mining prevents children from going to school, when many academics argue it often enables them to afford school. Academics tend to examine the cultural and societal elements of children working more generally within the context, whereas these larger agencies use a broader Western concept of childhood when examining child labour in mining, which can have implications for policy.

2. Data on numbers of children involved

According to ILO, child labour refers to a subset of children's work that is injurious, negative or undesirable to children and should be targeted for elimination (ILO-IPEC, 2013: 17). Three international conventions – UN Convention on the Rights of the Child (CRC),² ILO Convention No. 182 (Worst Forms)³ and ILO Convention No. 138 (Minimum Age)⁴ – provide the main legal standards. Therefore, according to ILO child labour comprises of:

¹ <http://www.ilo.org/ipec/areas/Miningandquarrying/lang--en/index.htm>

² <https://www.unicef.org.uk/what-we-do/un-convention-child-rights/>

³ http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C182

⁴ http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C138.

- (i) all children between 5-11 years of age who are economically active,
- (ii) children between 12-14 years of age who work in an economic activity for 14 or more hours per week, and
- (iii) children between 12-17 years of age who work in an economic activity that is classified as belonging to the worst forms of child labour (ILO-IPEC 2013: 45-47.)

Due to no uniform legal definition of child labour there is an issue with data collection and cross-country comparison (Donger, 2016). Inconsistency in how practitioners define child labour and the worst forms of child labour permeate the literature (Global Protection Cluster, 2014). Furthermore, ILO Conventions No. 138 and No. 182 state that the specific types of employment or work constituting hazardous work are determined by national laws or regulations or by the competent authority. According to ILO (2015: 42), from a legal standpoint there is no standard international list of hazardous jobs and occupations. Rather a series of unique national lists are utilised with what constitutes hazardous work differing from one country to the next. Following from this, there can be no standard statistical measure of hazardous work that is valid across all countries. However, it is widely accepted by donors and agencies that child labour in mining is considered a worst form of child labour, although there is some academic debate (See: André & Godin, 2013; Hilson, 2009; Hilson, 2010; Maconachie & Hilson, 2016) that contests this notion.

ILO defines the worst forms of child labour as follows (Article 3 of ILO No. 182):

- A. all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict;
- B. the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances;
- C. the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties;
- D. work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children

Hazardous work represents the largest category of the worst forms of child labour. These forms of child labour are considered to be the most harmful and has or leads to adverse effects on the child's safety, health (physical or mental) and moral development (ILO, 2002). Paragraph 3 of the ILO's Worst Forms of Child Labour Recommendations of 1999 (no. 190) identifies the types of work referred to under Article 3(d):

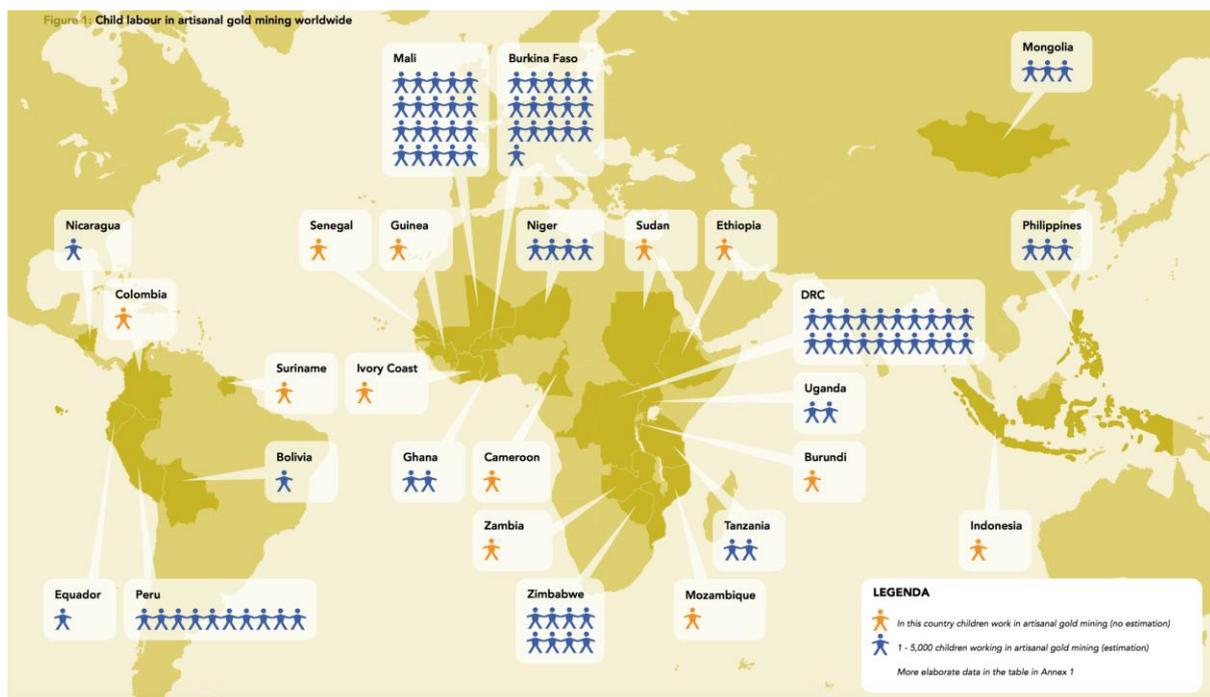
- A. work which exposes children to physical, psychological or sexual abuse;
- B. work underground, under water, at dangerous heights or in confined spaces;
- C. work with dangerous machinery, equipment and tools, or which involves the manual handling or transport of heavy loads;
- D. work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels, or vibrations damaging to their health;
- E. work under particularly difficult conditions such as work for long hours or during the night or work where the child is unreasonably confined to the premises of the employer.

Thus mining falls under section D of Article 3 making it a worst form of child labour according to ILO.

Estimates, from 2008-2012 put the number of child labourers worldwide at 168 million, with 85 million engaged in hazardous work (IPEC, 2013). Hazardous work accounts for 51 % of child labour among 5-17 year-olds and 31 % of child labour among 5-14 year-olds (IPEC, 2013: 20). Sub-Saharan Africa has the highest incidence of child labour (one in five children) with an estimated 59 million children engaged in child labour and nearly 29 million of these in hazardous work (US DoL, 2014: xxxvi). In Asia and the Pacific, 77.8 million children aged 5-17 are engaged in child labour (9.3 % of children) (US DoL, 2016: 30).

