TEARS OF HARDSHIP
Mining Operation by CONGO DONGFANG INTERNATIONAL MINING SPRL (CDM)

and its impacts on the environment and the health of the Kasapa, Kamatete and Kamisepe local communities

AFREWATCH
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LIST OF ACRONYMS

AFREWATCH : African Resources Watch
ACHPR : African Charter on Human and Peoples' Rights
ACHR : American Convention on Human Rights
CDM : Congo DongFang Mining
CRAA : Agri-Food Research Center
DamDDH : American Declaration of the Rights and Duties of Man
ESIA : Environmental and Social Impact Assessment
SRMI : Socially Responsible Mining Investment
ISO : International Organization for Standardization
EITI : Extractive Industries Transparency Initiative
WHO : World Health Organization
NGO : Non Governmental Organization
ESMP : Environmental and Social Management Plan
RAID : Rigths and Accountability in Development
DRC : Democratic Republic of Congo
IFC : International Finance Corporation

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Emmanuel Umpula Nkumba
Executive Director

EXECUTIVE SUMMARY

As of 2015, CSOs have conducted several studies that show how the populations in Kolwezi and its surroundings are impacted by mining: livelihoods are destroyed such as rivers and soil, kitchen gardens and fields by acid water waste; houses and roads are destroyed by blasting, health is impacted by air pollution, etc.

Since 2017 the populations around CDM, and especially the inhabitants of Kasapa, Kamatete and Kamisepe, three riverside areas, have been complaining about the companies not respecting the environmental obligations. They criticized the negative impacts of CDM discharging acidified waste water and propagating toxic fumes in the air from its facilities at night. This waste has a negative impact on their health and fields.

Worrying about how to contribute in improving the situation, AFREWATCH, which is a Human Rights defense NGO specialized in the governance of natural resources, rapidly conducted a research on the field and with diverse stakeholders so as to make sure the facts alleged by the communities on the basis of appropriate methods (laboratory analyses) were real. The survey aimed to confirm the presence of harmful substances in the liquid and gaseous wastes spread by CDM, evaluate the impact on the communities' lifestyle and health, determine responsibilities and finally propose potential solutions.

From the field surveys and the laboratory analyses on soil and water samples, CDM does not exploit mining resources in a responsible and respectful manner when it comes down to human rights and the environment provided in the Mining Code and its Mining Regulations as well as the international standards on human rights and the protection of the environment.

The study shows that CDM does not comply with the provisions of Articles 81 and 204 of the Mining Code as well as Articles 357 and 358 of the Mining Regulations, which require holders of mining rights and processing entities to behave responsibly towards the environment and the social life in the area where they operate by having an Environmental and Social Impact Assessment (ESIA) that has been approved, in particular, by the communities around its activities, and by having an Environmental and Social Management Plan (ESMP) that it will scrupulously apply. Field surveys show that either CDM does not have an ESIA and ESMP to document and manage the negative impacts of its activities on the environment and on the riverside population, or it has them but does not implement them.

Thus, in order to verify the flooding that the populations of Kasapa, Kamatete and Kamisepe areas claim to be victims of, the researchers visited, between December 2020 and January 2021, the aforementioned areas that are downstream from the CDM plant to verify the passage of water as stated in the communities' complaints. They observed large quantities of water coming from the CDM plant and spreading in the 3 areas. In order to get rid of the large quantities of water in its concession, which occupies the entire upstream part, CDM built several channels that cross the walls of the southern part of its concession. The quantities of water thus released are spread out in all the compounds behind its plant up to the 'Prison Centrale de Kasapa' (Kasapa Central Prison). Another quantity is released into the large pipe that runs along the avenue named after the company and that crosses the 3 areas, passing through the Kasapa Police Camps and 'Marché Moïse' (a market named 'Moïse'). Also, it is necessary to specify that the works of construction of the drains carried out with the aim of recovering the water of its concession down to the Lubumbashi river did not get done, which made the situation worse.

It should be noted that these waters invade almost all the roads, flood the surrounding plots and schools, market gardens and vegetable gardens as well as fish ponds. This deplorable situation causes erosions that degrade roads and destroy crops and livestock, but also disruption of the education programme in the schools around which are often forced to stop the course because of these incidents.

