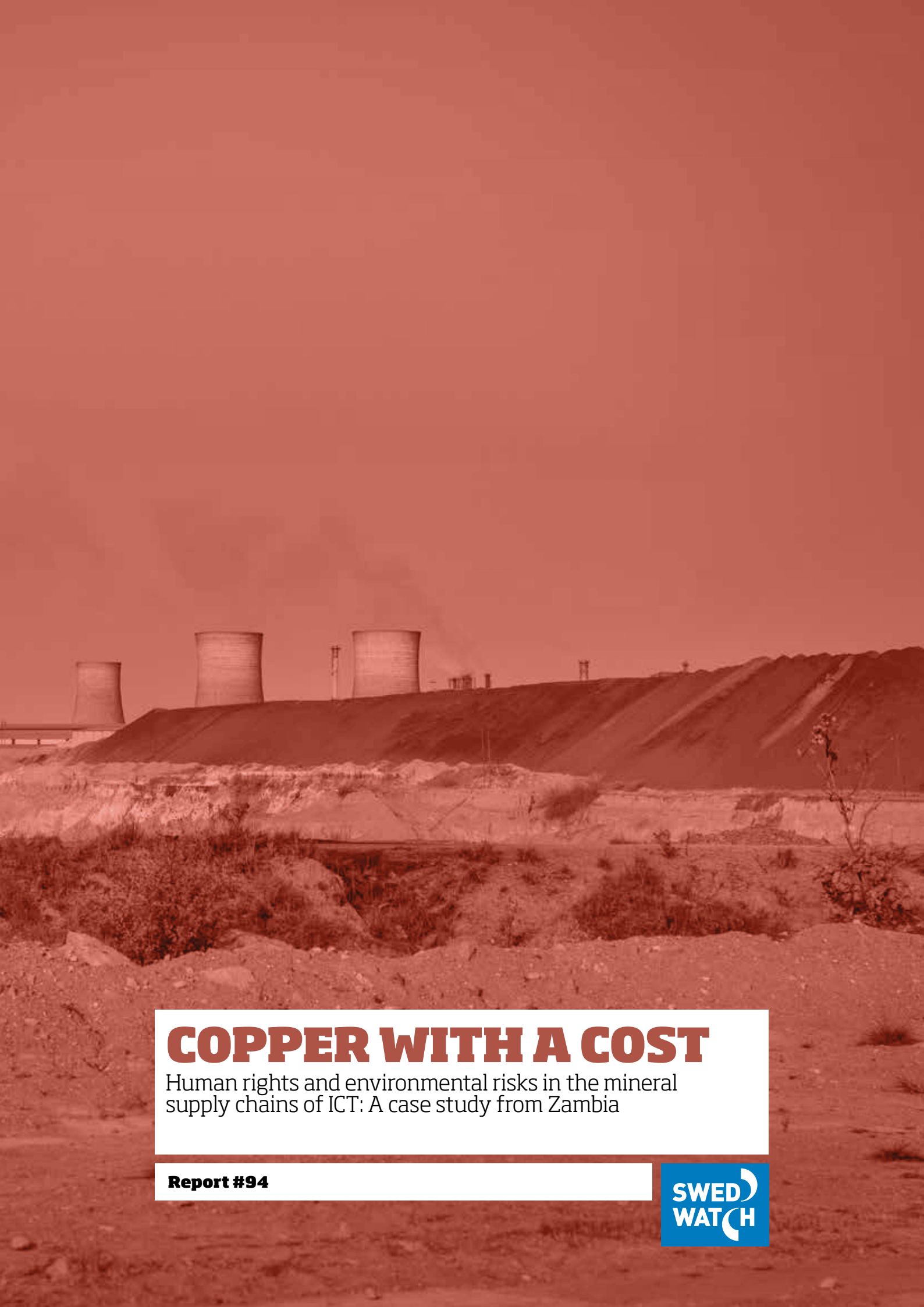


COPPER WITH A COST

Human rights and environmental risks in the mineral supply chains of ICT: A case study from Zambia

Report #94

SWEDWATCH

Swedwatch is an independent not-for-profit organisation that conducts in-depth research on the impacts of businesses on human rights and the environment. The aim of the organisation is to contribute towards reduced poverty and sustainable social and environmental development through research, encouraging best practice, knowledge-sharing and dialogue. Swedwatch has six member organisations: Afrikagrupperna, the Church of Sweden, Diakonia, Fair Action, Solidarity Sweden-Latin America and the Swedish Society for Nature Conservation. This report, which can be downloaded at www.swedwatch.org, is authored by Swedwatch.

Make ICT Fair is an EU wide campaign that aims to improve the lives of workers and communities affected by the production of ICT devices such as smartphones and laptops. Through awareness raising, research and advocacy, the campaign highlights human rights impacts and environmental impacts along the ICT supply chains and inform on solutions. We target EU citizens, Public Procurers, Development Banks, Decision-makers and Companies to improve their purchasing practices and to align policies. Make ICT Fair is funded by the European Union, through the EU Dear Programme and involves eleven European civil society organisations and academia.

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Publisher: Alice Blondel
Published: 6th of May 2019
ISBN: 978-91-88141-27-9

This document has been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of Swedwatch and can under no circumstances be regarded as reflecting the position of the European Union (https://ec.europa.eu/europeaid/node/22_en).

This report has been co-financed by the Government of Sweden. Responsibility for the content lies entirely with the creator. The Government of Sweden does not necessarily share the expressed views and interpretations.

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Executive summary

Information and Communication Technology (ICT) products, such as smartphones and laptops, are commonly produced through complex supply chains that are characterised by low transparency and traceability. The supply chain involves many business intermediaries, from mineral extraction to finished product, making it difficult for consumers to know the source of minerals present in their ICT devices and if they are associated with conflict and human rights impacts. In this report, Swedwatch presents findings from an investigation on human rights risks and impacts associated with large-scale mining of copper, a mineral that is an essential component of ICT products. Swedwatch focused its research on Zambia, one of the largest copper producing and exporting countries in the world (see chapter 1: Introduction, page 7).

Mineral extraction is associated with human rights risks and impacts affecting local communities surrounding mining areas, including environmental degradation, forced evictions and fueling of conflict. Companies within the ICT sector have taken steps to address risks associated with so-called "conflict minerals"– tin, tantalum, tungsten and gold (3TG) and to an emerging degree cobalt. However, there are indications that address of salient human rights risks connected to the extraction of other minerals present in global ICT supply chains, such as copper, has fallen short and risk undermining the realization of the Sustainable Development Goals (SDGs) (see chapter 4: Are ICT companies addressing minerals beyond 3TG?, page 52).

Based on Swedwatch research findings, this report highlights impacts associated with 1) water contamination due to mining activities and 2) resettlement of communities following the establishment of a new mine. Due in part to weak public institutions and government oversight, low enforcement of law, high poverty rates and widespread corruption, Zambia should be considered a high-risk context for mineral extraction in regards to human rights and the environment. As foreign direct investments in land-use projects such as mining have increased, so has the displacement of communities living off the land – often without adequate consultation and compensation. Mining in the country has also been associated with environmental pollution of water, soil and air (see chapter 2: Background: The ICT sector and the Zambian mining context, page 17).

In Swedwatch's first case study in the district of Chingola, there are strong indications that Konkola Copper Mines Plc.'s (KCM) mining operations have polluted waterways utilized by local communities for drinking, fishing, cooking and irrigating crops. Swedwatch's findings indicate that this has affected community members in the village of Shimulala with adverse impacts on income-levels and livelihoods. Findings also suggest that farmers from the Chabanyama community lost their livelihoods when KCM deposited mine waste onto their farmland, which polluted the soil in the area and impacted crop yields. Due to loss of livelihoods, community members in Chabanyama and Shimulala experience impacts on food security and parents are unable to send children to school as income levels have decreased. Swedwatch's findings indicate that KCM's mining operations have caused impacts on the human right to clean water as stipulated in the declaration by the UN General Assembly, making the water unsafe and of an unacceptable quality. The case highlights how clean water is a prerequisite to the enjoyment of other human rights and how impacts from mining on water risk to multiply in effect (see chapter 3: Swedwatch's investigation in Zambia, page 25).

In Swedwatch's second case study in the Kalumbila district, common challenges were noted in regard to the establishment of new mining operations in rural, low-income areas with low levels of governmental presence and investments. The establishment of the Sentinel copper mine – fully owned by a subsidiary to First Quantum Minerals Limited (FQM) – led to the resettlement of community members into two separate areas. Swedwatch's findings indicate that although FQM has provided compensation and community programmes, the company has not sufficiently managed to restore community members' livelihoods. There are also indications that social networks and norms have been impacted negatively. Findings further suggest that in-migration has led to over-enrolment in schools and potentially increased teen pregnancies, prostitution and crime rates. High expectations and the feeling of being cheated of employment and other opportunities among community members interviewed, also raise questions about the level at which FQM's management of expectations and information distribution has been effective (see chapter 3: Swedwatch's investigation in Zambia, page 25).

Swedwatch's findings suggest that there is a need for the ICT sector as a whole to enhance human rights due diligence efforts beyond the scope of 3TG and cobalt and include copper and other high-risk materials. Further, ICT companies should address impacts beyond conflict and child labour and report on their copper supply chains. Companies along the ICT supply chain play an important role to contribute in a positive way to the 2030 Agenda for Sustainable Development and the fulfilment of the 17 UN Sustainable Development Goals (SDGs). If ICT companies keep a too narrow focus and scope of minerals in their human rights due diligence efforts, they risk undermining the realization of SDGs (see chapter 5: Analysis and conclusions, page 54).

Recommendations

Recommendations to all large-scale mining companies operating in Zambia:

- In line with the UN Guiding Principles on Business and Human Rights, implement adequate human rights due diligence (HRDD) systems to ensure own awareness, prevention and address of human rights risks and impacts present in operations. HRDD should be conducted with a gender perspective and should follow the OECD Guidance for Responsible Business Conduct. Ensure communications of the activities and results of companies' human rights due diligence processes in accordance with the concept of "know and show" as outlined in the UNGPs.

- Implement robust infrastructure and sufficient management and monitoring systems that will safeguard against pollution of water, soil and air associated with mining operations. Remediate and restore any historic or current spills or impacts. Share test results from sampling of water, air and soil, audit reports and identified risks and impacts with affected stakeholders.

- When land is acquired for mining operations, ensure sufficient consultation and compensation and provide an effective grievance mechanism. This should, as a minimum, comply with international standards such as the IFC standard on Land Acquisition and Involuntary Resettlement.

- Ensure that livelihoods and living conditions are improved or restored when mining operations entail the resettlement of communities. Ensure that management of in-migration of workers and job-seekers into new mining areas is sufficient to safeguard against social impacts. Engage in dialogue with the Zambian Government in order to establish a clear legal framework regarding resettlement and compensation.

Recommendations to the Zambian government:

- To ensure sustainable mining practices, the Zambian Environmental Management Association (ZEMA) and other relevant Zambian authorities should enhance the enforcement of environmental laws and regulations. Sufficient resources should be allocated to monitoring of mining operations' compliance with laws and regulations.

- ZEMA should enhance transparency towards affected stakeholders and publicly share test results of soil, water and air and documents such as resettlement plans.

- Zambian legislators should develop a robust legal framework regarding resettlement and compensation that will safeguard the restoration of livelihoods among resettled community members.

- Enhance public investment in social services, environmental protection and poverty reduction to mitigate any adverse impacts linked to mining projects.

- Develop and implement a National Action Plan on Business and Human Rights in line with international standards.

Recommendations to companies in ICT supply chains:

- In accordance with international standards such as the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas and the UN Guiding Principles of Business and Human Rights, establish effective human rights due diligence processes that include high-risk minerals such as copper. Engage with stakeholders and rights holders in mining communities to prevent and mitigate risks and impacts.

- Increase transparency in line with the UN Guiding Principles. Trace and publicly disclose smelters and refiners in supply chains for copper and other high-risk minerals in addition to 3TG and cobalt, present in ICT supply chains.

- Contribute to increased leverage and sustainable sourcing of minerals through constructive collaboration with all stakeholders present in mineral supply chains, on human rights and environmental impacts associated with minerals beyond 3TG and cobalt.

Recommendations to legislators in the European Union:

- When evaluated in 2023, expand the European Union Conflict Minerals Regulation to include copper and other high-risk minerals beyond 3TG. In addition to addressing the issue of conflict, the legislation should require companies that source minerals to perform effective human rights due diligence, in accordance with international standards. The EU legislation should be adjusted to also include ICT companies and distributors beyond mineral importers, smelters and refiners.

To contracting authorities within the European Union:

- Include social criteria in public procurement processes and contracts for ICT products. Criteria should ensure that suppliers perform effective human rights due diligence within their mineral supply chains of ICT products, in line with international standards and best practice. Monitor suppliers' compliance with the requirements closely and collaborate with other contracting authorities to build leverage.