It is difficult to make estimates on the number of children working in ASM due to a lack of clear data on the topic. ASM is by definition informal and often illegal, thus practitioners operate in secret making research difficult (Schipper et al., 2015) ILO estimated in 2006 that about one million children work in mines with the number ever increasing.⁵ However, the actual number is likely higher, as ASM has been growing steadily since the time of this estimation (Schipper et al., 2015) as de-agrarianisation has led to farmers taking up non-farm activities such as ASM (Hilson, 2009). Figure 1 below is one of the only compilations of global figures on child labour in mining, however it remains limited as multiple countries missing.

Figure 1: Child labour in artisanal mining worldwide



Source: (Schipper et al., 2015: 24)

⁵ <http://www.ilo.org/ipec/areas/Miningandquarrying/lang--en/index.htm>

Tanzania

An ILO report on child labour in Tanzania (Africa's fourth-largest gold producer), using survey data from 2014, states that there are 30,827 children (5-17 years old) involved in ASM in the country – 13,493 boys and 17,334 girls (ILO, 2016: xviii). They work an average of 20 hours a week, with 14-17 year olds working an average of 28 hours a week, whilst 5-11 year olds worked an average of 12 (ILO, 2016: 53). The case of Tanzania gives a clear example of the small percentage of child labour that mining constitutes, with 0.7 % of children involved in child labour in the country working in ASM (ILO, 2016: 69). However, despite this low percentage, mining accounts for 18.7 % of the cases of children in hazardous work, working under exposure to health hazards (ILO, 2016: 109) and 21.3 % of incidents in child labour (ILO, 2016: 110).

The Tanzanian government has adopted laws on child labour in hazardous work and conducts child labour inspections on licensed, small-scale mines. However, these initiatives are under funded, not prioritised, and do not address unlicensed gold ASM. Additionally, even though the National Education Act and the 2002-2006 Education Development Plan have secured children's rights to a free and compulsory primary education, children still pay a range of illegal contributions and have many other school-related expenses. These costs can cause children to seek additional income from the mines and can contribute to their dropping out of school (Human Rights Watch, 2013).

India

According to ten Kate, Schipper, Kiezebrink, and Remmers (2015: 31) there are 20,000 children involved in mining mica⁶ in India, an increase of 2,000 children since the first estimate in 2005. The main mica mining area is in Jharkhand/Bihar, two of the poorer Indian states, and almost all of it is illegal. Due to the hazardous nature of the work, the Indian Child Labour (Prohibition and Regulation) Act of 1986 prohibits children under fourteen from working in underground mines, to cut/split mica, and work on processes involving exposure to free silica, thus including mica mines. However, the illegality of these mines result in very little monitoring of practices.

Indonesia

Indonesia is the second largest producer of tin after China. Babel province is the largest producing region of the country, accounting for 88 % of the total production and 88.4 % of the total export in 2013. According to ILO (2015b), who conducted research in Babel, the estimated number of child labourers aged 5-17 in informal tin mining in the province is about 6,300, the majority (69 %) being aged 15-17. This amount is equivalent to 5 % of total children aged 5-17 and to 13 % of the total children in employment. ILO also indicates that child labour in tin mining is dominated by boys, as girls only amount to 7 % of the total. Almost all child labour employed in tin mining work in informal tin mining operated by individual households, rather than for companies. The median working hours for children aged 15-17 are 42 hours/week in informal tin mining. In Indonesia the school participation rate for children aged 5-17 is almost 80%, but less than 40% if the children are in employment (ILO, 2015b: 61).

⁶ Mica is a mineral used to provide a sparkling effect in paint and makeup.

Uganda

In an ILO report on child labour in Uganda very little information is given on ASM, however the report does indicate that 4.6 % of children involved in hazardous work are involved in mining and that there are 257,000 children in hazardous work (ILO, 2013: 60). This puts the number at 11,822, whilst Schipper et al. (2015: 98) estimate that there are roughly 12,000 children involved in ASM in Uganda.⁷

Democratic Republic of Congo (DRC)

More than 50 % of the world's cobalt⁸ comes from the DRC and 20 % of DRC's cobalt comes from ASM. Children are often employed to work above ground, sifting through leftover rubble and rock, searching for bits of ore which they then sort and wash (Amnesty International, 2016). In 2012 UNICEF estimated that there were 40,000 children working in ASM in the region of southern Katanga alone, which is about one third of the total number of workers.⁹ According to Schipper et al. (2015: 98) as many as 40 % of workers in ASM in the DRC are children, which is about 200,000 child miners. In gold mining children constitute 30-35 % of the total labour force in the industry.

Burkina Faso

Since 2003 gold has become Burkina Faso's main export and ASM sites are to be found throughout the country and are said to be employing children as young as 6 years old. The 2008 Labour Code of Burkina Faso sets the minimum age for work at 16, and the minimum age for hazardous work at 18. According to KidsRights (2014) almost 40 % of children aged 5 to 17 are estimated to be part of the labour force and UNICEF estimated in March 2012 that approximately 20,000 children in Burkina Faso's 13 regions were working in small-scale gold mines. Whilst Schipper et al. (2015) estimate that 30-50 % of the work force, or 60,000-100,000 children are involved in artisanal and small scale mining in Burkina Faso. In 2012, INTERPOL led a operation to rescue child labourers and in this operation 387 children were found working in mines under extreme conditions (KidsRights, 2014).

Ghana

Human Rights Watch (2015) estimates that the government figure of 7,428 children working in mining in Ghana is too low, but does not provide an estimate of their own. A survey by the ILO of 400 child miners found that most child miners (61 %) were between the ages of 15 and 17, 33 % of miners were between the ages of 10 and 14, and nearly 6 % of children were between 5 and 9 years old. Human Rights Watch found that in Ghana children living with relatives or guardians were more likely to work in mining than children living with their parents (Human Rights Watch, 2015).

⁷ They have likely rounded up the figure provided by ILO, as their report does not involve fieldwork.

⁸ Cobalt is used to build lithium-ion batteries found in mobile technology

⁹ https://www.unicef.org/childsurvival/drcongo_62627.html

Philippines

Small-scale gold mining occurs in more than 30 provinces of the Philippines, however there are no reliable figures on the production of gold from ASM because an estimated 90 % of the gold is smuggled out of the country. It has been estimated that 70-80% of gold in the Philippines originates from small-scale gold mining. Under Philippine law, the minimum age for work is 15, and hazardous work is prohibited for anyone under the age of 18. According to ILO in 2009 Over 18,000 children were engaged in ASM in the Philippines.¹⁰

Mali

It is estimated that 20 % of the labourers working in mines in Mali are children. Based on government statistics of 100,000 to 200,000 artisanal gold miners in Mali, Human Rights Watch (2011: 1) calculated the number of children involved in artisanal gold mining at between 20,000 and 40,000. However, based on a more recent estimate of 1,000,000 total labourers by the Chamber of Mines of Mali, the estimated number of children working in artisanal gold mining could be as high as 200,000 (Schipper et al., 2015: 98).