The complaints of the populations in Kasapa, Kamisepe and Kamatete areas, corroborated by the surveys conducted by the AFREWATCH researchers, attest that by releasing toxic fumes and discharging wastewater onto houses, CDM hugely pollutes the environment.

The analysis of soil samples taken in the 3 areas by the AFREWATCH researchers showed very high levels of copper, zinc, lead and nickel, far exceeding the values recommended by the Canadian guidelines for good soil quality for crops and construction of residential areas.

According to the environment expert opinion collected by AFREWATCH, high levels of these three substances can lead to soil pollution, death of soil invertebrates, and childhood diseases in human beings.

The same is true of the water samples taken in the same areas, which indicate the presence of mercury and nickel at levels well above the values recommended by the international standards, including those of the World Health Organization (WHO) for drinking water. In other words, the overflow of this wastewater and acidified water into the plots of land, raises a real fear of contamination of the well water that the local population consumes for lack of drinking water from REGIDESO (The National Water Supply Company).

In addition, the toxic fumes released by CDM cause dry and often bloody coughs from which this poor population continually suffers.

Moreover, the complaints of the communities remain curiously unheard because, despite the multiple complaints of the populations and denunciations of the Organizations of the Civil Society, CDM continues to exert its activities in violation of the human rights, while polluting the environment without being questioned by neither the provincial nor the national authorities.

RECOMMENDATIONS

In view of the above, AFREWATCH recommends the following to the different stakeholders.

The National Ministry of Mines should:

- Dispatch a team of experts from their respective ministries, in collaboration with their colleagues in the Environment and Health departments, with the assistance of specialized laboratories, to conduct a thorough investigation of the allegations made by the populations of Kasapa, Kamisepe and Kamatete areas, to determine the impacts on their lives and the environment, to establish responsibilities and to force reparations for the benefit of all the identified victims;
- Make sure CDM has an ESIA and an ESMP and implement them in accordance with Articles 81, 204 of the Mining Code and 357 and 358 of the Mining Regulations;
- Otherwise, immediately withdraw the processing authorization granted to CDM in accordance with the provisions of the Mining Code;
- Make sure CDM has and pays the financial security and makes a provision for the rehabilitation of the site at the end of its exploitation in accordance with the provisions of article 204 of the Mining Code.
- DPEM (the Provincial Mining Environment Office) should:
- Carry out an environmental audit of all of CDM's activities without delay and, if necessary, scrupulously apply the provisions of the Mining Code;
- On a regular basis make sure CDM's activities are carried out in accordance with the provisions of the Mining Code, its ESIA and its ESMP.

The Provincial Authorities should:

- Make sure the water supplied by REGIDESO (the National Water Supply Company) to the populations in Kasapa, Kamisepe and Kamatete is safe to drink in accordance with the guidelines of the Congolese legislation on the subject and the recommended international standards (OP, ISO, SFI and WHO);
- Make sure the completion is done concerning the development works of CDM Avenue and the drains along it that are meant to facilitate the channeling of rainwater until it is discharged into the Lubumbashi River;
- Make sure the "Commune Annexe" receives its share of the mining royalty and this is allocated to the improvement of basic socio-economic infrastructure in the three riverside areas impacted by CDM.

CDM should:

- Publish its updated ESIA and ESMP in order to help the public, including the populations around its plant, to become aware of the activities and impacts on their lives and the environment and the measures taken to remedy them;
- Propose a program in accordance with the Congolese legislation and the international standards (ISO, SFI...) for an efficient management of liquid and gaseous waste from its activities;
- Finalize the development of CDM Avenue and many others which were destroyed because of its activities and the construction of good drains capable of facilitating the conduct of this waste water that is released by the company and runs down to the Lubumbashi River without disturbing the surrounding dwellings;
- Provide skill and capacity building for its staff with respect to the mining legislation on social and environmental topics as well as on human rights issues in order to improve their relations with the local communities;
- Create a department that will handle relations between the company and the riverside communities and be responsible for documenting all the complaints from the victims, regularly reporting to the population on the responses and granting reparations to the victims of the current situation.

The population in Kasapa, Kamisepe and Kamatete areas should:

- Organize themselves and formally file their complaints with CDM and the political-administrative as well as the judicial authorities and, if necessary, claim for remedy.