1. Introduction

Today's digitalized world builds on the extensive exploitation of natural resources. Metals constitute essential components in smartphones, laptops and other information and communication technology (ICT) products that have rapidly become essentials in most aspects of peoples' daily life in many parts of the world. In the technological age, ICT products are used globally for everything from energy and water supply, food production, healthcare, farming, transport and space innovations to the construction of buildings, infrastructure and communications. In 2019, the global market of ICT is expected to be worth 4.4 trillion Euros, almost doubling in value since 2005.[1] Private individuals are not the only purchasers of ICT products: the public sectors of 29 European countries procured 50.3 billion EUR in ICT goods and services in 2011.[2] Increased access to information and communications technology plays a crucial role in the UN Sustainable Development Goals (SDGs)[3] relating to industries, innovation and infrastructure.[4] While it has been acknowledged that ICT companies in recent years have increased their activities in understanding and addressing human rights issues linked to their products and services,[5] there is an urgent need for improvements in the management of existing and potential adverse impacts in global ICT supply chains to support the achievement of the 2030 Agenda.[6]

The composition of ICT products requires a large quantity of different minerals. For example, a smartphone – the dominant consumer electronics product on the market – contains approximately 75 different elements, including many metals, covering two-thirds of the periodic table.[7] Extraction of many minerals is however associated with risks of severe impacts on the environment and human rights. Several international guidelines have been developed that outline how to help curb these linkages. For example, according to the UN Guiding Principles on Business and Human Rights (UNGPs), all companies have a responsibility to respect human rights throughout their business operations.[8] The OECD Due Diligence Guidance for Responsible

The Nchanga mine is located in urban Chingola in Zambia. It is one of the largest open-pit mines in Africa. Zambia is the seventh largest producer of copper in the world.

Supply Chains of Minerals from Conflict-Affected and High-Risk Areas[9] provides detailed recommendations to companies in the mineral supply chains on how they can respect human rights and avoid contributing to conflict.

However, despite these and other comprehensive international frameworks and initiatives designed to address corporate responsibility and sustainable sourcing of minerals, environmental and human rights risks such as conflict, environmental degradation, forced displacement and land rights violations[10] are widely associated with the mining of minerals across the world. In turn, this often affects local communities' human rights, such as impacts on the right to clean water, food and health, as well as impacts on livelihood.[11] Due to the opaque and complex nature of ICT supply chains, it is difficult for consumers to know whether or not minerals in ICT products are associated with, for example, conflict or adverse human rights impacts.

In recent years, business actors within the ICT sector have become more aware of their responsibility to address human rights risks linked to the extraction of the four "conflict minerals" – tin, tantalum, tungsten and gold, often referred to as 3TG. In countries such as the Democratic Republic of Congo (DRC), the artisanal mining of minerals has been known to finance armed conflict and warfare, which causes severe negative impacts on local communities.[12] The ICT sector's attention has also been brought to cobalt, another mineral present in ICT products, by media reports that have exposed child labour and hazardous working conditions in cobalt mines in the DRC.[13] However, as ICT products contain several different metals, ICT companies need to identify and address human rights risks in their supply chains beyond 3TG and cobalt.

Copper is a vital component in ICT products due to its conductivity properties.[14] As the world market for ICT products continues to grow rapidly,[15] so too does the global demand for copper, which has doubled over the last 25 years.[16] Zambia holds the largest copper reserve in Africa.[17] The country is the seventh-largest producer of copper in the world[18] and its copper production is expected to grow.[19] As one of the world's poorest countries,[20] mining has played an important role in the Zambian economy.[21] In a context of weak law enforcement, widespread corruption, and low institutional accountability and transparency[22] mining has come at a high price for local communities with pollution of air, water and soil affecting livelihoods and health of community members. There is also a risk of involuntary displacements enforced without sufficient consultation and compensation.[23]

This report presents findings from two case-studies in Zambia and illustrates the extent to which copper extraction is associated with human rights impacts and risks that are likely to be found in many of the world's mineral exporting countries and global supply chains of a wide range of ICT products. Findings indicate that local communities and rights holders are negatively impacted by water contamination and pollution in one case, and in the other, affected after being resettled due to establishment of a new mining project. The focus of the report is to draw attention to the need for ICT companies to address human rights issues associated with mineral extraction beyond 3TG and cobalt. With its multifaceted impact on communities, the environment and economies globally, the ICT sector's contribution towards the fulfilment of the SDGs is crucial.[24]

Methodology

The report is based on desk research and a field study conducted in two parts. The field study included visits to the Kalumbila district in Zambia's North-Western Province, where the Sentinel mine owned by Kalumbila Minerals Limited (KML) is located. The research team also visited Chingola, which hosts the Nchanga mine owned by Konkola Copper Mines Plc. (KCM), located in the Copperbelt Province in northern Zambia. Swedwatch contracted a local researcher to carry out initial research and interviews with community members in June 2018. The findings from these interviews informed Swedwatch's subsequent field study and focus areas.

In August 2018, Swedwatch visited and conducted interviews in three villages in Kalumbila and three areas in Chingola, together with the local researcher, civil society representatives and a filmmaker. Interviews were conducted with a variety of affected rights holders and other stakeholders, and included women, men, community leaders, youth, school representatives and health clinic staff. Swedwatch also interviewed representatives of local and national civil society organisations, as well as government representatives in Chingola and the capital of Lusaka. A total of 110 persons were interviewed either individually or in focus groups.

In order to protect communities, rights holders have been anonymised throughout the report. In line with Swedwatch's standard methodology to safeguard independent responses by rights holders and other stakeholders and to ensure their safety, Swedwatch refrained from contacting the mining companies in advance of the field studies. Swedwatch initiated dialogue with First Quantum Minerals Limited (FQM) – the sole owner of KML - and KCM after the field visit. FQM responded to Swedwatch's questions and provided documentation, while KCM did not respond to any of the questions asked. Swedwatch has therefore not been able to fully compare and balance the findings from the community interviews in Chingola with company responses. In addition, Swedwatch contacted the Zambian Environmental Management Agency (ZEMA) with questions but did not receive a response.

For this report, Swedwatch also interviewed the Responsible Mineral Initiative (RMI), a global private sector organisation that supports member companies in their due diligence efforts and encourage responsible sourcing of minerals from conflict-affected or high-risk areas; a representative of Intel, one of the world's largest ICT companies; and Impact, a civil society organisation that specialises in the governance of natural resources in high-risk areas (see section 4. *Are ICT companies addressing minerals beyond 3TG?*, page 52).

As Zambia is one of the top producing and exporting countries of copper in the world, there is a clear possibility that copper extracted in Zambia is present in ICT products. Yet, due to the low transparency and traceability in global mineral supply chains, Swedwatch has not been able to map the supply chains for the copper mines inclu-

ded in this report. Thus, Swedwatch cannot determine if copper extracted from these particular mines forms part of ICT mineral supply chains. Consequently, the findings from Zambia should be viewed as examples of the risks of human rights impacts that are present in consumer technology supply chains.

During the field study, Swedwatch was informed on subsequent social impacts such as increased levels of prostitution, teen-pregnancies, a rise in sexually transmitted disease, crime and alcohol abuse. As Swedwatch was not able to verify data with local authorities further, research on these impacts is encouraged.

This report was produced by Swedwatch as part of the Make ICT Fair project, funded by the European Commission under the Directorate-General for Development and Cooperation – EuropeAid and co-financed by the Swedish International Development Agency (Sida). The civil society organisation Action Aid Zambia provided expert input and logistical support to Swedwatch's field research in Zambia.

Companies' responsibility to respect human rights

There are numerous international guidelines on how companies should incorporate human rights into their business operations. The UN Guiding Principles of Business and Human Rights (UNGPs), unanimously endorsed by the UN Human Rights Council in 2011, define the roles of states and companies in ensuring that companies respect all human rights. The UNGPs clarify that although states have the ultimate duty to protect their citizens against human rights impacts by third-party actors, businesses are responsible for respecting human rights in their operations and throughout their business relationships, regardless of the company's size, sector, location, ownership or business structure. In practice, companies must avoid causing or contributing to adverse human rights impacts and must seek to mitigate and prevent impacts throughout their value chains. Therefore, an ICT company, even if it does not directly cause the impact, could be linked to human rights impacts if it sources minerals that are associated with human rights abuses.[25] The UNGPs also stipulate that companies cannot rely on state actors to address risks, especially in cases where state actors fail to respect and protect their citizens' human rights – in particular if they operate in high-risk countries where human and labour rights abuses are common.[26]

The UNGPs state that in order to respect human rights, companies should perform human rights due diligence (HRDD). This process builds on the concept of "know and show": business actors are responsible for being aware of, and reporting on, how their business operations risk adversely impacting human rights throughout their supply chain. HRDD requires companies to commit in policy statements to respect all human rights, assess the risk of potential and actual human rights impacts, take action to prevent and mitigate impacts, track and communicate performance, and

provide remedy to affected rights holders through legitimate processes if the company has caused or contributed to salient impacts. The UNGPs specify that companies need to communicate their efforts to address human rights impacts and provide a measure of transparency and accountability to those who may be impacted or other relevant stakeholders. Effective HRDD is critical when there is a heightened risk of severe impacts, for example in countries where corruption, weak governance or conflict is prevalent, or where business activities may include practices associated with adverse human rights impacts related to land acquisition, resettlement and extensive water usage.[27]

The principles also stipulate that business actors should establish a grievance mechanism to collect and address complaints. If a company is linked to human rights impacts through its business relations, it should use its leverage over the business partner causing or contributing to the impact to effect change. If the company lacks leverage, it should seek to increase it.[28]

Water as a human right

The UN General Assembly has declared that access to clean water and sanitation is a human right.[29] Water must be available, accessible, affordable, safe for consumption and domestic use and of an acceptable quality (i.e. an acceptable colour, odour and taste and free from chemical substances that can cause health impacts).[30] Clean water is a precondition to the enjoyment of other human rights.[31] For example, water pollution from industrial processing and effluents may impact people's right to health or jeopardise their right to food and livelihood where crop, livestock or fish are affected by polluted water.[32]

Several standards and guidelines outline companies' responsibilities and provide guidance on sustainable water management. The International Finance Corporation (IFC) Environment, Health and Safety Guidelines stress that drinking water sources must at all times be protected to meet or exceed national standards or World Health Organization (WHO) guidelines.[33] The IFC Guidelines also stipulate the need to prevent adverse impacts on the quality of groundwater and surface water when wastewater is discharged.[34] The Initiative for Responsible Mining Assurance's standard for water management declares that "waters affected by the mining project shall be maintained at a quality that enables safe use for current purposes and for the potential future uses identified in collaboration with relevant stakeholders".[35] According to the UN Global Compact CEO Water Mandate guidance for Companies on Respecting the Human Rights to Water and Sanitation[36], companies are expected to align water management with their obligation to respect human rights. Therefore, companies need to perform HRDD in accordance with the UNGPs, with respect to water and sanitation in particular, and communicate how impacts are addressed. The UN Global Compact CEO Water Mandate guidance highlights that problems as well as success stories should be communicated. Enhanced transparency is particularly important where there is a history of distrust between the company and affected stakeholders, or where there is a high risk of severe impacts.[37]

Copper is one of many metals used in ICT products. Large-scale mining of copper is associated with environmental and human rights impacts as well as conflict in countries across the world.