Niger

There is very limited data on child mining in Niger, however, Schipper et al. (2015:98) estimate that there are as many as 22,000 children working in mines in Niger.

Nepal

There is very limited data on child mining in Nepal, however, ILO (2005:2) estimate that there were 32,000 children working in stone quarries in 2005.

3. Supply chains

The data on supply chains in ASM is limited and it is difficult to credibly assess when minerals involving child labour make it into Europe. Due to the informal and often illegal nature of ASM they have a longer, more complicated, supply chain where responsibility and traceability is lost along the way. For instance, according to Human Rights Watch (2013) brokers and dealers in Tanzania buy from unlicensed mines, despite it being against the law and some of them even work without a license themselves. Whilst it makes its way up the supply chain its origin is lost and thus it is no longer possible to identify if child labour is involved. According to officials in Tanzania, gold is exported to the United Arab Emirates (UAE), Switzerland, South Africa, China, and the United Kingdom – with Dubai being the main buyer (Human Rights Watch, 2013).

In DRC, cobalt is sold by adult miners directly to licensed buying houses, whereas children sell their minerals to adult miners or small scale traders who then sell to licensed buying houses. The licensed trading houses then sell to a number of larger companies, which operate smelters and export the processed ore, thus once again the traceability and responsibility to ensure child labour was not involved is lost along the way. According to Amnesty International (2016: 46-48) the largest of these companies is Congo Dongfang Mining International SARL (CDM), which is a

¹⁰ http://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS_107949/lang--en/index.htm

subsidiary of China-based Zhejiang Huayou Cobalt Company Ltd (Huayou Cobalt), one of the world's largest manufacturers of cobalt products. Amnesty International goes on to argue that Huayou Cobalt sells to battery component manufacturers in China and South Korea, who sell to battery manufacturers, which then sell on to well-known consumer brands (Amnesty International, 2016: 46-48).

According to Schipper et al. (2015) there are several cases where gold from artisanal mines in Africa where child labour is documented has ended up at the leading gold refineries in Switzerland. They argue that large refineries accept gold without taking sufficient due diligence measures. Gold from these refineries is included in the supply chain of many electronics companies, thus making its way to the average consumer.

In Jharkhand/Bihar in India almost all mica mining is illegal, yet there are considerable exports from the region. Figure 2 below demonstrates the main importers of mica from the region in the first half of 2015, whilst Figure 3 demonstrates the exporters. Companies such as Merck run schools and a local health centre in the mica mining area and claim to have eliminated child labour in the mining and processing of its mica, but the illegality of the mines makes it difficult to regulate (ten Kate et al., 2015).

Figure 2: Mica importers from Jharkhand/Bihar

IMPORTER FROM JHARKHAND/ BIHAR	COUNTRY OF REGISTRATION	EXPORT VALUE (INR MILLION)	TONNAGES	MAIN USE OF MICA
Kuncai	China	201	6,200	pearlescent pigments
Merck	Germany	167	5,200	pearlescent pigments
Ruicheng	China	87	2,800	pearlescent pigments
Chesir	China	80	2,600	pearlescent pigments
Rika	China	62	1,800	pearlescent pigments
Silimica/Pamica	China	48	1,400	mica tape
Yamaguchi Mica	Japan	45	1,300	mica powder
Nihon Shoji	Japan	35	1,000	mica flakes and powder ⁶¹
Oxen	China	31	1,000	pearlescent pigments
ZhenFa	China	31	1,400	pearlescent pigments
Shanghai Foreign Trade Enterprises	China	25	7	trader, mainly mica blocks
National Factory	Saudi Arabia	23	3,300	most likely drilling fluids ⁶²
Volor	China	20	700	pearlescent pigments
Mahlwerk Neubauer Friedrich Geffers	Germany	20	1,000	mica as a filler & for the rubber industry
Dean & Tranter	UK	15	1,400	Trader, mica powder
Elfin Group	Luxembourg	15	400	electrical insulation and related products
Okabe	Japan	15	400	electrical insulation and related products
Others		651	26,893	
Total		1,571	58,800	

Source: (ten Kate et al., 2015: 27)

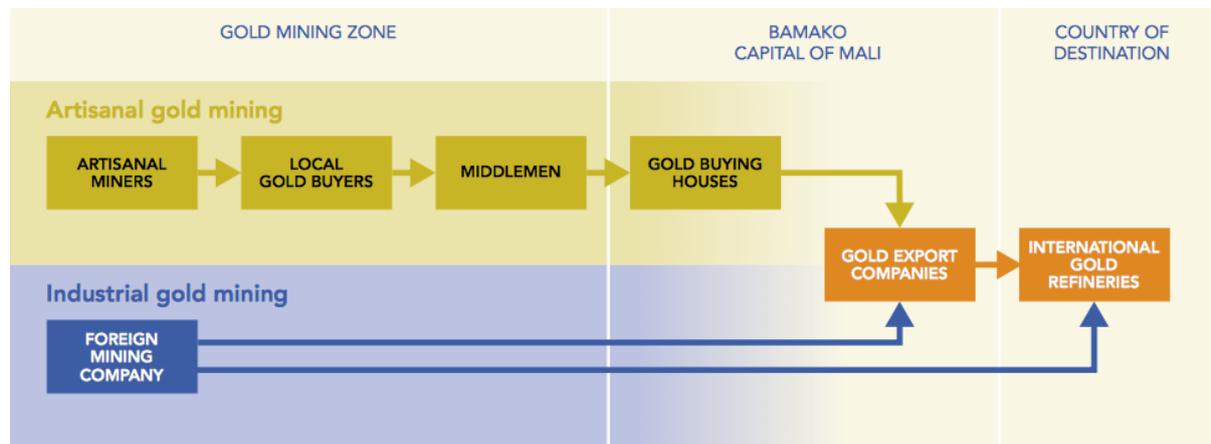
Figure 3: Exporters of mica

EXPORTER IN INDIA	TOTAL EXPORT VALUE (INR MILLION)	SALES TO MAIN CUSTOMERS (INR MILLION)				
		KUNCAI	MERCK	RUICHENG	CHESIR	OTHER
Gunpatroy	197	14			22	161
Mount Hill's	195	102			20	73
Jai Mica	130			33		97
Pravin	117	31			10	76
Modi Mica	95		23	50		22
Vedant	93	8			25	60
Pachisia	67		57			10
Mohan Mica	36	31				5
Kritika Enterprises	40	4				36
Ramdew Modi	39		38			1
Alpha International	37					37
Ratan Mica	36					36
Kedarnath Ramgopal & Sons	33					33
Daruka	26					26
Mohan International	26		26			0
Manoj Kumar Bhadani	23		23			0
Pearlescent Minchem (India)	22	8				14
Other	359	3	0	4	3	349
Total	1,571	201	167	87	80	1,036