I. NTRODUCTION

0.1. Context and Rationale

In the early 2000s, the DRC felt the need to liberalize its mining sector with the ultimate goal of propelling the growth of the national economy and attracting long-term profitable mining investments.

The starting point goes back to the adoption of Law N° 007/2002 of July 11, 2002 on the Mining Code and Decree N° 038/2003 on the DRC's Mining Regulations.

Since the advent of these so-called incentive legal texts, mining companies flocked to almost the entire DRC. The case of those which settled in the provinces of Haut-Katanga and Lualaba can be cited to illustrate such a rush. In fact, the 2021 data from the Ministry of Mines indicate that 1,264 mining companies have been identified. Among them, 342 have mining titles in due form, 161 have quarry titles, 81 have mineral processing and transformation capacity, 609 mining cooperatives and 428 other unclassified operators, etc.[1]

This influx of companies has not only boosted mining activity, but it has also increased the country's production. According to data from the Extractive Industries Transparency Initiative (EITI) report (2009[2]): "copper production increased from 300,000 tons up to 1,600,000 tons in 2020[3]" . These data illustrate the hopeful perspective not only for the revival of the national economy but also for the development of the country and the communities living around the areas where mining operations are carried out, which are the most affected by mining activity in the DRC.

Moreover, it should be noted that as early as 2002, the Congolese law clearly defined mining standards that protected human rights and the environment in order to guarantee socially responsible mining investments. Unfortunately, vagueness seems to be the mode of mining governance adopted over the past two decades, which has destroyed hope.

Far from creating wealth and being vectors of economic and social development for the populations around mining sites, in most cases they should at least abide by national and international human rights and environmental law.

Several studies particularly on Chinese-owned companies concordantly report poor operating conditions that respect neither environmental standards nor human rights guaranteed by the international treaties, the Constitution and the DRC's Mining Code. They attest that, in addition to the poor treatment of their employees, Chinese companies build their mineral processing units in residential[4] areas with all the real risks for the inhabitants.

This is the case of Congo Dong Fang Mining (CDM), a company of Chinese origin that operates 20 km South-East of the city of Lubumbashi, in the 'Commune Annexe' near several residential areas, including Kasapa, Kamatete and Kamisepe, whose population is currently estimated at more than 30,000 inhabitants.[5]

In 2009, RAID, an international non-governmental organization for Rights and Accountability in Development published a report entitled "Mining Companies in Katanga" which denounced for the first time the labor rights abuses by Chinese companies based in the DRC[6]. CDM was among 9 Chinese mining companies involved in labor rights abuses.

Another report that highlighted human rights abuses by Chinese-owned companies based in the DRC, including CDM, was "This is Why We

1 http://e-mines.ctcpm.cd/dashboard

2 2009 EITI-DRC REPORT, page 20, https://eiti.org/files/documents/itie-rapport-rdc-mines-2008-2009.pdf

3 EITI-DRC loosened Report, 2018, 2019 and first quarter 2020, page 153, http://congomines.org/system/attachments/assets/000/002/036/original/RAPPORT_ASSOUPLI_ITIE_RDC_2018_2019_1er_Semestre_2020_Adopte%CC%81.pdf?1617268018

4 ACIDH, Chinese Private and Public Investments in the Mining Sector in Katanga : Good governance and Human Rights, survey report, 2010. Available at:http://congomines.org/system/attachments/assets/000/000/356/original/ACIDH-2010-InvestissementsChinoisSecteurMinierKatanga.pdf?1430928607

5 Number given by the Head of Kasapa Area on December 28, 2020.

6 RAID, Chinese Compony in Katanga, 2009, https://www.raid-uk.org/sites/default/files/drc-china-report.pdf

Die: Human Rights Abuses in the Democratic Republic of Congo Fuel the Global Cobalt Trade,"[7]», published in January 2016 by Amnesty International and AFREWATCH. This report criticized the lack of respect for human rights in cobalt mining including the work of miners, the lack of pay for workers, poor working conditions, long working hours,etc.[8]

None of these reports investigated the human rights and environmental violations committed against the populations surrounding the mining activities of the Chinese-owned companies, particularly CDM. This is the reason why, in virtue of article 37 of the DRC[9] Constitution in force , AFREWATCH wanted to document and analyze the problems caused by CDM's mining activities on the soil, water, roofing sheets and air as well as other negative impacts of this pollution on the health and other human rights of the riverside populations. However, the main effort of this study will be focused particularly on the health and environmental aspects with regard to the international and national standards.