Guidance for responsible sourcing of minerals

According to the UNGPs, all companies are responsible for respecting human rights throughout their supply chains. For ICT companies, this includes the point of extraction of minerals used in their products. However, ICT products entail complex supply chains, where the end producer or brand commonly outsources the production of components and final assembly. This presents a challenge for companies when it comes to tracing minerals to the source and to use their leverage over affiliated firms to prevent violations. Tracing minerals to the mine where they were extracted is also a challenge, as minerals from different sources are often blended together in smelters. Despite the complexity of supply chains and low traceability, ICT companies must still respect human rights and take reasonable measures to identify, prevent and mitigate any negative human rights impacts associated with minerals present in their supply chains, and exercise their leverage to create change.[38]

The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas provides detailed recommendations to companies along mineral supply chains on how they can respect human rights and avoid contributing to conflict using a five-step framework. The guidelines were initially developed to address and mitigate risks in the purchasing of 3TG minerals, but the 2016 edition clarified that they are applicable to sourcing all minerals from conflict-affected and high-risk areas.[39]

Recommended actions vary depending on where in the supply chain the company is located. The OECD guidance distinguishes between upstream and downstream companies. “Upstream” includes actors from the mine to the smelter or refinery level. “Downstream” refers to retailers, including component and product manufacturers and original equipment manufacturers.[40]

Simplified, upstream companies should establish a chain of custody or traceability system to identify and assess risks of human rights abuse or contribution to conflict in the extraction or trading of the mineral. Upstream companies should then report on risks to their downstream purchasers, mitigate risks and disengage from actors associated with the most serious impacts. Smelters/refiners should have their due diligence practices audited by a third party. Downstream companies, such as brands and retailers, should identify smelters/refiners present in their supply chains, assess their due diligence processes, carry out spot checks and exercise their leverage over them as smelters/refiners can mitigate adverse impacts more directly. Both upstream and downstream companies should publicly report on their due diligence efforts.[41]

2. Background: the ICT sector and the Zambian mining context

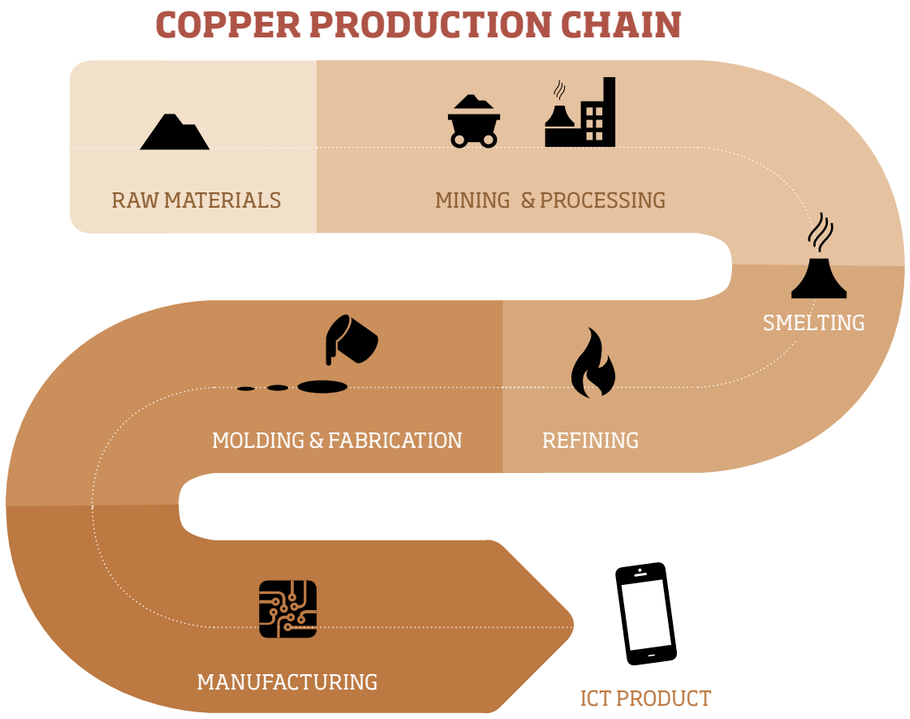
ICT products commonly contain a large number of minerals, extracted and sourced from all over the world.[42] Their mineral supply chains are complex, and include extraction, handling, transport, trading, smelting, refining, alloying, manufacturing of the component, final assembly and sale of the finished product.[43] This involves a vast number of business intermediaries that can be located in different parts of the world. For example, ICT company Hewlett Packard states on its website that the supply chain for conflict minerals[44] generally includes four to ten steps between the smelter that processes the ore and the final product.[45] Due to this fragmented supply chain, it is difficult to trace minerals back to specific mines. Furthermore, minerals from different sources are commonly blended together, typically at smelter or refinery level, which can take place far from the mine itself.[46]

Zambia is one of the world’s top producing countries of copper with growing output of raw and refined copper to the global market. Zambia’s mining context has historically been characterised by weak enforcement of environmental laws and insufficient monitoring of mining operations, which has enabled pollution of soil, water and air to occur over decades. The increase in foreign direct investments for land-use projects[47], including mining operations, has meant an upturn in involuntary displacement of communities that depend on the land for their livelihood.[48] Corruption is high and governmental oversight and accountability is low.[49] Based on these characteristics, Zambia can be considered to be a high-risk country with risks for human rights and environmental impacts associated with mineral extraction.

Copper in ICT

Copper is used to produce a vast number of goods, including ICT products. For example, there is more copper than any other metal in a smartphone.[50] As a superior conductor of electricity, copper and copper alloys are used in several components of ICT products, including printed circuit boards and semiconductors, wire, connectors, and transformers found in power cords.[51] Copper is also used in plumbing, construction and transportation, as well as in household goods such as cookware and health products. According to the industry organisation the Copper Development Association, electrical uses of copper, which include electronic devices, account for around three-quarters of global copper use.[52] Global copper demand has doubled in the last 25 years and is expected to rise by 43 percent by 2035, partly driven by the development of green technologies and electrical vehicles.[53]

Copper is more often recycled and reused than other minerals, as it does not degrade when processed. The International Copper Study Group estimated that around 29% of global copper usage in 2015 derived from recycled copper.[54]



The process of copper extraction

Copper production includes a number of steps from ore to finished goods. First, raw copper is mined from copper deposits, either through open-pit or underground mining. Both methods require heavy machinery to remove the sulphide or oxide ore from the ground, by blasting and grinding the rock. After processing, sulphide ore is mixed with water and chemicals to produce slurry - a semiliquid mixture - in order to produce copper concentrate. The concentrate is sent to a smelter for further processing and purifying. The oxide ores are processed through the method of leaching, and acids are used to dissolve the copper before it is further processed. The copper is then purified and moulded into sheets or distinct shapes that can be exported to the world market.[55]

Environmental impacts affecting human rights in copper mining

Large-scale mining produces vast volumes of mine waste. Every ton of copper extracted can generate as much as 99 tons of waste, mainly consisting of soil, rock and finely ground tailing material.[56] When piled waste rock from sulphide ores, like copper, come into contact with air or rain, sulfuric acid is generated that causes acid mine drainage (AMD). The acid can dissolve heavy metals such as copper, arsenic, cadmium and lead, which may reach and pollute ground- and surface water through

run-offs.[57] AMD may thus contaminate water and soil, and affect aquatic animals and plants.[58] Discharge of tailings (the muddy waste material left when the ore has been stripped of the metals) from mine tailing dams containing metal residue, acids and chemicals can also pollute waterways if not treated before release.[59] There have been reports of spills and broken tailing dams releasing thousands of cubic metres of mine tailings into surrounding waterways and land areas, polluting drinking water and destroying infrastructure, fishery operations and living areas for whole communities.[60] The discharge of polluted and acidic water into streams may also pollute soil along a stream. Soil used for farming may also be polluted when contaminated water is used for irrigation of crops.[61] Drinking water with high levels of heavy metals can cause cancer, heart disease, and damage to the kidneys, liver and skin among other health problems.[62] There is also a risk that heavy metals makes their way into food chains.[63]

In order to create a dry, workable environment, groundwater is pumped away from open-pit and underground mines.[64] Removing groundwater from a mine, so-called dewatering, risks creating heavy flows of water when discharged into surrounding surface water. Uncontrolled discharge can flood surrounding land, and if the discharge contains pollutants or sediment, this can cause poor water quality and siltation of the stream.[65] In addition, the industrial processing of copper requires large quantities of water, which can cause water shortages[66] or changes to groundwater flows.[67]

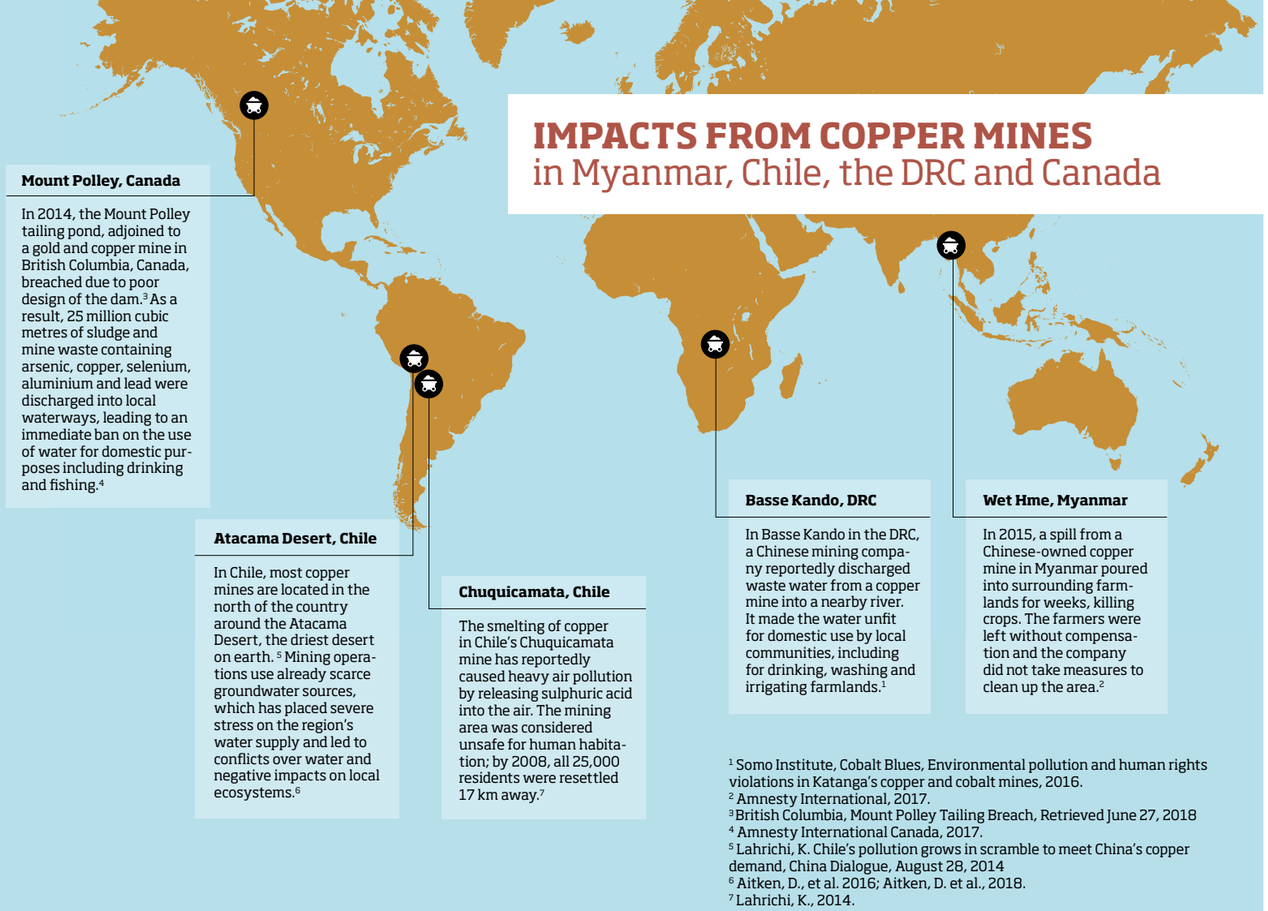
If not soundly managed, the process of smelting copper and other metals can also generate air pollution in the form of dust and the release of sulphur dioxide. Acid rain can be produced, which may impact soil, trees, animals, infrastructure and housing.[68] Sulphur dioxide is highly toxic: inhaling it can cause serious irritation of the throat and nose, breathing difficulties, water in the lungs, asthma and even death.[69]

FACT

Sustainable Development Goals and impacts from mining

Companies play an important role in fulfilling global agreements such as the 2030 Agenda for Sustainable Development and achieving the 17 Sustainable Development Goals (SDGs) adopted by UN member states in 2015. The 2030 Agenda aims to eradicate poverty and hunger, realise human rights for all, achieve equality and empowerment for women and girls, and ensure protection of the planet and its natural resources. The SDGs incorporate the global consensus that the economic, social and environmental aspects of development are interlinked and depend on each other.[70]

Mining companies' actions to respect local communities' right to livelihood, food security and access to clean water is vital to the achievement of the SDGs – not least SDG1, which aims to end poverty everywhere, and SDG2, which aims to end hunger, achieve food security and improve nutrition, and promote sustainable agriculture. The availability and sustainable management of clean water and sanitation is also a key goal. SDG6 addresses improved water quality by reducing pollution, eliminating dumping, and minimising the release of hazardous chemicals and materials.[71]



Socio-economic risks associated with large-scale mining

Large-scale mining projects have the potential to create wealth and bring development to impoverished areas through employment opportunities, improved infrastructure and social services.[72] However, studies have highlighted the risk that these benefits are unevenly distributed and do not necessarily accrue to local communities. One of the most significant risks associated with mining projects relates to the in-migration of (mostly male) workers and job-seekers to an area. Such an influx often stresses scarce resources such as land, water and social services, sparking social tension and disputes between migrants and community members. In-migration is also associated with an increased risk of the sexual exploitation of children, prostitution, and sexually transmitted diseases and teen pregnancies.[73]

New mining operations often involve the displacement of local communities. It is common that community members are resettled in areas without adequate resources, and displacement often jeopardises their access to land that they depend on for their livelihood and that they have strong cultural ties to.[74] According to the performance standard for Land Acquisition and Involuntary Resettlement developed by the International Finance Corporation (IFC), resettlement processes in rural areas are especially tainted by challenges concerning restoration of land-based livelihoods as well as the risk of compromising social and cultural continuity.[75] The "resettlement effect" includes the loss of assets such as houses, productive land and other sources of income. Resettlement may also cause a loss of cultural identity and social networks when communities are separated.[76] Crime, including gender-based violence, and alcoholism may also increase if demographics, social dynamics and norms are disrupted.[77]

In addition, large-scale mining in conflict areas or repressive regimes entails another dimension of human rights risks. For example, Amnesty International reported in 2015 that community members faced harassment, prosecution and possible imprisonment after protesting against human rights abuses and environmental impacts caused by a copper mining project in Monywa, in Myanmar.[78] In Mindanao in the Philippines, the Tampakan copper and gold mining project, still undeveloped, has met protests from local communities and indigenous people as they fear severe environmental impacts and displacement from their ancestral land. Military forces and para-military groups have reportedly cracked down on the protestors, killing anti-mining and indigenous leaders and their family members.[79] Conflict is also associated with the extraction of platinum in South Africa, another non-conflict mineral. There are testimonies of protests against mining operations being met with gun-fire from police and money from mining companies is used by traditional authorities to hire people to quell protests.[80]

Is copper a new conflict mineral?