Source: (ten Kate et al., 2015: 28)

These are just a few case studies that demonstrate how easy it is for minerals that involve child labour to become part of the legitimate supply chain. This involves an often unregulated supply chain at a local level, but also the lack of due diligence by international companies. Figure 4 below demonstrates the longer supply chain of gold from ASM in Mali and gives an understanding of how responsibility and traceability is lost along the supply chain.

Figure 4: Gold supply chain in Mali



Source: (Schipper et al., 2015 45)

4. Type of labour

The types of labour children carry out in ASM depends on the mineral being mined and the geography of the region, although there are many common acts of labour across mining sectors. The section below discusses the types of labour children carry out in different sectors in different countries.

Gold mining Tanzania

- **Digging Pits:** The first phase of gold ASM is to manually dig pits ranging from a few meters to up to 70 meters deep. According to Human Rights Watch (2013) children were observed digging in pits with shovels, hammers, and picks, and some said they used drills.
- **Working Underground:** Children also told Human Rights Watch (2013) that they worked underground in pits collecting ore, using a range of dangerous techniques to climb down the pits, including climbing down the pits by either holding onto the sides of the pit or onto a rope. Working underground in unstable pits is one of the most hazardous aspects of mining and because of their size children are often used.
- **Carrying and Crushing Ore:** Rocks are carried from the pits to the processing area where they or other workers crush the ore into powder. According to Human Rights Watch (2013) on artisanal mines this labour is commonly undertaken by children and sacks can weigh as much as 60 kilograms.
- **Mixing and Burning Mercury:** To separate gold from the crushed dirt, miners (often children) use mercury to retrieve the gold. Using roughly half a tablespoon of mercury for a pan of water and ground ore, miners mix water, ore, and mercury with their bare hands until the mercury has attracted the gold particles, which they then burn to evaporate the mercury and recover the gold putting themselves at the risk of mercury poisoning (Human Rights Watch, 2013).

Tin mining Indonesia

- **Production Unit:** Children between 15-17 can usually be found in the production unit, which involves separating tin material from other unwanted materials. In holes 7-10 meters deep high-pressured water is used adding to the danger of collapse. Miners dig in the hole whilst water is hosed in.
- **Panning:** Younger children are usually active in panning, which involves collecting tin sand and using a pan to separate the sand from residual materials (ILO, 2015b: 45).

Gold mining Philippines

- **Mining in Underground Pits:** Children work digging in dry underground pits that are up to 25 meters deep. They are lowered into the pit with a rope and if the pits are deep oxygen is pumped in with a blower.
- **Carrying Heavy Loads:** Child labourers carry heavy loads, both under and above ground carrying debris and transporting sacks of ore.
- **Processing Gold with Mercury:** As with Tanzania, gold in artisanal mines in Philippines is processed with Mercury and this job is often carried out by children.
- **Panning in Water:** As much gold is found underwater in the Philippines, children stand in water continuously panning for gold.
- **Diving:** In the Philippines a practice known as compressor mining has developed in coastal areas along the shore, in rivers, and in swampy areas. Diving underwater for several hours miners receive air from a tube attached to a diesel-run air compressor at the surface. This extremely dangerous and is normally carried out by adult men, but sometimes also boys (Human Rights Watch, 2015)

The Organisation for Economic Co-operation and Development (OECD) has developed a list of the various jobs carried out by children in mines and the risks associated, which is seen below.

Figure 5: Children working in mines

Tasks	Hazards	Injuries and potential health consequences
Tunnelling, diving into muddy wells	Drilling equipment; explosives; confined spaces; faulty supports; stagnant air; poisonous gases; dust; darkness; dampness; radiation	Death or traumatic injury from tunnel collapse; suffocation from compressor mining; injury from explosions; silicosis and related respiratory diseases; nausea; exhaustion
Digging or hand-picking ore, slabs, rock or sand	Heavy tools; heavy loads; repetitive movements; dangerous heights; open holes; falling objects; moving vehicles; noise; dust	Joint and bone deformities; blistered hands and feet; lacerations; back injury; muscle injury; head trauma; noise-induced hearing loss; breathing difficulties; frostbite, sunstroke and other thermal stresses; dehydration; blunt force trauma, loss of digits, limbs; eye injuries and infections from shards, dust
Crushing and amalgamating; sieving, washing and sorting	Lead, mercury and other heavy metals; dust; repetitive movements; bending; squatting or kneeling	Neurological damage; genito-urinary disorders; musculoskeletal disorders; fatigue; immune deficiency
Removing waste or water from mines	Heavy loads; repetitive movements; chemical and biological hazards; dust	Musculoskeletal disorders; fatigue; infections; skin irritation and damage; respiratory issues from exposure to chemicals and dust
Transporting materials via carts or carrying	Heavy loads; large and unwieldy vehicles	Musculoskeletal disorders; fatigue; crushed by vehicles
Cooking and cleaning for adults	Physical and verbal abuse; unsafe stoves; explosive fuels	Injury from beatings; sexual abuse; burns
Selling goods and services to miners	Physical and verbal abuse	Injury from beatings; behavioural disorders, sexual abuse or harassment
Mining and quarrying in general	Remote locations; lawless atmosphere; poor sanitation; lack of protective gear; contaminated drinking water; stagnant water and mosquitoes; inadequate nutrition; degraded environmental conditions in air, water, soil, food; recruitment into sex trade; human trafficking and forced labour; gambling, drugs and alcohol	Death for lack of medical treatment; behavioural disorders; addiction; sexually transmitted diseases; pregnancy; stunted growth; diarrhoea and digestive disorders; malaria and mosquito-borne diseases

Source: (OECD, 2017: 12)

5. Positive and negative implications of child labour

Negative implications

Child labour in mining can often, but not always, include extremely hazardous duties that endanger the children's lives and long-term health. The use of mercury to extract gold is one such duty that is often carried out by children and that has a negative impact on health. Burning the gold-mercury amalgam releases dangerous mercury vapour, which can give those in the vicinity mercury poisoning and can result in brain damage. People who live in mining areas may also be exposed to mercury when community or family members process the gold at home, or from eating mercury-contaminated fish from nearby rivers. Therefore, children do not need to be involved in the burning of the mercury for it to impact on their health. Moreover, digging in unstable pits is also dangerous as they often collapse and there is minimal rescue equipment available (Human Rights Watch, 2013). In cobalt mines dust can cause hard metal lung disease and skin contact can cause dermatitis, yet miners have neither masks nor gloves to protect them (Amnesty International, 2016).