0.2. Purpose of the Study

The purpose of this study is to produce a report that provides up-to-date data in 2021 on the negative impacts of CDM's activities on the health and the environment of the local communities, particularly those in the neighboring areas: Kasapa, Kamisepe, and Kamatete. This study is to be used as an advocacy tool.

0.3. Objectives of the study

In initiating this study, AFREWATCH aims to achieve the following objectives:

- General Objective
- Contribute to the respect for human rights and the improvement of the socio-environmental conditions of the inhabitants of Kasapa, Kamatete and Kamisepe.
- Specific Objectives
- Identify the negative impacts of waste water discharged by CDM on the communities' healt hand their environment;
- Encourage both the national and provincial Governments to take appropriate measures to make sure the rights of the communities in the impacted zone are respected; and
- Make CDM operate within the framework of IMSR[10] (socially responsible mining investment).

0.4. Methodology

The analytical method was mainly used. It helped the researchers to systematically analyze the various data collected in the field and was supported by interview, free observation and documentary techniques.

The free observation technique on the field helped the research team to experience the reality and draw conclusions, while the documentary technique was used to compile documents related to the research topic, particularly those relating to the national and international normative framework on the right to health and the right to a healthy environment.

The interview technique consisted of interviews with diverse segments of the population[11] in Kasapa, Kamatete and Kamisepe, who were requested to answer a questionnaire. 75 people directly answered this two-part questionnaire (environment and health and other rights) among the local communities (religious leaders, school officials in the affected area, market gardeners' cooperatives, managers of the Kasapa, Kamisepe and Kamatete markets, and the inhabitants of these areas); CDM, the local authorities (chiefs of Kasapa, Kamatete and Kamisepe, the mayor of Commune Annexe, and); DPEM(the Mining Environment Head Office), The Provincial Environment Office; the Provincial Ministries of the Environment and Mines, the Parquet de Grande Instance of Lubumbashi (Prosecutor's Office), the Tribunal de Grande Instance of Lubumbashi (the First-Instance Court); the Court of Appeal of Haut-Katanga). The aim was to collect their testimonies and opinions in relation to the complaints and the facts experienced in

7 Amnesty International and Afrewatch, This is why we die : Human Rights violations in the Democratic Republic of Congofuel globalcobalt commerce, January 2016, https://afrewatch.org/conference-de-presse-sur-le-rapport-publie-par-amnesty-international-et-afrewatch/

8 Idem.

9 Art. 37 of the DRC Constitution :"The State guarantees the freedom of association. Public authorities shall collaborate with associations that contribute to the social, economic, intellectual, moral and spiritual development of the population and to the education of the citizens. This collaboration may take the form of a subsidy. The law determines the modalities for the exercise of this freedom".

10 We explain this notion later on in this report.

11 Notably, market gardeners, students and teachers, salespeople in Marché Moïse, young people, medical personnel in the medical facilities of the area, women and men living in the areas, local officials, the communal authority, as well as some police officers of some Police Stations, etc.

the field by the researchers themselves.

For CDM, two letters of request for hearing dated December 29, 2020 and January 26, 2021 concerning exchanges on the "Policy of contribution of the company to the local development and protection of the environment" were sent to the company in the framework of the study.

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Finally, in addition to these two techniques, laboratory analyses were used (i) on the collected samples to determine the level and content of concentrated chemicals present in the runoff water discharged by CDM in the wells, the soil, the air as well as on the roofing sheets; and (ii) to interpret the results by making sure they are in accordance with the WHO health standards and requirements. This part being entirely technical, the laboratory results were interpreted by environmental experts from Environment Law Alliance Worldwide (ELAW).