The 3TG minerals, which refer to tin, tantalum, tungsten and gold, are widely used in ICT products and are broadly recognised as 'conflict minerals' regardless of where they have been extracted. The definition stems from the long-standing conflict in the Democratic Republic of Congo, where the illegal trade of 3TG has financed and fuelled conflict and severe human rights abuses against local communities. Abuses include murder, systematic rape and displacement. 3TG mining also reportedly supports conflict in countries such as Afghanistan, Colombia and Zimbabwe.[81] However, the extraction of other minerals relevant to the production of ICT products may also finance or contribute to conflict. The Dutch non-governmental organisation (NGO) Centre for Research on Multinational Corporations (SOMO) links the extraction of non-3TG, particularly copper, to violent conflict in 13 countries. SOMO found that copper was associated with conflict, in countries such as Colombia, the Philippines, Peru and the DRC.[82] The findings highlight the need for the broadening of the EU regulation on conflict minerals to include all minerals.[83]

FACT

Conflict minerals: two legal frameworks

In conflict and high-risk areas, the mineral trade may finance armed groups, underpin corruption and fuel forced labour and severe human rights abuses. Two legal frameworks have been developed to avoid sourcing of minerals that support armed conflict.

First, US Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act (commonly referred to as the Dodd-Frank Act) in 2010. Section 1502 of the act is a disclosure requirment that addresses the illicit trade in conflict minerals from the DRC and adjoining countries (the Great Lake Region). It obligates US publicly-listed companies to determine if their products contain conflict minerals, and to publicly disclose if any of the 3TGs originate from this area. If so, the company must report its due diligence procedures to determine the source of the mineral, processes and results, in order to ensure that the trade of the minerals does not support armed groups, to the Securities and Exchange Commission (SEC).[84] According to the Enough Project, a non-profit organisation, the Dodd-Frank Act should be strengthened with livelihood projects and other types of support to mining communities. Such provisions were included in the original conflict minerals draft legislation but were omitted from the final law.[85]

Second, the EU Conflict Minerals Regulation (passed in 2017, to come into effect in 2021) requires EU-based importers of 3TG to conduct due diligence in line with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, and to import 3TG minerals only from responsible and "conflict-free" sources.[86] The regulation does not focus on a particular country or region. The regulation has been criticised as it only concerns importers such as smelters and refiners and companies importing metal-stage products, omitting downstream companies importing mineral containing products, such as ICT brands and vendors.[87]

Risks and impacts in Zambia's copper mining sector

Zambia is rich in natural resources, and its GDP has overall increased in recent years. Still, more than half of its population lives in poverty. The World Bank classifies Zambia as a democracy, but its institutions are weak, with limited transparency and accountability.[88] According to Transparency International, widespread corruption is present in public institutions and remains a serious issue.[89] While most of the population still depends on farming, Zambia is experiencing rapid urbanisation and accompanying issues regarding a lack of housing, unemployment and growing slums in the cities.[90]

Zambia is home to the largest copper reserve in Africa and contains some of the worlds highest-grade copper deposits.[91] Small-scale copper mining goes back centuries, but Zambia's first commercial copper mine opened in 1928.[92] Since the mining sector was opened up to privatisation in the mid-1990s, Zambia has experienced an increase in foreign investments in mining operations, attributed to the beneficial context of low taxation and low political interference.[93] Copper, along with cobalt, constitute the key commodities for the Zambian economy. Copper production in Zambia has increased over the last twenty years, reaching almost 862,000 metric tons in 2018.[94]

FACT

Zambia

Population (2017): 17 million

Capital: Lusaka

Poverty headcount ratio at poverty line: 60.5 percent of the population

Literacy rate: 70.5 percent of total adult population (age 15 and above)

Corruption Perception Index score (2018): 35 out of 100 (0=highly corrupt)

UNDP Human Development ranking: 144 of 189 countries

Mortality rate attributed to unsafe water, sanitation and hygiene services: 34.9 per 100,000 inhabitants

Employment in agriculture: 53.3 percent of total employment

Employment in the mining sector (2012): 90,000

Source: UNDP (ND)[95]

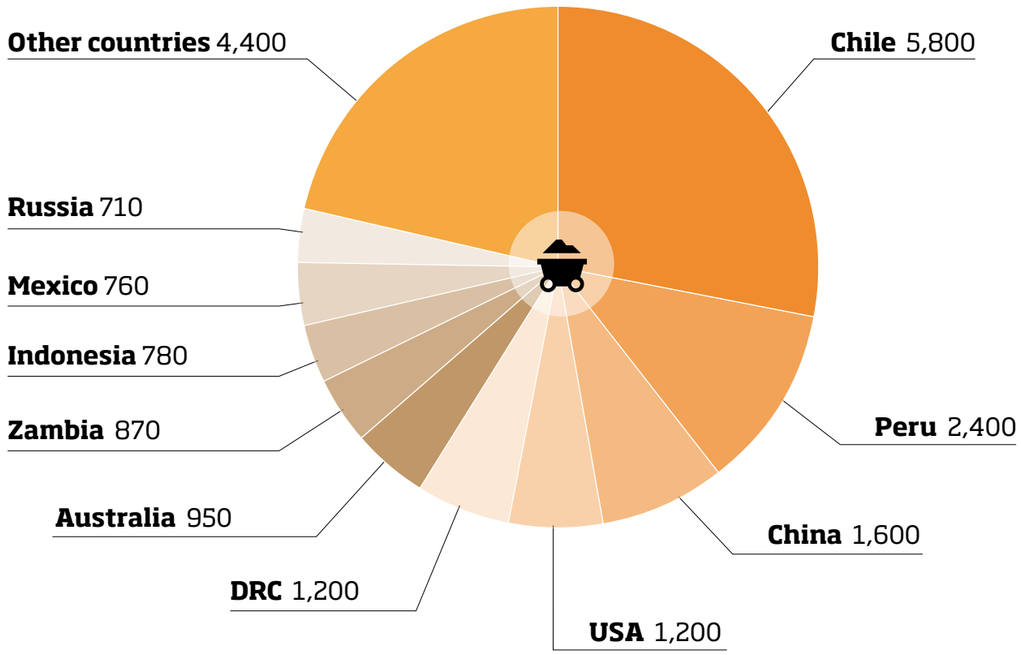
By 2018, Zambia was the seventh-largest copper producer in the world and the second-largest producer (after the DRC) in Africa.[96] In 2015, the Zambian export of refined and raw copper totalled a value of almost 7 billion USD.[97] China is the main destination for exports of raw copper; the United Arab Emirates and China are the main destinations of refined Zambian copper and copper cathode.[98] Zinc, gold, silver and lead are examples of other minerals extracted in Zambia.[99]

Large-scale land investments

In order to attract foreign direct investment, the Zambian government has increased the selling and leasing of customary land - which constitutes over 90 percent of the country's total land area – as well as statutory land, to large-scale land-based investments, including mining projects.[100] The increased revenue from mining and foreign direct land-based investment has produced economic growth that has decreased the urban poverty rate. However, the vast majority of Zambia's population has not benefited from this growth.[101] 60 percent of the population still lives below the poverty line.[102] According to the Center for International Forest Research (CIFOR), it is uncertain whether land-use investments such as mining have contributed to development as the majority of the Zambian population still live below the poverty line.[103]

Increased land-use investments in Zambia have also increased the resettlement of communities, not seldomly through forced evictions and a failure to protect community members' livelihoods.[104] Individuals who use and live on customary land often lack formal land tenure.[105] According to Zambian law, acquiring customary land for land-use investments only requires mandatory consent from local authorities and traditional chiefs, who are the appointed caretakers of land on behalf of the communities.[106] Thus, community members may be displaced against their will. The Institute for Poverty, Land and Agrarian Studies found that consultation and compensation

Estimated copper production 2018
(in thousand metric tons)



often took place *after* a displacement decision was taken in the mining operations they studied.[107] Although Zambia lacks a strong legal framework for resettlement and compensation, it does have policies and guidelines[108] in place that acknowledge that affected stakeholders should be consulted, have the right to suitable resettlement, and should be compensated for livelihood and lost assets at their market value. Their future economic and social wellbeing should also be safeguarded.[109] However, according to CIFOR, involuntary resettlement in Zambia often occurs without adequate consultation and compensation, and few efforts are made to ensure the communities' future well-being and livelihood.[110]

Pollution due to mining

For decades, large-scale mining of copper and other materials in Zambia has resulted in severe environmental impacts, including water and air pollution, soil contamination from dust and slag particles, and land degradation.[111] Pollution is highest in the Copperbelt Province, where most mines are located.[112] About 10,000 hectares in this

province are estimated to be contaminated by mineral waste,[113] constituting an environmental risk to the water, air and soil in surrounding areas.[114]

Water pollution linked to mining in Zambia is mainly caused by the discharge of toxic and acidic water and spills into water bodies, leaving elevated levels of dissolved copper and other elements. Siltation is another reported problem, caused by the dewatering of mines and the discharge of tailings into streams, which damages aquatic life and agricultural land.[115] Toxic leakage from mining operations has reportedly also polluted groundwater, impacting hundreds of people's health.[116] Air pollution is another concern and there are reported examples of release of sulphuric acids, causing severe respiratory problems, damage to buildings and soil pollution. Pollution of the air and drinking water is also claimed to have caused deaths.[117] Metal elements constituting a health hazard have also been found in the soil in the Copperbelt.[118] For example, the soil is heavily polluted by arsenic and other metals around the Chingola mining area.[119]

According to reports from the Swedish Geological Survey and CIFOR, Zambia's environmental protection regulation is relatively up to standard, but enforcement of the regulation has been weak overall. In addition, ZEMA, which is responsible for evaluating and monitoring the implementation of investors' environmental impact assessments, has been found to lack sufficient capacity to effectively enforce environmental and social safeguards.[120]

3. Swedwatch's investigation in Zambia

In 2018, Swedwatch visited two mining areas in Zambia to conduct research for this report. The field study aimed to identify potential human rights impacts of large-scale copper mining in Zambia. The focus-areas of the research were the issue of water contamination linked to copper mining and impacts associated with resettlement of communities when new mining operations are established in a rural context. The research included interviews with affected rights holders in the two mining areas as well as other key interviewees. Swedwatch contacted the two mining companies with questions regarding their practices to address identified risks and impacts. This was done after the field studies had been concluded in order to safeguard rights holders and other informant's safety and independent responses. The two mining areas visited were the following:

CHINGOLA

The city of Chingola, situated in the Copperbelt Province, hosts the Nchanga mine, owned by the Zambian mining company Konkola Copper Mines Plc (KCM). In Chingola, Swedwatch interviewed representatives from communities impacted by the mining operations in Shimulala, a farming village located just outside the city; Chabanyama, a community of farmers who used to grow vegetables on land that is now a mining waste dump on the outskirts of Chingola; and an area in the northern parts of



urban Chingola located adjacent to the mine pit. Swedwatch interviewed 47 persons, including community members and key informants such as teachers, community workers, community group representatives and community leaders. Swedwatch also spoke to the district commissioner in Chingola. The field trip in Chingola was facilitated by the Catholic Diocese of Ndola.

KALUMBILA

The district of Kalumbila, in the North-Western Province, is home to the Sentinel mine, which is owned by Kalumbila Minerals Limited (KML). In Kalumbila, Swedwatch visited two resettlement areas established around the mine as well as the rural village of Kawelanga. Swedwatch interviewed 55 persons in the area, including community members, clinic staff, community leaders and community group representatives. Swedwatch also interviewed several Lusaka-based civil society organisations that have followed the process surrounding the establishment of the Sentinel mine. KML is a wholly owned subsidiary to Canadian mining company First Quantum Minerals (FQM). For the purpose of readability and to avoid confusion, Swedwatch only refers to FQM in this report, which implicitly incorporates KML.