The mining environment itself is also often dangerous for children, as there are instances of sexual harassment and pressure to engage in sex work. Additionally, there are often high levels of HIV and other sexually transmitted diseases in mining communities (Human Rights Watch, 2013). Mining sites also often lack sanitation, health services, regular access to clean water, and schools, if accessible at all, are often far away. Malnutrition is common among child miners, along with diseases such as dysentery, diarrhoea, malaria, meningitis, measles, tuberculosis and other parasitic and viral infections (KidsRights, 2014). Children also often work long days (up to 12 hours) and carry out duties such as heavy lifting that are not suitable for them (Amnesty International, 2016). There is also the argument that child labour in mining denies children education opportunities and that children are working instead of attending school (ILO, 2005). Although this is often the case, the situation is often far more complex, as discussed in the next section.

Positive implications

One of the key issues with child labour in mining is the ambiguity surrounding what constitutes exploitative work. According to Hilson (2010) policy makers, donors and NGOs tend to view child labour in mining as the worst form of child labour, ignoring the regional dynamics. Many of the jobs carried out by children are normally menial and similar to those found in agriculture, where they would not be considered as a worst form of child labour. Poverty is a principal cause of child labour, as child labour adds to household income to help reach the financial requirements of the family. However, rather than being viewed as preventing children from going to school, as ILO and UN agencies often do, Hilson (2010) argues that the situation is far more complex and that labour in mining often facilitates children's education and policy should not ignore this dynamic.

According to André and Godin (2013) in agricultural societies systems of relations shape children's work and ASM follows this pre-existing social order. The mining-related activities are similar to those performed in agricultural societies. Whilst mining is considered a worst form of child labour, it is often used for survival, to gain rights, or to pursue education. Traditionally, in self-subsistence societies, children are part of the social group and share the duty of labour for the group. There is a relative continuum between the social order inside and outside the mine, with children's duties often mirroring each other; therefore questioning why in mining these

duties, such as gathering and washing rocks, are considered a worst form of child labour. André and Godin (2013) see a correlation between how middle class families in the developing world and NGOs view family life, with the man being the main income earner for the family, which is simply not possible for lower class families. Mining provides supplementary earnings to farming, as farmers have to diversify due to the liberalised market if they want to continue with their smallholder farming activities. The fact that numerous children in sub-Saharan Africa are engaged in activities similar to those carried out on smallholder farms suggests that child labour in this context has cultural dimensions (Hilson, 2009).

Using the example of Sierra Leone, Maconachie and Hilson (2016) argue that child labour in mining plays an important role in alleviating household poverty and enhancing opportunities, including the development of farms and family businesses. Children also use mining as a way to afford to go to school, which is never actually free in these areas and always costs the family something (Human Rights Watch, 2015).¹¹ They go on to argue that mining is a space for socialisation and allows for the development of meaningful skills. Moreover, the Western conceptualisation of childhood is not possible in most African settings. Therefore, more holistic policy mechanisms are needed which adequately reflect the day-to-day realities of life in impoverished rural settings. Children cannot be taken out of mining if the income loss of the family is not replaced. It is also possible for children to attend school and work, thus their working conditions, and balance of duties should also be examined, rather than merely trying to take them out of labour. An acceptance of international codes and agreements on child labour without understanding the local complexities can have an adverse impact on children and the wider community (Maconachie & Hilson, 2016).

6. Actor Mapping

World Bank

The World Bank does not actively target child labour, but instead helps in the process of formalising the industry. This is due to the World Bank believing that child labour primarily occurs on unlicensed, informal mines and thus by formalising the industry they are addressing child labour indirectly.¹² However, Human Rights Watch (2013) has documented children working in licensed gold mines. The World Bank also has initiatives, both directly and indirectly, to end the use of mercury in gold mining. As mercury use is common in ASM and is often carried out by children this is an important area with regards to child safety (Human Rights Watch, 2013).

ILO

ILO is one of the largest organisations fighting child labour in the world and as they consider all forms of child mining to fall under the category of 'Worst Form of Child Labour' this is an area that they focus on. Past initiatives include the International Labour Organisation's International Programme on the Elimination of Child Labour, which reportedly withdrew 29,000 child labourers from mining, commercial agriculture, commercial sexual exploitation, and domestic work between

¹¹ Hidden costs include books, uniforms, security guards, stationary, etc..

¹² <http://www.worldbank.org/en/news/feature/2014/11/24/landmark-small-scale-mining-initiative-kicks-off-in-tanzania>

2001-2010 (Human Rights Watch, 2013). As is evident in this report, ILO is also extremely important in providing legislation and research on child labour and provide the most comprehensive statistics on the topic.

Terre des Hommes

Terre des Hommes is an NGO that supports and implements development and humanitarian aid projects designed to improve the living conditions of disadvantaged children, and of their families and communities.¹³ Their work normally involves awareness workshops, reinforcing the educational system, encouraging income-generating activities and providing aid to families. Terre des Hommes Netherlands, has been trying to get child workers back in school and to develop alternate income sources so that the families do not need to rely on their children's wages. In Tanzania, Terre des Hommes Netherlands, working with Rafiki SDO, has managed to help a large number of children leave the mines and to go to school.¹⁴ However, as seen in the previous section, there are criticisms of these types of projects and their long-term impact. Terre des Hommes also conducts and commissions research on child labour, with their report on mica mining in India providing much needed data on the issue of child mining and the supply chain.¹⁵

Plan International

Plan International is a UK-based NGO that works to ensure that children are healthy, educated, protected, valued, and respected in their own community and beyond.¹⁶ Plan International has worked to reunite lone kids in the mines in DRC with their parents, thus getting them out of mining. They also work to get children back in the classroom or connect them with access to vocational training to give them a long-term career.¹⁷ Plan International's anti-child labour project in Geita region, Tanzania, which is supported by the European Union, aims to get children into schools to secure their long-term future, although it does not mean that they are not working in mines when they are not at school. The project covers 12,000 children in 11 mining wards targeting 52 villages.¹⁸