0.5. Bottlenecks

Achieving this study was not only a success, but also a challenge in terms of bottlenecks, notably:

- The launch of this study coincided with the beginning of the end-of-year vacations at CDM and with the political-administrative authorities, which explains how unavailable the authorized interlocutors are as of December 20 to January 20;
- The categorical refusal of CDM to collaborate with the AFREWATCH research team in spite of the multiple steps undertaken with it, such as the tabling letters of interview request. The research team wanted to exchange with CDM about the extension of the period of the study to the end of April 2021 with the aim of granting more time to the company to answer or be available to meet the research team after the end-of-year vacations;
- The research team's inaccessibility to CDM's ESIA and ESMP, even though the Mining Code and its implementation measures require their publication. Without these documents, it was not easy to understand all the impacts of the project on the communities and the environment;
- The reluctance of some authorities and officials of the State services of the Province that were contacted or targeted in terms of interviews with the ad hoc questionnaire.

I. PRESENTATION OF Congo Dong Fang Mining (CDM)

Congo Dong Fang Mining, CDM in acronym, was created on June 26, 2006 and is located 20 km away from downtown Lubumbashi, on the road to Likasi, and its mineral processing facilities are located in Joli-Site, in the 'Commune Annexe' with an extension in Kasapa area.

CDM is a Chinese-owned mining company specializing in the processing of cobalt and copper. It is a subsidiary of Zhejiang Huayou[12] Cobalt CO.LTD, a company registered and listed on the Shanghai Stock Exchange. Its capital is estimated at 6,000,000 USD the shares of which are as follows:

- Great Mountain Enterprise PTE.LTD (34.90%): a company owned since August 2008 by Mr. Xie Weitong, a Taiwanese national, born in 1957 in Taiwan, ID No. J10068. He lives in Dexing Dong Road, No. 6 Zhishanli, Shilin Region, Tai Bei city. He is one of the founders of the company and is currently the Deputy Chairman of the Board of Directors of the company.[13]
- TongxiangHuayou Investment CO. ltd (24.51%): 90% owned by Mr. Chen Xuehua since August 2008, born in 1961, a Chinese, no permanent residence abroad. His identification number is 3304 2519 6105 29****. He lives in Wutong Street, Tongkiang City, Zhejiang Province. He is the co-founder of the company and now the chairman of the board of directors and Mrs. Qiujinhua, a Chinese, Mr. Chen Xuehua's wife, has 10% of the shares in the company.
- China-Africa Development Fund CO., LTD (10%)[14].
- China -Belgium Direct Equity Investment

12 Information from the official website of the Ministry of Mines. http://e-mines.ctcpm.cd/detailsope/796780/details/

13 EITI Conciliation Report – DRC 2015, page 131.

14 Idem

Fund (7.74%).[15]
- TongxiangHuaxinInvestment CO., LTD (4,69%) -Hunan Xiangtou High-Tech Venture Capital CO., LTD (4,50%).[16]
- Zhejiang Golden Bridge Venture Capital CO., LTD (3,59%) -Shenzhen Fortune Caixin Venture Capital management CO., LTD (2,07%).
- Others (7.99%) »[17].

As a mining company, CDM operates in the provinces of Haut-Katanga and Lualaba. Until the end of 2018, it did not have its own deposit and its ores come largely from several artisanal mining sites[18]. This is the reason why it has several mineral purchase counters in both Lualaba and Haut-Katanga.

Below is an aerial view of the CDM facilities with the CDM copper and cobalt processing plant:

Initially a simple warehouse for the purchase of ores extracted from artisanal mining, CDM is currently classified in category C of mining companies according to the production capacity of its plant or project, which is less than 20,000 tons of copper per year.[19] It currently has two deposits (Luiswishi and Lukuni) in Haut-Katanga and Kasulo, in the Lualaba Province, which were transferred to it by GECAMINES and which it intends to develop in the near future.

CDM's copper-cobalt plant in Lubumbashi uses a two-stage treatment process:

1. Sulfation roasting of copper: this is a dry process involving fuel and heat and the release of air polluting emissions[20] ;
2. Sulfuric acid leaching of the roasted copper concentrates, followed by electrolytic recovery of copper and then recovery of cobalt with lime to make up cobalt hydroxide. This is a wet process releasing contaminated waste water[21]

15 Idem

16 Idem

17 Idem

18 Idem

19 WWF, inventaire des investissements chinois dans le secteur minier au Katanga et au Kasaï-Oriental, December 2014,p.28http://congomines.org/system/attachments/assets/000/001/492/original/2014_12_KANIKI_Rapport_investissement_chinois_pour_WWF.pdf?1533546865

20 Güntner, J., &Hammer Schmidt, J. (2012). Sulphating roasting of copper-cobalt concentrates. Journal of the Southern African Institute of Mining and Metallurgy, 112(6), 455-460.