Chingola and the Nchanga mine

The town of Chingola, which has around 160,000 inhabitants, was founded in 1943 to serve the Nchanga copper mining operation established in the 1930s.[121] The Nchanga mine is one of the largest open-pit mines in Africa, stretching almost 6.5 kilometres across land and almost 500 metres below ground.[122] It has an underground mine, an open-pit mine and satellite pits. The processing plants include concentrators, a refinery, a smelter and a tailings leach plant in which copper is also extracted.[123]

KCM is one of Zambia's largest copper producers. It is a subsidiary of the global metal and mining company Vedanta Resources (79.4%) and co-owned with ZCCM Investments Holdings Plc (20.6%), which in turn is majority owned by the government-owned investment company Industrial Development Corporation Ltd.[124] Vedanta Resources became the main shareholder in KCM in 2004.[125] KCM also operates two other mines in the region.[126] According to the company website, KCM is one of Zambia's largest employers with 16,000 employees, 11 percent of whom are female. KCM extracts both copper and cobalt in Zambia, as well as pyrite. It also produces sulfuric acid, a substance used for fertilizers and other compounds.[127]

According to the company website, copper is smelted at the Nchanga smelter and processed into high-grade copper cathode at the refinery before it is exported, mainly to China and South-East Asia.[128] Cobalt is also extracted and processed at the Nchanga smelter into cobalt-copper alloys, which are then marketed to cobalt processing plants around the world, mainly in Asia.[129]

Water pollution

NGOs and media have previously reported that pollution from KCM's mining operations have affected communities in and around Chingola. Communities surrounding Chingola have claimed in news articles and reports that toxic spills and discharge of polluted and acidic wastewater have contaminated the Kafue River[130] – which flows through the Copperbelt Province and reportedly supplies 40 per cent of the country's population with drinking water[131] – and its tributaries, as well as the groundwater in boreholes, used for cooking, cleaning and irrigating crops.[132] According to the claimants, pollution has impacted their health, destroyed their farmland and lowered their crop yields.[133] In an article by *The Guardian* from 2015, villagers around Chingola stated that the acid spills and contamination of streams, boreholes and wells had become worse over time as the frequency and severity of spills had increased.[134]

According to Action for Water and Water Witness International, a 2014 Zambian government report stated that KCM's mining operations in Chingola regularly released effluents and discharge that contained copper, cobalt, sulphates, manganese, and other metals and solids that exceeded standard limits. KCM's mining operation has also been found to cause excessive siltation of the Kafue River and its tributary the Mushishima stream, which flows near Chingola, impacting aquatic ecosystems and agriculture in the area[135] and compromising the domestic water supply of over 100,000 of Chingola's residents.[136] The pollution of the Kafue River can be attributed to discharge from other industrial operations besides the Nchanga mine. However, an academic study from 2012 stated that the main source of pollution was the



The Mushishima stream flows just outside Chingola. Villagers have complained that discharge from the Nchanga mine has polluted the stream and soil along the riverbanks, resulting in negative impacts on crop yields. Heavy siltation is said to make the stream narrower each year.

Mushishima stream, which receives overflows of tailings and process water from the Nchanga mine's operations.[137] According to Foil Vedanta, a grassroots organisation that scrutinises Vedanta Resources, residents in urban Chingola said that piped water often smells sulphuric and that skin sometimes itches when using clothing washed in the water.[138]

In 2015, former Nchanga mine engineers told *The Guardian* that old infrastructure with leaking pipes, pumps and settling ponds had caused spillages and overflows reaching the Kafue River and the Mushishima stream. They also stated that pollution treatment systems in the plant were pushed beyond their limits in order to maximise output, and that frequent spills of slurry and effluents containing acid, lead, zinc, iron and mercury ended up in waterways due to power failure and deficient pumps.[139] Several claims of pollution and insufficient water management are reportedly backed up by both leaked internal documents and reports from national authorities.[140]

In 2015, approximately 1,800 farmers from the villages of Shimulala, Hippo pool, Kakosa and Helen in the Chingola district took their claims against KCM and Vendanta Resources to the UK high court. The claimants stated that the polluted water, caused by the mining operation in Chingola, had poisoned their water sources and farmland, causing illness and the loss of livelihoods.[141] According to The Guardian, a Zambian court had previously ordered KCM to pay approximately 1,5 million USD in compensation to 2,000 people who became seriously ill after consuming water polluted by a ruptured tailing pipe that had leaked highly acidic effluent into the Mushishima stream in 2006.[142] Following an appeal by the company, the compensation was, according to the article, reduced to "virtually nothing".[143]

SWEDWATCH FINDINGS: SHIMULALA

Shimulala is a village with approximately 125 households, located just outside Chingola by the banks of the Mushishima stream.[144] Its community members are traditionally dependent on farming,[145] and have for many years complained that KCM's mining operations have polluted the area's water and soil.[146]

Impacts on water and health

When Swedwatch visited Shimulala, community members said they had started to notice that there was something wrong with the water in 2005. They said they experience stomach aches and diarrhoea after drinking water from their wells.[147]

"If you drink the water, you don't sleep because you need to keep running to the toilet" one man in Shimulala told Swedwatch.[148]

Swedwatch was also informed that community members have experienced rashes from bathing and itching when wearing clothes that have been washed in the stream.

Interviewees said that when they complained to KCM about the water in 2010, the company installed boreholes in the area. However, the boreholes were closed by KCM and local authorities after the water was tested and confirmed to be polluted and acidic.[149] According to an article in *The Guardian*, a leaked letter from a KCM doctor in 2011 stated that water tested in boreholes and a stream in Shimulala was "unfit for human consumption" and that the impurities could cause cancer and create unhealthy conditions in internal organs.[150]

Community members in Shimulala told Swedwatch that they suspected that some people, including children, have previously died from drinking polluted water, but the local clinic did not provide a clear answer regarding the cause of death.[151] Similar claims from community members regarding deaths from drinking polluted water have been reported previously by the BBC and Foil Vedanta.[152] Community members also reported that ZEMA had taken samples of the water and soil without sharing the results.[153]

Swedwatch was told that there were boreholes with filters installed outside the school and the church. When Swedwatch visited the school, the borehole did not seem to be in operation.

Loss of income and food security

According to residents interviewed by Swedwatch in Shimulala, effluents from the mine have also impacted their farmland. A representative for the civil society organisation Catholic Commission for Justice and Peace, explained that farmland along the stream has been flooded with slurry and silt, discharged from the Nchanga mining processes, which contain high levels of metal residue. The effluents have subsequently contaminated the soil. The representative also stated that over time, the silt and slurry that have settled on the riverbanks have made the Mushishima stream shallower and narrower, which has also impacted the soil.[154] Swedwatch was also told that the soil had become polluted and infertile when water from the stream had been used for irrigation of crops.[155]

One woman in Shimulala told Swedwatch:[156]
"The soil has been destroyed, both along the stream and up the land. Even when you apply fertilizer you can't have a good crop."

A man from Shimulala said:
"The water and land are acidic. It doesn't grow. So as a result, we have poverty."

The loss of farmland and diminished crop yields have had impacts on the community's food security. One woman told Swedwatch that her family used to eat three times per day before their farmlands were degraded. Due to failing harvests, she now only eats once a day. Another woman who was breast feeding said her breast milk had dried up since she was not eating enough. She said she felt dizzy from not eating, still trying to breast feed.

"Sometimes, I feel it is better I am dead than alive", she told Swedwatch.[157]

Furthermore, the loss of a steady income has impacted families' ability to send their children to school. According to interviewees, KCM compensated some farmers for the loss of crops in 2009. Each household signed a paper and received 3,000–4,000 ZMW (about 300–400 USD). However, the compensation was perceived as far too

insufficient by the farmers. According to the interviewees, the money only lasted about a month since most people had to pay off debts and had large extended families to provide for.[158]

Interviewees in Shimulala also stated that there was no longer any communication with KCM since the community took its complaints to the UK high court in 2015. However, one teacher from the local school was more positive and said that the communication with the company was sufficient and that KCM responded to their requests for support, for example by providing footballs for the school.[159]

As a consequence of the loss of livelihood, community members said that girls as young as 14 or 15 years old were married off as their families could no longer support them.[160] A mother of three boys and four girls told Swedwatch:[161]

"Only two [go to school]. The girls ended up getting married after I failed to pay their school fees."

According to community members in Shimulala, the situation was also difficult for young men who used to farm for a living. Given the limited opportunities to earn an income, some have ended up in illegal mining and alcohol abuse.[162]

SWEDWATCH'S FINDINGS: CHABANYAMA COMMUNITY

Chabanyama is a community in Chingola. Community members have claimed that KCM's mining operations have adversely affected their livelihood. Since the 1960s, the community has cultivated land plots on the outskirts of Chingola, growing bananas, sugar cane, avocados and other vegetables for their own consumption and to sell at the markets of Chingola.

Loss of livelihood

Community members started to complain to KCM in 2001 as silt and slurry from a pollution control dam cut off water flow, flooding their farmland.[163] According to community members, KCM also dumped mine waste in the area between 2002 and 2012, burying farmland utilised by the community.[164] Interviewees said to Swedwatch that when the community complained, KCM responded that the plots were placed on company land.[165] One community leader also explained that acid had leaked from the waste dump and polluted the remaining farmland, negatively impacting crop growth. He further claimed that mud released from the waste dump during the rainy seasons had buried their plots and the stream and irrigation canals, making the area unfit for farming.[166] Consequently, many community members struggle to provide for themselves. This has in turn affected their food security and their ability to send their children to school. One young man told Swedwatch: [167]

"Since 2012, we have really been suffering. We cannot pay for school or for our kids. Our children are just home. We do not have enough money. We have no land where we can grow. We cannot pay for accommodation, electricity and water bills. We are stranded. I used to have good grades in school, but I cannot afford to study."

According to interviewees, both KCM and ZEMA have tested the soil, water and crops without sharing results with the community.[168] In 2014, the company compensated the community for the loss of land: according to community representatives, 393 households received a one-off sum of 1,400 ZMW (around 140 USD) each. They also stated that the level of compensation was decided by KCM and that the amount was far from enough as it was the equivalent to one week of income from selling crops.[169] One community leader said it was difficult for community members to find land elsewhere, as land is often already utilised by other farmers who demand rent to access the land, which community members cannot afford.[170]

Community members also explained that their socio-economic situation has led to an increase in early marriages and teen pregnancies, as well as increased alcohol consumption among youths. Levels of crime, abuse and illegal mining had also increased.[171] Swedwatch was not able to verify these claims with local authorities.

Cracked houses and pollution in Tsopano in Chingola

In Tsopano, located near the edge of the Nchanga open-pit mine in northern Chingola, community members have experienced increased cracks in the walls of their houses. According to a representative of the organisation Catholic Diocese Ndola, which works to support communities in the area, the cracks are caused by blasts in the mine and there is a risk that the buildings will collapse. According to the representative, the community members, especially the children, also experience respiratory problems and coughing due to dust coming from heavy trucks that pass routinely.[172]

In a letter from KCM to the Municipal Council in Chingola dated August 2018, KCM stated that it will provide for the relocation of 100 affected families living in cracked houses. However, the letter stated that the company will not accept any liability for the cracked houses, and that this support is instead based on humanitarian grounds.[173]



Residents in Tsopano in the northern parts of Chingola live just by the edge of the Nchanga pit. A representative from Catholic Diocese Ndola explained that houses have cracked due to heavy blasting in the mine. 100 households will be relocated, supported by the mining company KCM.

KCM's policies and actions to address impacts

KCM did not respond to Swedwatch's repeated attempts to establish a dialogue regarding the findings presented in this report or concerning the company's strategies to identify and address actual and potential impacts in Chingola. In order to retrieve information regarding the company's policies and actions to address risks and impacts, Swedwatch has reviewed publicly available information presented by KCM or its parent company Vedanta Resources, as well as news articles. The section below summarises the information.

According to KCM's Health, Safety and Environmental (HSE) Policy, the company's aim is "zero harm to people and minimal discharge to the environment" and that it strives to avoid, reduce or mitigate the environmental impacts to neighbouring communities."[174] In KCM's Water Management Policy, the company states that it strives to "avoid pollution of surface water, ground water and other water resources and that water/wastewater storage facilities are maintained".[175] In its Human Rights Policy, KCM declares that it strives to respect the communities' human rights and to work and communicate with all stakeholders on the performance. KCM also declares that it will measure and report progress against the policies.[176] According to its website, KCM is accredited by the British Safety Council ISO 14001 environmental standards.[177]

According to news reports, KCM denies that it has failed to keep critical equipment up to standard or that leakage and spills in Chingola would be a result of this.[178] On the company website, KCM states that it inherited mining operations that incorporated "many legacy environmental issues" and that KCM has acted to address them since Vedanta Resources acquired the company. On its website, the company also states that all of its processes ensure minimal environmental pollution and damage and that it runs a comprehensive programme with particular focus on areas impacting surrounding communities.[179] The programme includes a new smelter in Chingola, which is supposed to capture 99.6 per cent of the sulphur dioxide, and a new concentrator at the Nchanga plant which is to achieve "zero discharge" to the environment.[180] On its website, KCM also mentions the revamping of pipes and dam catchment, in order to reduce run-offs.[181] KCM told the BBC in 2015 that it had spent 530 million USD to improve the environmental performance of its operations, which included the replacement of slurry waste pipelines to the Pollution Control Dam.[182] In 2017, KCM declared that it had invested 30 million USD in the Tailings Leach Plant process lines and tanks, and two million USD to desilt the Pollution Control Dam, stating that the investments took care of most of the "legacy environmental issues".[183] Vedanta Resources has stated it will review KCM's environmental projects.[184]

The Vedanta Resources Sustainable Development Report 2017/18 states that "due to water pollution challenges, areas of improvement have been identified and strategies to mitigate the risks are in the process of development". The report also states that a tailings management standard has been developed to ensure sound dam management practices, as well as third-party inspections to critical locations present in their mining operations.[185]

According to KCM's website, since 2005, the company has invested more than 150 million USD into CSR-programmes in its operational areas in Zambia. KCM states that it finances schools, hospitals, clinics, daycare centers as well as educational programmes and support of livestock and income-bearing programmes for youths and women.[186] According to Foil Vedanta, investments have included the building of a clinic and a bridge as well as the provision of 150 cattle to local cooperatives in the Shimulala community.[187] While there, Swedwatch also noted that the clinic in Shimulala was built by KCM. In public information, KCM states it has provided clean drinking water facilities in 13 public schools.[188] This includes Shimulala.