PACT

PACT is an NGO that works in over 40 countries with the aim of improving the lives of those who are challenged by poverty and marginalisation and to offer them a sustainable future.¹⁹ PACT has projects running that aim to tackle child labour in mining in Madagascar, Nigeria, Colombia and the DRC. In DRC, PACT is running a project called Watoto Inje ya Mungoti (WIM) which

¹³ <http://www.terredeshommes.org/about/mission/>

¹⁴ <http://www.reuters.com/article/us-tanzania-mining-children-feature/tanzania-struggles-to-end-child-labor-from-the-lure-of-gold-idUSKBN176007>

¹⁵ <http://www.terredeshommes.org/india-child-labour-in-mica-products/>

¹⁶ <https://plan-international.org/organisation>

¹⁷ <https://plan-international.org/central-african-republic/child-protection-central-african-republic>

¹⁸ <https://plan-international.org/all-glitters-not-gold-limi-and-oscar-story>

¹⁹ <http://www.pactworld.org/our-promise>

aims to address the key factors driving children to work in tin, tantalum and tungsten mines in and around Manono town in Tanganyika Province. WIM was implemented as part of the ITRI Tin Supply Chain Initiative (iTSCi), a comprehensive due diligence and mineral traceability system implemented in Central Africa by the mining industry with the governments of the region. WIM aimed to increase community awareness of children's rights and improve the economic stability of caregivers who share such awareness. As a result of WIM, bans on child labour were enforced at 23 mine sites in the target area by the end of the project and there was a decrease of 89% in the number of children working at mines (PACT, 2016: 1-10).

The iTSCi has been implemented by PACT in Burundi, Uganda, Democratic Republic of Congo, and Rwanda. The system monitors minerals from the point of extraction at mines sites to smelters, where minerals are processed for use. PACT assess when sites are able to enter the system and supports governments in implementing the mineral tracking system. Part of this system ensures that there is no child labour in the mines accepted to the system.²⁰

Bachpan Bachao Andolan

Bachpan Bachao Andolan (BBA: Save the Childhood Movement) - is one of the leading child rights organisations in India with the aim of protecting children from child labour. BBA focuses on prevention in order to address the root causes of child labour and they aim to create what they call a Child Friendly Village. In 2005-2009, BBA started to run nine schools in the mica mining area of Jharkhand/Bihar and the majority of these schools were later handed over to the government. In October 2009, BBA brought together the two major purchasers Merck and Eckart with the local communities and traders to create child friendly villages. In 2010, BBA began working in 30 villages, located in Jharkhand/Bihar. Merck sponsored 20 villages and Eckart supported 10 villages. The aim was to create awareness of the importance of education and to enrol children in school. Although sponsorship was later stopped BBA has continued with its project to create child friendly villages (ten Kate et al., 2015).

Gesellschaft für Internationale Zusammenarbeit (GIZ)

GIZ is a German development agency that works closely with the German government with the aim of providing sustainable development. GIZ works to provide more and better education opportunities to children, thus alleviating their need to mine. At the same time they work to make mining more sustainable and profitable for local communities in an attempt to make it more financially viable for them not to send their children to work. It also tries to help communities install ethically based labels such as Fairtrade or Responsible Jewellery Council.²¹

Fairtrade

Fairtrade offers certification for miners and helps them to sustainably develop their business, become an active part of the wider community, and receive a guaranteed fair minimum price as well as a premium to spend on improving the business and community projects. However, to become a Fairtrade miner, miners have to reach Fairtrade minimum standards. The Standards include strict requirements on working conditions, health and safety, handling chemicals,

²⁰ <http://www.pactworld.org/mines-markets/project>

²¹ <https://www.giz.de/expertise/downloads/giz2014-en-sammelmappe-factsheets.pdf>

women's rights, child labour and protection of the environment. Moreover, certification includes the entire supply chain, from producers up to the final product and to be part of the Fairtrade process all parts of the supply chain have to agree to allow Fairtrade auditors to visit at any time. Although Fairtrade currently has an extremely limited impact on the ASM market – with currently only three certified mining organisations, two which are in Africa (SYANYONJA in Uganda and MICODEPRO in Kenya) – with the price that they offer miners, the standards they implement, and the community projects (around education, safe water and health) they run, Fairtrade does have a significant impact on the lives of children involved.²²

Fairmined - Alliance for Responsible Mining

The Alliance for Responsible Mining sets standards for responsible ASM and supports miners to their Fairmined standard, which enables them to deliver their product through an economically fair supply chain. Under the Fairmined Standard, opportunities are created, progressive organisation is facilitated, working conditions are improved, responsible environmental management is promoted, and the well-being of mining families and communities is contributed to through the programme. It follows the same principles of the Fairtrade standard discussed above and has been developed in conjunction with them. The Alliance for Responsible Mining also offers a Market Entry Standard for those ASM cooperatives that are not currently capable of meeting the advanced performance requirements of the Fairmined Standard, which will help create a pathway toward the Fairmined Standard. In Senegal, Burkina Faso and Mali the Alliance for Responsible Mining has formalised three ASM's, creating the first mining cooperative in Burkina Faso; created a Committee on Occupational Health, Safety and Hygiene; reforested more than 10,000 trees in the mining community; implemented better production techniques that benefit women miners; taught the communities on the Fairmined Standard; and organised a workshop to exchange experiences between miners in the three countries.²³

Dutch Ministry

The Dutch government is heavily involved in processes to eradicate child labour in mining. One such element is the formation of the Dutch Gold Sector International Responsible Business Conduct (IRBC) Agreement, which includes combatting child labour with a pilot project in Uganda.²⁴ As part of this programme, following the successful pilot project, the Dutch government has also teamed up with Comic Relief and Fairtrade in an £11 million scheme to support ethical gold mining in east Africa.²⁵

²² http://wordpress.p20126.webspaceconfig.de/wp-content/uploads/2014/01/Gold-and-Precious_Metals-Standard.pdf

²³ <http://www.responsiblemines.org/en/project/creation-of-a-fair-gold-supply-chain-in-west-africa-and-the-reduction-of-the-use-of-mercury-in-the-extraction-process/>

²⁴ http://www.internationalrbc.org/gold/news/2017/6/start-verantwoord-goud?sc_lang=en