21 Shengo, M. L., Kime, M. B., Mambwe, M. P., &Nyembo, T. K. (2019). A review of the beneficiation of copper-co-

II. HOW CDM DEALS WITH LIQUID AND SOLID WASTE

This chapter presents an inventory of the issues on which the complaints of the communities around CDM's facilities are based, the situation through which the researchers went as they collected data, and the testimonies and opinions of the communities, the local and provincial public authorities, the company and other observers. Ever since CDM settled in the Joli Site area, it has not dealt properly with the riverside populations.

The two parties go through a persistent tension as a result of the negative impacts suffered by the communities in the surrounding neighborhoods and which are attributed to CDM's activities[22]. The aforementioned communities blame this processing unit for several facts, notably:

II.1.CDM's liquid waste badly dealt with

In view of the technological approaches used for its work, namely the torrefaction by sulfation of copper and the leaching with sulphuric acid of the torrefied copper concentrates, CDM produces two types of waste, including polluting fumes and air emissions as well as acidified and contaminated waste water. According to international standards[23] and the DRC's Mining Code of the Democratic Republic of Congo, before installing its plants, CDM was supposed to have carried out an environmental and social impact study[24], which warns about the potential negative and positive impacts of its activities on the population and the environment. This study is complemented by another named 'Environmental Management Plan', which includes all the answers to various negative impacts that could occur in the framework of the company's activities[25]. These two documents are part of the documents required in the application file for a mining title.

As far as managing toxic liquid waste is concerned, the Code recommends that companies use means to free these waters of all toxic elements before releasing them, including the construction of settling tanks for the conservation of toxic liquid waste and their treatment by using appropriate technologies for their purification[26]. The aim is to prevent the risk of pollution of soil, vegetation and water, which could be caused by the toxic elements in this waste or any other negative impact that they could have on the environment.

According to the images of the company's facilities, CDM has two settling ponds for managing liquid waste that come from its activities. However, we did not find any information on the approaches and technologies used by CDM to process and purify liquid waste. Its ESIA and ESMP, which are meant to provide this information, are not available. And the interview requests with researchers remained unanswered until this report was produced.

However, since 2014, the populations in Kasapa, Kamatete and Kamisepe have been blaming CDM for poorly managing waste from its mining activities. They have been accusing CDM of discharging acidified and polluted water into the population's dwelling space, which violates the environmental provisions and thus exposes their neighborhoods to flooding, causes destruction of roads, pollution of well water used in most households due to lack of water in their areas, pollution of the soil and vegetable crops that affects their livelihoods[27] and the appearance of pulmonary diseases.

According to the head of the Kamatete market, "*poor management of toxic liquid waste poured in the settling tank would be the main cause of the floods and pollution that plague Kamisepe, Kasapa and Kamatete (...) when CDM releases its acidified water, it runs down to the market, ending its devastating course in the Lubumbashi River (...) This waste water is generally released during the rainy season (...) There have been days when this waste water was released just because it looked like it was going to rain...*".

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balt-bearing minerals in the Democratic Republic of Congo.Journal of SustainableMining, 18(4), 226-246.

22 https://www.radiookapi.net/2018/02/02/actualite/en-bref/pollution-lubumbashi-les-habitants-du-quartier-kasapa-appeles-la
https://www.business-humanrights.org/en/latest-news/lentreprise-mini%C3%A8re-cdm-accus%C3%A9e-de-pollution-%C3%A0-lubumbashi/

23 The OP, ISO, SFI Standards, etc.

24 Articles 81 et 204c of the Mining Code of March 2018 and 357 and 358 of the Mining Regulations.

25 Idem

26 idem

27 https://www.radiookapi.net/2018/02/02/actualite/en-bref/pollution-lubumbashi-les-habitants-du-quartier-kasapa-appeles-la

"During rainy days, on CDM Avenue, the waste water runs along several roads and across Kasapa, Kamisepe and Kamatete, the areas around the company. From the plant through the Kasapa and Kamatete to Kalubwe area, water from CDM's facilities flows along CDM, Kalulwa, Tshamamba, Luna and Biayi Avenues to finally flow into the Lubumbashi River"[28].