In 2018, Vedanta Resources announced that it will invest 700 million USD into KCM, including investments in health, education, poverty eradication and sustainable livelihoods.[189]

Swedwatch's comment to findings and KCM's actions to address impacts

KCM reports environmental investments in its public information, and KCM's parent company Vedanta Resources highlights that there are existing strategies to mitigate risks. Due to lack of dialogue, it is however unclear to what extent, and with what result, KCM's actions and strategies address environmental and human rights risks and impacts in Chingola. From this perspective, the lack of information provided is in contrast with the UNGPs' principle of transparency towards stakeholders. The lack of information also appears to be in breach of KCM's own Health, Safety and Environmental Policy and Human Rights Policy which both state that the company will measure and report progress and communicate with all stakeholders.[190]

Based on Swedwatch's findings, it is not evident that KCM's claimed mitigative actions and environmental investments have had positive results. The low transparency and lack of dialogue regarding the company's action plans and following results hinders further evaluation. However, findings from Swedwatch's research and field study in the Shimulala and Chabanyama communities indicate that KCM has not managed to protect water sources utilized by community members in Chingola from pollution. Thereby, KCM's mining operations seem to have caused impacts on water as a human right as stipulated in the declaration by the UN General Assembly, making the water unsafe and of an unacceptable quality. The previously reported inadequacy in wastewater management indicates that the company has not fully complied with the IFC guidelines which state that drinking water must be protected and that adverse impacts on groundwater and surface water must be prevented when wastewater is discharged. Furthermore, the findings from Chingola indicate that the company has failed to adhere to its own Water Management Policy.

The claimed pollution of water, and waste disposal, has also impacted soil and affected community members' livelihoods and abilities to farm. This has subsequently impacted their rights to food and education. KCM's strategies and routines to address impacts on human rights, and their realisation of human rights due diligence in accordance with international standards remain largely unclear. Though KCM reportedly has provided several CSR-investments in Shimulala, it was not evident that the

rights holders interviewed by Swedwatch in Shimulala were benefitting from them as community members stated that they still struggle to provide for themselves due to loss of farmland. From this perspective, Swedwatch's findings indicate that KCM has failed to avoid and prevent human rights impacts in line with UNGP stipulations. The findings also imply that KCM has failed to adhere to its parent company's HSE Policy, its own Human Rights Policy as well as the aim of zero harm to people and zero discharge to the environment.

According to interviewed community members, KCM has provided remedy in the form of compensation to farmers in both Chabanyama and Shimulala communities. Providing remedy is in line with the UNGPs' principle of remediating impacts when they are caused by the company. However, interviewees state that compensation has not been sufficient to restore community members' situation and livelihood, and it is not clear how compensation was calculated.

According to Swedwatch's findings, KCM has not shared test results of soil and water with affected stakeholders. The communication from KCM's side with the Shimulala community has seemingly decreased or halted after the case went to court. The Chabanyama community's situation is considered to be a closed case by KCM according to community members. Consequently, Swedwatch findings suggest that KCM has not been communicative and transparent in relation to its stakeholders, as the UNGPs' principle of "know and show" prescribes. The lack of transparency and sharing of results with stakeholders also contradicts KCM's own HSE Policy and Human Rights Policy. Swedwatch also noted that the seemingly low level of transparency and communication is in contrast to the UN Global Compact CEO Water Mandate's[191] statement that there is a particular need for transparency in situations where there is a history of distrust and high risk of severe impacts.

Kalumbila and the Sentinel mine

Kalumbila district is a remote area of the North-Western Province of Zambia, located in the Musele Chiefdom approximately 150 km outside the town of Solwesi.[192] Residents have traditionally depended on farming, keeping livestock and bees, fishing, collecting mushrooms and other non-timber products from the forests. In 2010, the Canadian mining company First Quantum Minerals (FQM) acquired a prospecting licence to establish the Sentinel copper mine in the area.[193]

The Sentinel mine and Kalumbila Minerals Limited

The Sentinel open-pit copper mine is owned by Kalumbila Minerals Limited, a subsidiary of FQM. The construction of the mine started in 2012 and commercial operations began in 2016.[194] According to the World Copper Factbook 2017,[195] it is one of the top 20 copper-producing mines in the world in terms of capacity and produced more than 190,000 tons of copper in 2017. Its output is expected to increase[196] and its open-pit will stretch to a maximum of 5.4 km x 1.5 km and run 373 m deep.[197] The Sentinel mine is expected to remain in operation until at least 2033.[198] In its 2017 annual report, FQM states that the mine employs 2,507 people.[199]

Resettlement of community members

According to Caritas Norway, a civil society organisation, the establishment of the Sentinel mine required the resettlement of 570 households, approximately 4,000 people, of which 1,400 were farmers. Others were beekeepers, livestock keepers and job-seekers.[200] ZEMA approved the resettlement plan in 2013. 21,000 people were expected to be impacted by the establishment of the new mine.[201] In the absence of a clear national legal framework for resettlement and compensation, FQM explained to Swedwatch that the company followed the International Finance Corporation (IFC) Performance Standard on Land Acquisition and Involuntary Resettlement and that the resettlement process was carried out in a consultative manner and conducted together with a working group on compensation that included relevant government representatives, local traditional authorities, community representatives and NGO World Vision. As per FQM's public information, an independent audit - conducted in 2015 - concluded that the process had largely "exceeded best practice of resettlement" siting larger houses, facilitation of land title deeds and opportunities to take part in livelihood restoration programmes for a number of years.[202]

According to Swedwatch's interviewees, community members who were to be relocated were given two choices: to remain as farmers and move to the southern resettlement area, where they could access land to continue cultivation of land, or move to the northern resettlement area, where they would provide for themselves in another way, as there were smaller plots of land for cultivation (40 x 40 m including housing units). All resettled households were to be compensated, provided with new, improved housing, health clinics and schools, and were to be given access to employment and training.[203] In order to manage potential overcrowding of the district, the new town of Kalumbila was established, including the construction of new houses, service facilities, schools, a health clinic, power grid, roads and an airport.[204]

SWEDWATCH'S FINDINGS IN KALUMBILA

In order to examine the extent to which communities near the Sentinel mine may have been impacted, Swedwatch interviewed residents in the two resettlement areas. Interviews were also conducted in the village of Kawelanga and the town of Kisasa, both located in Kalumbila district in the proximity of the mine.

Challenges regarding livelihood restoration and food security

When Swedwatch visited the southern resettlement area, relocated community members expressed concerns about their new situation. A key concern related to decreased access to markets. Residents who chose to move to this area to continue farming were provided with access to customary land[205] to provide for themselves. In their old village, community members had been mainly farmers who earned an income by growing crops that they then sold along the nearby busy road. However, according to interviewed community members, the southern resettlement area is located far from any market or main road, making it difficult to sell crops and vegetables. Furthermore, the population of the resettlement area is much smaller – 1,619 residents, most of whom are unemployed – which has negative impacts on purchasing power. A marketplace has been provided by FQM in Kalumbila town, but interviewees

explained that it is too far to make it profitable to go there by local transport and sell crops. Interviews with independent organisations operating in Zambia confirmed that community members attribute decreased income levels to worsened access to markets and busy roads. Two women with five and seven children, respectively, told Swedwatch that they and other families in the community struggled to sustain their children in school as their business no longer generated the income it used to (see company response in page 47).[206] In addition, community members said they can no longer access the forest to source wild mushrooms and other items as the area is restricted by the company. Community interviewees also said they cannot access the fishing dam provided by FQM, as fishing is restricted to an area far from where they live.[207]

In the northern resettlement area, interviewed community members were also concerned about decreased livelihood opportunities. The people who chose to move to the northern resettlement area were expected to be able to provide for themselves through means such as trading, instead of farming. However, several community members stated that they had not been able to find work as expected. Some interviewees also said that due to unemployment and diminished access to farmland, community members' income levels have decreased compared to levels prior to the relocation.[208] A few interviewees said that they had been promised four hectares of farmland by the company, but that this had not yet been forthcoming.[209] Swedwatch was also told that the influx of salaried mine workers had driven up prices in the local market, thereby restricting community members purchasing ability.[210]

Swedwatch was also told by interviewees that there was an issue of food insecurity in the northern resettlement area. One woman told Swedwatch that, given the lack of opportunities to work or farm, some people have resorted to begging landowners in other communities for pieces of land to cultivate. But the yields of such cultivation are insufficient:

"This is causing trouble for our children", she said, *"because we do not have enough food to feed them".*[211]

Interveiwees stated that they were worse off after the resettlement. Based on what the company had told them, they expected development, employment and other benefits. Many felt cheated of the development they felt they were promised. One woman in the northern resettlement said:[212]

"We came from better life to a worse off situation. The operations of the mines have brought us misery."

Another woman in the northern resettlement area said:[213]
"This area has become the economic basket of the nation. Unfortunately, the money coming from the resources here are enriching and developing other areas. The source of the mineral wealth has been subjected to poverty. Why is this?"

Community members interviewed in both areas by Swedwatch described that they had been promised employment once they had resettled. Instead, the interviewees concluded, the mining company mostly recruited job-seekers that had migrated from



Resettled community members were compensated with new houses of improved standard. However, the houses were not constructed in accordance with customary traditions as families normally live in separate buildings, instead of in one building all together.

the Copperbelt Province, with the argument that the mine operations require skilled workers.[214] During the mine construction phase, people were offered short-term employment to do heavy work such as bush clearing.[215] However, they were laid off when their contracts ended.[216] Community members expressed that they were subjected to unfair recruitment practices by the middle management at FQM and that even educated people from the area experienced difficulties in finding employment[217] (see company response page 48).

Insufficient compensation

According to interviewees and previous reports, FQM compensated the resettled community members with new houses with iron roofs,[218] 40 x 40 metres plots and cash for lost assets such as crops or disturbance of business. Community members interviewed by Swedwatch in both resettlement areas said they were disappointed with the cash-compensation provided. Interviewed community members said they personally received a one-off payment of between 3,000 and 29,000 ZMW (300–2,900 USD), depending on their crop assets and other properties.

Mwiya Mwandawande, national coordinator at the Lusaka-based NGO Extractives Industry Transparency Alliance (EITA), agreed that the compensation was insufficient and that this was because government guidelines provided to FQM were based on calculations that did not safeguard sustainable compensation packages. He explained that community members were not able to assess whether the compensation rate was reasonable, partly because Zambia lacks clear judicial regulations regarding compensation and resettlement.[219] In addition, the coordinator noted that when compensation was issued as cash, some community members spent it on vehicles that later broke down, and other consumer goods, instead of making more sustainable investments[220] (see company response page 48).

Traditionally, the homes of community members in Kalumbila consist of more than one house unit in order to provide housing for older children and extended family. Thus, the single-building house model provided by the company was not in line with traditional needs and practices. Interviewees complained that all family members now have to live in the same building, though FQM had added rooms to the houses, and that the plots provided were too small to add houses.[221]

Social impacts affecting women and children

According to interviewees, men in the northern resettlement area consume more alcohol than prior to resettlement. As men are traditionally the main income earners in the community, this in turn impacts women and children negatively as limited income is spent on alcohol instead of food.[222] Two women residing in the northern resettlement area explained:[223]

"The women are suffering, and the children are suffering the most. They fail to have three meals a day as the money the father makes is spent on beer. We had enough food in the old place. There was alcohol but moderate drinking, it was gentleman behaviour."

Swedwatch was told that since the mine was established, crime and violence have also increased in the town of Kisasa, as well as prostitution, which has led to a rise in sexually transmitted diseases (STDs).[224] A community worker said that teen pregnancies, STDs, theft and prostitution had increased in the northern resettlement area as a result of the influx of male miners.[225] According to community workers in the northern settlement, the large influx of job-seekers with families has also meant that there is an over-enrolment of students in the school. For example, one class consisted of 117 students with one teacher, at the time of Swedwatch's field study. Swedwatch was told that the standard is usually 40 students per class.[226] The influx of job-seekers to the area has also affected the schools in the nearby town of Kisasa. According to community representatives, one class in Kisasa consists of as many as 170 pupils, resulting in difficulties for educators to maintain the students' concentration. The effects are especially negative for students with special needs in their learning process.[227] Swedwatch was not able to confirm the information regarding social impacts and over-enrolment with local authorities (see company response in page 47).