²⁵ <https://www.theguardian.com/business/2017/oct/01/comic-relief-and-fairtrade-back-ethical-gold-mining-in-east-africa>

Swiss Agency for Development and Cooperation (SDC)

Similar to GIZ, SDC works to make artisanal mining more sustainable for local communities, which helps alleviate the need to send children to work in the mines. SDC funds many projects globally to achieve this goal, but are currently particularly active in Mongolia. They focus on the legalisation of ASM operations, supporting decentralisation of mining administration, establishing innovative communications structures, integrating demand-oriented service delivery, and the empowering of artisanal miners and local service providers.²⁶ They also aim to get artisanal miners on the Fairmined project so that they can get a fair price for their gold, which in turn alleviates the need for them to send their children to work in the mines.²⁷

OECD

The OECD has an International Conference on the Great Lakes Region (ICGLR) certification scheme that follows the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. This covers upstream due diligence in the supply chain of tin, tantalum, tungsten and gold from conflict-affected and high-risk areas in Africa's Great Lakes region.²⁸ As part of this scheme minerals are traced through the supply chain and it is audited to ensure good and safe practises, which include the lack of the worst forms of child labour.²⁹ OECD also produce a number of guidelines to help companies through the process of due diligence in their sourcing of minerals, including due diligence steps to address worst forms of child labour in mineral supply chains (OECD, 2017).

Responsible Jewellery Council

The Responsible Jewellery Council (RJC) is a standards setting and certification organisation that has over 1,000 members. Although it spans the jewellery supply chain from mine to retail, there is a strong focus on retailers selling responsibly sourced jewellery. RJC Members commit to and are independently audited against the RJC Code of Practices – an international standard on responsible business practices for diamonds, gold and platinum group metals. This includes human rights, labour rights, environmental impact, mining practices, and product disclosure.³⁰ With regards to ASM, RJC works with the Alliance for Responsible Mining to ensure this aspect of the supply chain and in turn that child labour is not involved on the process.³¹

²⁶ <http://sam.mn/sustainable-artisanal-mining-project/>

²⁷ <http://sam.mn/6000-premium-for-fairmined-and-ecological-gold-extraction/>

²⁸ <http://www.oecd.org/corporate/mne/mining.htm>

²⁹ http://www.oecd.org/daf/inv/mne/EasytoUseGuide_English.pdf

³⁰ <https://www.responsiblejewellery.com>

³¹ <https://www.responsiblejewellery.com/artisanal-and-small-scale-mining/>

7. References

- Amnesty International (2016). Democratic Republic of Congo: "This is what we die for": Human Rights Abuses in the Democratic Republic of the Congo power the global trade in cobalt. *Amnesty International* AFR 62/3183/2016. Retrieved from: <https://www.amnesty.org/en/documents/afr62/3183/2016/en/>
- André, G., & Godin, M. (2013). Child labour, agency and family dynamics. *Childhood*, 21(2), 161-174. doi:10.1177/0907568213488966
- Donger, E. (2016). The Sale of Children for Labor Exploitation: Summary of Existing Data and Areas of Priority and Good Practice. Boston: Harvard University. Retrieved from: <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/5/2016/10/The-Sale-of-Children-for-Labor-Exploitation.pdf>
- Global Protection Cluster (2014). Responding to the Worst forms of Child Labour in Emergencies. Global Protection Cluster. Retrieved from: http://cpwg.net/wp-content/uploads/sites/2/2014/12/Review_Responding_to_WFCL_in_Emergencies_final.pdf
- Hilson, G. (2009). Small-scale mining, poverty and economic development in sub-Saharan Africa: An overview. *Resources Policy*, 34(1), 1-5. doi:<https://doi.org/10.1016/j.resourpol.2008.12.001>
- Hilson, G. (2010). Child Labour in African Artisanal Mining Communities: Experiences from Northern Ghana. *Development and Change*, 41(3), 445-473. doi:10.1111/j.1467-7660.2010.01646.x
- Human Rights Watch (2009). Decent Work for Domestic Workers: Recommendations to ILO Members regarding the Law and Practice Report and Questionnaire. New York: Human Rights Watch. Retrieved from: https://www.hrw.org/sites/default/files/related_material/2009_wrd_domestic_workers.pdf
- Human Rights Watch (2011). A Poisonous Mix: Child Labor, Mercury, and Artisanal Gold Mining in Mali. New York: Human Rights Watch. Retrieved from: <https://www.hrw.org/report/2011/12/06/poisonous-mix/child-labor-mercury-and-artisanal-gold-mining-mali>
- Human Rights Watch (2013). Toxic Toil: Child Labor and Mercury Exposure in Tanzania's Small-Scale Gold Mines. New York: Human Rights Watch. Retrieved from: <https://www.hrw.org/report/2013/08/28/toxic-toil/child-labor-and-mercury-exposure-tanzanias-small-scale-gold-mines>
- Human Rights Watch (2015). "What ... if Something Went Wrong?" Hazardous Child Labor in Small-Scale Gold Mining in the Philippines. New York: Human Rights Watch. Retrieved from: <https://www.hrw.org/report/2015/09/29/what-if-something-went-wrong/hazardous-child-labor-small-scale-gold-mining>
- ILO (2002). A Future Without Child Labour. Geneva: ILO. Retrieved from: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_publ_9221124169_en.pdf
- ILO (2002a). Every Child Counts New Global Estimates on Child Labour. Geneva: ILO. Retrieved from: <http://www.childlineindia.org.in/PDF/Global-Child-Labour-ILO.pdf>