During the interviews with the researchers in December 2020 and January 2021, residents of Kamatete area confirmed that they had experienced repeated flooding of their plots of land by water from CDM plants. More than 20 testimonies collected from community members and leaders, including school and church leaders, reported the invasion of houses and several vegetable gardens by water from CDM's facilities downstream from their area. And yet, according to the latter, CDM promised them the construction of appropriate drains for the effective management of the impacts in order to channel this water.[29]

Photos by AFREWATCH on October 27, 2020

The inhabitants of the above-mentioned areas also blame CDM for releasing fumes and toxic particles into the atmosphere, which violates the environmental provisions, exposing them to lung diseases, air pollution and corrosion of the roofing sheets on their houses[30].

II.2.Erosions of roads, houses and schools

The large quantities of water released by CDM during the rainy seasons have a significant negative impact on the lives of the communities in the different areas through which the water passes before reaching the Lubumbashi River. These are Kasapa, Kamatete and Kamisepe areas that are located just behind the CDM concession.

At the end of field surveys, the AFREWATCH team researchers found out the fact that the liquid toxic waste released by this company had a negative impact on the lives of the inhabitants in these areas. The populations are victims of flooding and erosion of roads, houses and schools caused by the spills of acidified water.

According to the head of the Kamatete market, 'nearly 500 sellers work in conditions of increased insecurity, especially when CDM releases its acidified water, which runs down to the market (...) This water ends up in the Lubumbashi River after causing damage».

A dozen residents interviewed by the AFREWATCH researchers, including the head of the area, remarked, "several houses are regularly invaded by large quantities of water regularly released by CDM during the rainy season (...) From the factory, through Kasapa and Kamatete areas to Kalubwe area, this water runs across CDM, Kalulwa, Tshamamba, Luna and Biayi Avenues to finally flow into the Lubumbashi River. This overflowing water is the main cause of the erosions that can be seen on almost all the above-mentioned roads...".

These various testimonies were also confirmed by the head of the Kasapa neighborhood during her interview with AFREWATCH researchers. In the presence of her assistant, she told the researchers that several avenues in her neighborhood were eroding due to the overflow of water from the CDM factories. And many houses, including the house of one of her assistants, are threatened with demolition as a result of these waters that

28 Interview by AFREWATCH, Lubumbashi, March 12, 2020.

29 www.business-humanrights.org

30 https://www.business-humanrights.org/en/latest-news/lentreprise-mini%C3%A8re-cdm-accus%C3%A9e-de-pollution-%C3%A0-lubumbashi/

flood her neighborhood. The situation worsened when CDM brought in machines to level the avenues destroyed by the water, including the main avenue bearing his name, which begins in the Joli Cite neighborhood and extends to the Kamatete neighborhood, passing through the Kasapa central prison, the police camp bearing the same name and the Kasapa market. During the construction of this avenue, CDM blocked the two large drains that served as the main water pipes for his neighborhood and two other neighboring neighborhoods to the Lubumbashi River.

In an interview, a member in Kasapa area living upstream from camp belonging to the Kasapa Training Center said, "it is the waste water from the CDM plant that destroyed our roads and threatens to destroy our houses..." "Despite its promises, CDM has not dug drains, so we were forced to create drains ourselves in order to direct the water to the other side of CDM Avenue in such a way that our houses will be protected from the acidified water from the company's facilities. Otherwise, our houses would have already been washed away by CDM's waste water".

Below are photos of the flooding caused by wastewater from the CDM facilities.

In addition, the surveys of AFREWATCH revealed the fact that several families had been victims of the collapse of their houses and have not received any assistance, repair or compensation from CDM. The provincial and national authorities did not say anything at all. Given the time available, we could not document all the cases of houses that collapsed as a result of the floods. However, the photos below illustrate cases of flooding in Kasapa area:

This acidified water also affects school activities in some schools near CDM. The water is also flowing into the classrooms during school activities. That is the case of SEYA PIERRE School that is located in Kamatete area. 'In this school, because of the overflow of these effluents from CDM in the school yard and its classrooms, lessons are generally interrupted[31], which hugely disrupts the timetable of the courses and the programs of topics', the director of the school said.