FACT

Standard of resettlement and compensation

According to the FQM Sustainability report, FQM applied the International Finance Corporation's (IFC) performance standard five (IFC PS 5) on Land Acquisitions and Involuntary Resettlement during the resettlement process in Kalumbila.[228]

A key objective of the IFC PS 5 is to restore or improve livelihoods and standards of living of those who are displaced.[229] In short, business actors should avoid or minimize adverse social and economic impacts by:

- offering compensation, for loss of assets at full replacement cost (such as land, crops, irrigation infrastructure, commercial structures)

- improving living conditions by providing adequate replacement housing (or cash when appropriate) with security of tenure

- making sure that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected and establish a grievance mechanism

Displaced people whose means of livelihood and levels of income are adversely affected, should be provided with "opportunities to improve or at least restore their means of income-earning capacity, and production levels."[230] The IFC guidance note acknowledges that the transition from land-based livelihoods to non-land-based livelihoods is "extremely challenging". However, when land is not the preferred option, other options, such as employment opportunities or assistance to establish businesses, should be explored, in addition to cash compensation.[231]

According to the IFC standard guidance note, adequate housing can be measured by (among other things) its quality and cultural appropriateness and should allow access to employment, markets and services.[232] The IFC Handbook on resettlement planning highlights that location and community preservation is critical when choosing a resettlement site. Choosing a site where communities can access land, water, employment, and business opportunities is key in order to restore livelihoods. Breaking up communities should be avoided, as social networks in the affected communities may be important to maintain for the community members to be able to adapt to the new circumstances.[233]

The IFC standard states that the company should engage with affected communities and other stakeholders throughout the resettlement process and establish a grievance mechanism. The company should share information that informs the affected communities about risks and potential impacts and which mitigation measures the company is taking.[234]

The business actor should create a resettlement action plan (RAP) to manage the resettlement. In the IFC handbook on resettlement, it is recommended that the RAP contains a plan to manage in-migration.[235]

Social tension and disruption of traditional structures

Interviewed community members stated that there exists social tension between people who are employed by the mining company or contractors and those who are unemployed. This strains relationships within the community. Furthermore, the move from the original village to two separate resettlement areas has split families geographically. As a result of the resettlement and its economic impacts, family members living in different resettlement areas were said to generally have the chance to meet only once or twice per year, or even less frequently. Interviewed community members lamented the break-up of social and traditional structures, and worried that the younger generation would grow up without learning traditions that used to keep the community together, and without knowing close family members who live in the other resettlement area.[236] One man in the southern resettlement area told Swedwatch:[237]

"We have been put in a mixed society with no rules or control of the situation. All of these injustices were brought by the mining activities. They have destroyed the order of our existence."

Benefits from the mining operations

Interviewees also noted positive impacts from the mining operation. Interviewees highlighted examples of FQM's investments in corporate social responsibility (CSR) programmes, including support for businesswomen, conservation farming programmes and agricultural inputs such as fertilizer, seed and cassava cuttings provided as soft loans. Interviewees also noted the establishment of new school buildings, school furniture, clinics and health programmes provided by the company.[238] One woman in the northern resettlement said:

I appreciate the things the company has given us. They put up the school blocks, the clinic. That marks the process of development. The infrastructure development was slow in the old place."

Swedwatch was told by interviewees that the government's failure to provide public services has made the communities highly dependent on voluntary CSR projects provided by FQM.[239] This view was acknowledged by Mwiya Mwandawande, national coordinator at EITA, who said the government abandoned its social investments in the area due to the mine's presence.[240]

The Trident Foundation, established by FQM to manage its CSR projects, incorporates the function of a grievance mechanism in that it receives and addresses community complaints. Community members said they mainly raise their complaints with the Musele Task Force - a grassroot organisation working as an intermediary between the communities and the mining company - or community leaders, who then engage with the Trident Foundation. While some interviewees asserted that FQM addresses the issues and complaints raised by community members, others said the dialogue with the company has decreased over time. Swedwatch was informed by one community representative that the dialogue had worked well and that FQM was willing to discuss ways to resolve issues, such as the company's efforts to address the water quality in boreholes.[241] One community member who was relocated to the southern resettlement concluded:

"Some things [FQM] is really doing. But we are looking at the past. The recovery of what we have lost."

Claims of water pollution and dispute stopped community water project in Kalumbila district

In the two resettlement areas, people depend on water from boreholes provided by FQM. Community members told Swedwatch that they used to have clean water in their original village.[242] In the new areas, all community members interviewed by Swedwatch claimed that the drinking water was of bad quality and caused stomach aches and diarrhoea. In another village close to the mine (Kawelanga), interviewees expressed identical concerns. The community members Swedwatch interviewed suspected that this was due to the Sentinel mining operation.[243]

In July 2018, a water committee with representatives from the community, ZEMA and FQM jointly tested the water in five boreholes for heavy metals, acidity and bacteria. The documentation from the testing was shared with Swedwatch. Results showed that the water in three of the samples contained levels of iron above limits, almost 33 times the Zambian statutory limit in one case.[244] FQM shared a document on the Zambian government's position on the water quality in the tested boreholes. In the statement, the government concluded that investigations confirmed that there was no cause/effect relationship between the mining activities in Kalumbila and the water contamination and that the elevated levels of iron in the water came from high iron-levels in the soil.[245] As a mitigative action, FQM has initiated the process of drilling deeper boreholes to bypass the upper soil layer that contains iron.[246]

Community members in Kawelanga also told Swedwatch that they had noticed the groundwater table rising in their wells and water seeping up from below ground. They suspected that this was caused by flooding of the nearby tailing dam and a fishing dam, which in turn affected underground streams. The community members said the flooding had destroyed their harvest of cassava, maize and bananas, which they depend on for their livelihood. Community members showed Swedwatch cassava and maize unfit for human consumption and one of the community's spokespersons explained that the whole community was on the verge of starvation due to the loss of crops. The villagers told Swedwatch that groundwater had also flooded an important traditional graveyard and that they had never experienced anything similar before.[247] According to a news article, FQM explained that the flooding was due to heavy rainfall during the rainy season and clearing of vegetation for farming, and that the flooded area was uphill from the mine.[248] The statement was supported by the Government in its concluding statement.[249]

Within the scope of this report, Swedwatch has not reviewed technical geological studies in order to assess the Zambian Government's conclusion. However, initial contrasting views caused tension between community members and the company – this seems to have abated, however, once explanations were offered.

Due to the community members' allegations concerning water, FQM initially halted a water programme that would provide new boreholes to communities. According to the manager at Trident Foundation, the aim of installing new boreholes was to meet the increased need due to the influx of people to the area, as there is a lack of government investment. Swedwatch was later informed by FQM that the water programme had been resumed as the issue was resolved. The case points to the community members' high dependency on company CSR programmes and the fragility of such investments if disputes arise.



The population in the northern resettlement area is a mix of resettled community members and in-migrating job-seekers and mine workers. According to interviewees, in-migration has led to over-enrolment in the local school and there is a change in social structures and norms.

FQM's policies and actions to address risks and impacts in Kalumbila

FQM has publicly declared its ambitions regarding community development and engagement. Its website states that FQM "aim to improve the quality of life in our host communities".[250] In its Social Policy, FQM states it recognises that "people and communities affected by our business should benefit through opportunities such as employment, business development, education, training or community investment over the long term" and that it "commit to local communities' participation in our workforce through employment and contracting opportunities". The policy also states that FQM "seek to consult and resolve grievances in a timely, interactive and culturally appropriate manner."[251]

Livelihood and food security

FQM's livelihood restoration programmes in Kalumbila include a variety of measures, including programmes on conservation farming to enhance crop yields, local business development, forest management, the construction of a fish-dam and a sawmill, education and health support. According to the company, its continuous monitoring of all community projects shows significant improvements regarding factors such as health, education and employment levels in comparison to before resettlement. FQM shared supporting documentation with Swedwatch, including documentation showing significant improvements in school grades, malaria prevalence and maize yields.

According to the Corporate Manager of Community Relations at FQM,[252] interviewed by Swedwatch in February 2019, livelihood restoration has however been a challenge since the inception of the resettlement process due to the complex preconditions of climate irregularities, poor market linkages, poor infrastructure networks and access to basic services in the region. As one of several measures to address the concern, FQM has employed five agricultural specialists that offer support to community members. Following a company visit to the two resettlement areas in late 2018, FQM noted that the general conditions of the communities were not up to standard and that agricultural output was low. As a mitigative action to further strengthen its efforts around livelihood restoration, its agricultural programmes and to address the issue of food insecurity, FQM committed to support the establishment of kitchen gardens for all households in the resettlement areas during 2019.[253]

In addition, each household in the northern and southern resettlement has been allocated four hectares of farm land located a few kilometers away from the northern resettlement. The plots have been available since 2015, but most of them are not utilized due to cultural constrains as the plots are not placed on customary land. FQM is engaged in dialogue with the Paramount Chief and local authorities to resolve the matter.[254]

According to FQM, the company has offered the necessary means for community members to pursue farming, but the number of community members interested in agricultural activities is limited. During Swedwatch's interview, FQM recognized that livelihood restoration remains a challenging issue but the company maintained that community members would be able to sustain themselves if they made use of the several support options which are at their disposal.[255]

Access to education

According to FQM, there is a significant improvement from pre-resettlement conditions regarding access to primary level education where the majority (81%) of children of school-going age had no access to any form of education. Access to secondary and tertiary education remains limited, however, due to the distance to schools and associated costs. Company representatives declared that FQM is committed to supporting the provision of secondary schools in Kalumbila if the government decides to establish them in the area. In March 2019, FQM announced the opening of a new school in the Kalumbila District. According to the press release, the new school will make it easier to attend school, as long distances has led to high dropout rates and absenteeism by pupils in communities near the mine.[256]

In-migration

FQM acknowledged that in-migration to the three mining areas in Kalumbila is linked to a number of challenges, including over-enrolment in schools. The company expressed the concern that "the more services FQM supports, the more in-migration we see". The company also raised that social services are foremost a government responsibility that the company supports.[257]

Employment opportunities

According to the company, an additional challenge concerned the management of community members' expectations around employment opportunities. In its interview with Swedwatch, FQM stated that FQM's team carefully explained the advantages and disadvantages of each resettlement area, including the risks of not accessing employment and the distance to the local market. FQM states that this was done in the local language and at household level during the consultation process. FQM also explained that the company at no point made promises of employment opportunities in the mine. The Corporate Manager of Community Relations at FQM also stated that the company has a transparent local hiring program where everyone has equal opportunities to access jobs.[258]

FQM states that it would prefer to hire exclusively from the local workforce as it would curb in-migration. Due to provisions in Zambian law however, the company is not allowed to favor local ethnic groups in its hiring processes but must ensure a broad ethnic representation in its work force. There may also exist a risk of creating conflict between different ethnic groups if one group is favored. FQM has, however, been granted certain flexibility to recruit locally. The company's own socio-economic data shows that employment rates in the northern resettlement has increased from one to ten percent since 2010, and 19 percent of the workforce in the mine are from the resettled community. The company stated that due to delays of the government's plans to issue title-deeds and establish a multi-facility economic zone in the area, investments - which potentially would create 1,700 jobs – have to a large extent remained unrealized.[259]

Compensation

FQM stated it considered the compensation rate suggested initially by the government was too low and was not calculated to cover the replacement value of the community members lost assets. Therefore, the compensation rate was re-calculated. According to FQM, in addition to in-kind compensation, the company followed the IFC standard to determine cash-compensation rates for community member's loss of crops and that the average household resettlement for the project was 63,974 ZMW (6,400 USD), considerably higher than other recently granted compensation packages in Zambia. The compensation rates were calculated to cover costs such as transportation, labour and land preparation, as well as the market value of one set of crops and one harvest. The company tried to offer alternatives to cash hand-outs, but decided to respect community members' expressed wish to receive compensation in cash. Individual compensation was provided on top of the community investment programmes such as livelihood restoration, health and education.[260]

Social structures

To avoid potential social tensions as the original community was about to be split into two new communities, FQM collaborated with the community members traditional leaders and other stakeholders to identify traditional and social networks of the original community. The southern resettlement area was designed according to the traditional structures in the original community. According to FQM, the company offered every opportunity for families to stay together and it has solely received positive feedback in regard to the division, as "families are now able to take advantage of opportunities in both areas".[261]



FQM has invested in several CSR and community programmes, including schools, health facilities and trainings on conservation farming. In February 2019, FQM stated it will establish kitchen gardens in order to address the issue of food insecurity in the northern resettlement area. PHOTO: SWEDWATCH

Swedwatch's comment to findings and FQM's actions to address impacts

It is commendable that FQM has shown transparency in information-sharing and openness in communication with Swedwatch. This is in line with the UNGPs' principle of transparency. However, FQM declined to share its resettlement action plan with reference to that the document included personal data. FQM also declined to share audit reports with Swedwatch as they are internal documents. Swedwatch could not access the resettlement action plan through ZEMA, as suggested by FQM. ZEMA did not respond to Swedwatch's inquiries.