- ILO (2005) Eliminating Child Labour in Mining and Quarrying: Background Document. Geneva: ILO. Retrieved from: <http://www.ilo.org/public/portugue/region/eurpro/lisbon/pdf/minas.pdf>
- ILO (2008). Child Labour Statistics. Geneva: ILO. Retrieved from: <http://www.ilo.org/ipecinfo/product/download.do?type=document&id=7830>
- ILO (2011). The Worst Forms of Child Labour, Education and Violent Conflict. Geneva: ILO. Retrieved from: <http://unesdoc.unesco.org/images/0019/001907/190779e.pdf>
- ILO (2012). Hard to see, Harder to Count: Survey Guidelines to Estimate Forced Labour of Adults and Children. Geneva: ILO. Retrieved from: <http://un-act.org/wp-content/uploads/2015/06/Harder-to-See-Harder-to-Count.pdf>
- ILO (2013). Uganda National Child Labour Survey Report 2011-2012: National Labour Force and Child Activities Survey 2011-2012. Geneva: ILO. Retrieved from: http://www.ilo.org/ipec/Informationresources/WCMS_IPEC_PUB_26415/lang--en/index.htm
- ILO (2015a). World Report on Child Labour: Paving the Way to Decent Work for Young People. Geneva: ILO. Retrieved from: http://www.ilo.org/ipec/Informationresources/WCMS_358969/lang--en/index.htm#
- ILO (2015b). Sectoral survey of child labour in informal tin mining in Kepulauan Bangka Belitung Province, Indonesia 2014. Geneva: ILO. Retrieved from: http://www.ilo.org/ipec/Informationresources/WCMS_IPEC_PUB_27535/lang--en/index.htm
- ILO (2016). Tanzania national child labour survey 2014: Analytical Report. Geneva: ILO. Retrieved from: http://www.ilo.org/ipec/Informationresources/WCMS_IPEC_PUB_28475/lang--en/index.htm
- IPEC (2013). Marking progress against child labour Global estimates and trends 2000-2012. Geneva: ILO. http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipec/documents/publication/wcms_221513.pdf
- IREWOC (2010). The Worst Forms of Child Labour in Asia: Main Findings from Bangladesh and Nepal. Leiden: IREWOC. Retrieved from: <https://resourcecentre.savethechildren.net/sites/default/files/documents/3990.pdf>
- KidsRights. (2014). *Minors Not Miners: Hazardous Child Labour, with a focus on gold mining in Burkina Faso*. Retrieved from https://kidsrights.org/sites/default/files/inline-files/Minors not Miners - Hazardous Child Labour%2C with a focus on gold mining in Burkina Faso_0.pdf
- Levison, D. et al (2007). Intermittent Child Employment and Its Implications for Estimates of Child Labour. *International Labour Review*, 146 (2007), 217–251. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2546602/>
- 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(Supplement C), 136-147. doi:<https://doi.org/10.1016/j.worlddev.2015.10.012>
- O’Donnell, O. et al. (2002). Child Labour and Health: Evidence and Research Issues. UCW. Retrieved from: http://www.ucw-project.org/Pages/bib_details.aspx?id=792

OECD (2016). Practical Actions for Companies to Identify and Address the Worst Forms of Child Labour in the Minerals Supply Chain. Paris: OECD: Retrieved from: <https://mneguidelines.oecd.org/OECD-Practical-Actions-for-WFCL-in-Mining.pdf>

OECD (2017), Practical actions for companies to identify and address the worst forms of child labour in mineral supply chains. Paris: OECD: Retrieved from: <http://mneguidelines.oecd.org/Practical-actions-for-worst-forms-of-child-labour-mining-sector.pdf>

PACT (2016). Children Out of Mining. PACT Report. Retrieved from: <http://www.pactworld.org/library/children-out-mining>

Schipper, I., de Haan, E., & van Dorp, M. (2015). *Gold from children's hands: Use of child-mined gold by the electronics sector*. Retrieved from <https://www.somo.nl/wp-content/uploads/2015/11/Gold-from-children's-hands-5.pdf>

ten Kate, A., Schipper, I., Kiezebrink, V., & Remmers, M. (2015). *Beauty and the Beast: Child Labour in India for Sparkling Cars and Cosmetics*. Retrieved from <https://www.somo.nl/beauty-and-a-beast/>

United States Department of Labor (2012). 2011 Findings on the Worst forms of Child Labor. Washington DC: US DoL. Retrieved from: <https://www.dol.gov/ilab/reports/pdf/2011TDA.pdf>

United States Department of Labor (2014). 2013 Findings on the Worst forms of Child Labor. Washington DC: US DoL. Retrieved from: <https://www.dol.gov/ilab/reports/child-labor/findings/2013TDA/2013TDA.pdf>

United States Department of Labor (2015). 2014 Findings on the Worst forms of Child Labor. Washington DC: US DoL. Retrieved from: <https://www.dol.gov/ilab/reports/child-labor/findings/2014TDA/2014TDA.pdf>

United States Department of Labor (2016). 2015 Findings on the Worst forms of Child Labor. Washington DC: US DoL. Retrieved from: <https://www.dol.gov/sites/default/files/documents/ilab/reports/child-labor/findings/2015TDA.pdf>

UNICEF (2014). Child Labour and UNICEF in Action: Children at the Centre. New York: UNICEF. Retrieved from: https://www.unicef.org/protection/files/Child_Labour_and_UNICEF_in_Action.pdf

UNICEF (2012). How Sensitive are Estimates of Working Children and Child Labour to Definitions: A Comparative Analysis. New York: UNICEF. Retrieved from: https://data.unicef.org/wp-content/uploads/2015/12/Child_Labour_Paper_No.1_FINAL_162.pdf

Acknowledgements

We thank the following experts who voluntarily provided suggestions for relevant literature or other advice to the author to support the preparation of this report. The content of the report does not necessarily reflect the opinions of any of the experts consulted.

- Linda Sánchez Avendaño – HCRI, University of Manchester

Key websites

- ILO Child Labour: <http://www.ilo.org/global/topics/child-labour/lang--en/index.htm>
- US Department of Labor: <https://www.dol.gov/agencies/ilab/resources/reports/child-labor/findings>
- Fairmined: <http://www.fairmined.org>
- Responsible Jewellery Council: <https://www.responsiblejewellery.com>
- OECD Due Diligence: <http://www.oecd.org/corporate/mne/mining.htm>

Suggested citation

O'Driscoll, D. (2017). *Overview of child labour in the artisanal and small-scale mining sector in Asia and Africa*. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies.

About this report

This report is based on ten days of desk-based research. The K4D research helpdesk provides rapid syntheses of a selection of recent relevant literature and international expert thinking in response to specific questions relating to international development. For any enquiries, contact helpdesk@k4d.info.

K4D services are provided by a consortium of leading organisations working in international development, led by the Institute of Development Studies (IDS), with Education Development Trust, Itad, University of Leeds Nuffield Centre for International Health and Development, Liverpool School of Tropical Medicine (LSTM), University of Birmingham International Development Department (IDD) and the University of Manchester Humanitarian and Conflict Response Institute (HCRI).

This report was prepared for the UK Government's Department for International Development (DFID) and its partners in support of pro-poor programmes. It is licensed for non-commercial purposes only. K4D cannot be held responsible for errors or any consequences arising from the use of information contained in this report. Any views and opinions expressed do not necessarily reflect those of DFID, K4D or any other contributing organisation. © DFID - Crown copyright 2017.