It is encouraging that FQM has acknowledged the importance of taking on a constructive and inclusive approach towards local communities and has created a grievance mechanism in line with IFC standards. Further, it is positive that FQM has provided compensation to resettled community members, developed community investment programmes and made investments in infrastructure with the objectives of long-term development, community resilience and livelihood restoration.

However, despite the company's efforts problems remain. The establishment of the Sentinel mine highlights the complexity and common challenges of large-scale mining projects in a rural poor area with low governmental presence, where communities' livelihoods are traditionally land-based. The company and interviewed community members apparently have different views of the outcomes of the resettlement and the opportunities that are available to the community members. There are also opposing views regarding what was promised in terms of benefits during consulta-



The UN General Assembly has declared that access to clean water and sanitation is a human right and that clean water is a precondition to the enjoyment of other human rights. For example, water pollution from mining may impact people's health or jeopardise their right to food, when crop are affected by polluted water. Photo from Shimulala.

tions. Community members' disappointment reflect that their expectations to enjoy the benefits from the establishment of the mine were not met. Based on Swedwatch's findings, this has created tension and resentment between those who have benefitted and those who have not.

Employment opportunities seemingly constitute another issue of contrasting views between the company and community members. Interviewed community members stated that they cannot access employment as expected, leading to impacts on their levels of income. However, according to FQM's data the employment rate has improved significantly among resettled community members compared to pre-resettlement (from a low starting point). In its comments to Swedwatch, FQM referred to legal and contextual circumstances limiting employment opportunities for the local workforce, as Zambian policy does not allow employers to prioritize certain groups.

The provision of farm blocks to all resettled households carries the potential to alleviate the impact of decreased income-levels and food security. However, as long as access is impaired, even if due to reasons beyond the reach of the company, this measure does not serve its purpose. Despite FQM's compensation packages and livelihood programmes, Swedwatch's findings indicate that the company has not sufficiently managed to restore livelihoods in accordance with the IFC standard. In this context, it is encouraging that FQM has acknowledged that its efforts so far have not been effective enough, and that the company is planning to address and mitigate the issue of deficient food security through kitchen garden programmes.

Furthermore, there are indications that lower income levels have, in some cases, impaired parents' possibilities to send children to school. Although the company states that access to education has increased substantially and that it could provide records of improved school results, the contrasting perspectives of rights holders in this regard indicate that there is a need to further assess if access to education is sufficient. It also underlines low governmental investments and communities' high dependence on company efforts to provide social services.

Based on Swedwatch's findings, houses are of a better standard than prior to the resettlement process and land-tenure was provided in accordance to the IFC standard. It should be noted, however, that this is disputed by community representatives who question whether land-tenure is valid, given that FQM does not possess the presidential land-title deed to the land-area that the company acquired. It can also be questioned whether or not the houses are adequate in terms of cultural appropriateness and, in the case of the southern resettlement, placed in a suitable location in terms of access to markets, as the IFC guidance note recommends.

The IFC standard states that division of communities should be avoided in order to maintain social structures and ease transition. In the case of Kalumbila, the resettled community members were offered during consultation to move into two separate areas, with the consequence that the community was split. According to FQM, resettled community members experience the division as a positive thing. This is in contrast to Swedwatch's findings which indicate that the separation of the community into two separated areas far apart has, together with the in-migration of job-seekers, disrupted social networks and norms which may otherwise have helped communities to adapt to new circumstances. This has potentially also contributed to social tensions and partly enabled social impacts such as increased alcohol abuse, impacting women and children's well-being the most.

Based on interviews, there is a risk that the over-enrolment in schools undermines the quality of the education provided, especially for the weakest performing students. This is, however, in contrast to FQM's own data which indicates that students' grades have overall improved among the resettled communities. Nonetheless, over-enrolment in schools highlights challenges that come with in-migration and the strains it can inflict on social services.

FQM states that it took careful measures to ensure that community members were well informed regarding potential risks and that it did not commit to provide employment. In contrast, Swedwatch's interviewees were of a different view, claiming there were promises and enticement of employment from the company during the consultation process. Within the scope of this report, Swedwatch has not been able to investigate further what was said and not. However, high expectations of development and employment point to the importance of comprehensive and thorough communication in a complex context. Despite consultation and the provision of a grievance mechanism, it raises further questions regarding the level to which FQM's management of expectations and information distribution has been effective.

4. Are ICT companies addressing minerals beyond 3TG?

This report uses the example of copper mining in Zambia to highlight the broad spectrum of potential impacts on human rights present in mineral supply chains of ICT products beyond the scope of 3TG and the issue of conflict.

Following the enforcement of the Dodd-Frank Act and numerous reports on human rights risks and conflict linked to 3TG minerals,[262] the ICT sector has increasingly acknowledged the need for due diligence processes in their mineral supply chains. Incorporating standards such as the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, companies operating within ICT and some other sectors[263] are, with varying degrees of success and commitment, tracing 3TG supply chains in order to retrieve information regarding the minerals' country of origin and mitigate risks of indirectly contributing to human rights abuse and financing of armed groups through their sourcing of minerals.[264]

In order to understand the extent to which the ICT sector in general is addressing minerals beyond 3TG, Swedwatch interviewed the industry association RMI,[265] the ICT company Intel, and Impact, a civil society organisation with expertise in human rights impacts in mineral supply chains. According to Michele Bruelhart, Director of Innovation at RMI (of which many of the large ICT brands are members) beyond 3TG, ICT companies are currently focusing on cobalt:[266]

"I think broadly, cobalt is the new mineral in town. There is a lot of focus on that mineral and there are strong incentives to work on it. Beyond 3TG and cobalt, it depends on each company's own assessment, which materials are relevant, what the supply chain looks like, including the supply chain risks, supplier relationships and so on. Focus areas may vary from one company to another."

Julian Lageard, Director of Corporate and Government Affairs at Intel, agrees that companies vary in the extent to which they trace and address minerals beyond 3TG, and more recently cobalt. However, Lageard noted that a growing number of frontrunners have identified – and are attempting to mitigate – risks in mica and lithium supply chains, mainly due to public pressure and attention from the media, civil society, customers and investors. He also stated:[267]

"The work on 3TG and cobalt is by no means completed and considerable work remains in terms of getting processes and mechanisms in place, before they can be applied and extend to other minerals."

Joanne Lebert, Director of the civil society organisation Impact, said that she only knows of one world-leading ICT brand that has declared that it is mapping all of its materials and minerals, but she is not convinced other companies will follow. She stated that compulsory measures are needed in order to widen the scope of minerals:[268]

"ICT companies' actions are driven by regulation, law, public pressure and legal and reputational risk. For this reason, there is a need for a broadened legislation that includes other minerals as well, beyond conflict minerals."

Following the Dodd-Frank Act's reporting requirement, several ICT companies publicly disclose 3TG (and to some degree cobalt) smelters and refiners present in their supply chains. It is worth noting that some of the smelters listed by ICT brands also process copper and manufacture copper products that could be used in ICT, but it is not clear if they do so.[269] The Dodd-Frank Act and the EU's conflict mineral regulation do not incorporate any requirement to disclose information regarding the source of copper or any other non-3TG mineral. Joanne Lebert at Impact stated that ICT companies are likely to report voluntarily on minerals beyond 3TG only if there is tremendous attention to an issue, such as child labour as in the case of cobalt. Lebert is critical of ICT companies' general performance in conducting HRDD in 3TG supply chains. She believes companies are relying on sector schemes and certifications that are not transparent:[270]

"Downstream companies need to dig deeper into their supply chains, get the evidence on what is going on on the ground and report on the findings. They don't dedicate resources to do it. Some are doing more, but most of them are throwing up their hands and say, it is too complicated."

Although there is still a focus on preventing the financing of conflict, Julian Lageard at Intel said that awareness of other impacts beyond conflict is on the rise:[271]

"There is a general emerging realisation among ICT companies that conflict is not the only challenge in mineral supply chains. Conflict remains serious but other abuses have also been identified, such as forced and bonded labour and environmental abuse such as mercury pollution at mines. Of course, this includes 3TG."

Bruelhart at RMI pointed to the complexity of the supply chains and the number of minerals present in the end products as key challenges associated with conducting HRDD in mineral supply chains:[272]

"What we are most interested in is what is going on at the mine sites and the situation on the ground. Companies are expected to understand their supply chains, however complex. They need to be able to understand which the actors are in complex supply chains, locations and activities, and which impacted stakeholders who need to be involved, to be able to build a risk-based approach to the due diligence process."

In order to address these challenges, RMI produced a report in 2018[273] covering 37 materials, among them copper, which included the origin and the social, environmental and governance issues associated with the producing countries or mineral production. According to Bruelhart, the report aims to spur discussions among industry peers to prioritise actions in order to create positive change. RMI also provides a self-assessment tool that mineral producers and processors can use to evaluate and report on their performance against norms across 31 environmental, social and governance issue areas.[274] In 2019, the OECD will also launch a portal with supply chain risk information that will include minerals beyond 3TG, in response to a request from stakeholders.[275]

5. Analysis and Conclusions

Mining is in general a high-risk operation which does not necessarily benefit the people mostly affected. The ICT sector in general has so far been mainly focused on reporting on and addressing risks concerning conflict minerals. However, as findings presented in this report from the two copper mine areas in Zambia illustrate, other minerals such as copper are also associated with risks for adverse impacts on human rights and the environment.

Results from the case study in Chingola show how environmental and human rights impacts from mining operations are often interlinked and affect surrounding communities. Swedwatch's findings indicate that the continued pollution of water and soil in Chingola has detrimentally impacted local communities' right to clean water and health as well as their livelihoods. The loss of farmland and lowered income levels, associated with impacts on food security and children's access to education, underline access to clean water as a prerequisite to the enjoyment of other human rights. There is also a high risk that impacts multiply in effect, for example, when parents can no longer afford to support their children, at times they arrange for their daughters to get married at a young age, impacting the girls education. Based on Swedwatch's research findings, it appears that KCM has failed to protect water sources and to manage discharge from the Nchanga mine in compliance with international guidelines and the company's own policies.

The findings from Kalumbila highlight the complexity and common challenges of large-scale land investment in rural, low-income contexts such as the North-Western Province of Zambia, with low governmental presence and support. FQM has declared that communities affected by its business activities should benefit through opportunities such as employment, business development and community investments. Findings indicate that there are positive developments and opportunities present, but that they do not necessarily benefit everyone. Despite consultation, compensation and community investments, Swedwatch's findings indicate that in the aftermath of the establishment of the mine, livelihood restoration has been insufficient and community members face impacts on their food security, as well as disturbance of social structures and norms. The large-scale investment has created an influx of job-seekers, creating tension and pressure on social services and has potentially contributed to social impacts such as increased numbers of teen-pregnancies.

Swedwatch's findings outline Zambia as a high-risk context for copper mining due to weak public institutions and governmental presence, low enforcement of law, high poverty and corruption. However, Zambia is not an isolated case. There are numerous reports from all over the world illustrating how copper mining has caused impacts on local communities' health, livelihood and access to clean water, not seldomly in high-risk countries. In addition, copper extraction has been associated with conflict, for example in Myanmar and the Philippines.

Following legal obligations and public pressure, the ICT sector has in general focused its efforts on responsible sourcing of 3TG, with varying degree of success and commitment. After public scrutiny and reports of hazardous working conditions and child labour, cobalt has become another mineral of focus and, to an increasing degree, also lithium and mica. This report underlines that risks in mineral extraction relevant to the ICT sector expand beyond the issue of conflict and child labour as well as the scope of 3TG minerals. Swedwatch has not established a link between the scrutinised mines and the ICT sector. However, although the scope of minerals and HRDD efforts in minerals supply chains may vary between ICT companies, the findings presented strongly indicate that there is a need for the ICT sector to increase its actions in addressing risks associated with copper extraction in mineral supply chains. Strategies should be designed to ensure effective human rights due diligence in compliance with international guidelines and best practice. To ensure that the process is credible, ICT companies should also collect information through establishing collaborations on the ground with local civil society organisations and other informed stakeholders. It is positive that the RMI and the OECD present reports that may encourage and support human rights due diligence for minerals beyond 3TG. In addition, the OECD Due Diligence Guidance's five-step framework regarding minerals as well as RMI's tools and member collaboration present opportunities for ICT companies to build on existing methods and experiences.

In addition, it is desirable that EU's legal regulation on conflict minerals is expanded beyond 3TG and the issue of conflict. At company level, ICT brands should increase transparency towards their stakeholders in line with the UNGPs. They should further investigate and publish lists of smelters and refiners for copper and other minerals, in addition to 3TG and cobalt, with the ultimate aim to determine and disclose the origin of each mineral.

To conclude, companies along the ICT supply chain play an important role and have opportunities to contribute in a positive way to the fulfilment of the Sustainable Development Goals. However, the case studies from Zambia presented in this report indicate impacts that counteract the realisation of the SDGs; in particular goals one, two and six which aim to end poverty, achieve zero hunger and provide access to clean water for all. Subsequently, if ICT companies keep a too narrow focus and scope of minerals in their human rights due diligence efforts, they risk to undermine the process of reaching the SDGs.

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