Below is a photo of flooding in the area of the above-mentioned school:

Photo by AFREWATCH on October 27, 2020.

In addition to the erosion of roads, houses and schools caused by flooding from the water coming from the CDM facilities, the inhabitants of Kasapa, Kamisepe and Kamatete also complain about the corrosion of the metal roofs of their houses by the acids in the dust from the

Photos by AFREWATCH on October 27, 2020

31 Remarks by the chairpersons of this school in interview with the research team. These people wanted to remain anonymous.

plant of the same company. In their claims, the populations believe that this deterioration of roofs began on the houses along CDM Avenue. Contrary to the situation before, it took less than a year for the metal roofs on their houses to be covered with rust. The rust that has been attacking the roofing sheets on their houses since CDM settled in could be caused by the fume and toxic particles from the company every evening or even at night.

A resident in Kasapa area who lives 200 meters away from the CDM facilities on CDM Avenue and who asked to remain anonymous said, "I have been living here since 2014 when I finished building my house (…) surprisingly, the roof on my house looks over 20 years old. In other areas, rust does not attack their houses like it does in our area (…) Unfortunately, no one monitors our situation (...) Seeing how negative the impact is on metal, you can imagine what happens with the human body?".

II.3.Risk for water contamination

Unlike the other parts of the city of Lubumbashi, Kasapa, Kamisepe and Kamatete areas do not have regular and sufficient drinking water supply from REGIDESO[32] (The State-owned Water Supply Company). To remedy this situation, a good number of people teamed up to drill wells that could provide them with water in addition to the one from REGIDESO. In general, this water is used for various household purposes and at times for consumption after it is processed by unreliable artisanal techniques. Since the toxic water from CDM is not properly channeled and spreads around, particularly in inhabited plots, people fear contamination of well water, which is often not well protected to prevent the penetration of water from outside, including the one from toxic waste. If this is the case, the populations of the areas around CDM would be in great risk since these discharges would contain a level of acidity that would be very harmful to public health.

The photo below illustrates the risk of contamination of the well water consumed by the inhabitants in Kasapa, Kamatete and Kamisepe areas because of the liquid toxic waste dumped by CDM during the rainy season:

Photo by the AFREWATCH researchers on October 28, 2020

II.4.Impacts of CDM's activities on the health of the communities

People living within a radius of about 3 to 4 km and in the vicinity of the CDM plant also complain of recurrent appearance of scabies, botulism and persistent coughs (sometimes dry, sometimes filled with blood) due to the discharge of runoff water and the toxic fume that the company propagates. All segments of this population, children and adults, men and women, say that they suffer differently and have never benefited, as a preparatory measure, from any substantial medical care from either from the Congolese State or CDM. The last case to date is that on January 2019: Mr. Erick MUKENDI, aged 20 years, who, after having inhaled the fume, had a nose bleed[33]. And to avoid such an incident from happening again, he decided to move to another area.

Unfortunately, for various reasons, the others cannot abandon their houses to live elsewhere. Several concordant testimonies of the inhabitants of the impacted area confirm the allegations, such as those of a woman and students of 'Complexe Scolaire SEYA PIERRE' (SEYA PIERRE school), who told the research team that: "After walking across this water, tickling and scabies appear on our skin"[34].

From the interviews with the staff of the health care zone (all of them declined to be named) from more than 5 viable health facilities in the impacted area, a doctor (who had been living in

32 Rémy Kangombe Lumpungu, Thème : Etude de faisabilité d'exploitation des ressources disponibles en eaux souterraines en vue de l'alimentation en eau potable des zones péri urbaines de la ville de Lubumbashi, cas de la cellule Kamisepe du Quartier Kasapa, page 9, (Theme : Feasibility study for the exploitation of available groundwater resources for the supply of drinking water to the peri-urban areas of the city of Lubumbashi) http://documentation.2ie-edu.org/cdi2ie/opac_css/doc_num.php?explnum_id=3255.

33 Remarks by Mr Erick MUKENDI in an interview with the AFREWATCH researchers.

34 Remarks by students of SEYA PIERRE School in interview ,with AFREWATCH on December 28, 2020.

the area for 18 years, owner of a health center that had been open for 7 years in Kasapa area, former attending physician at the Kasapa prison and head of staff at the Mumbunda health area of the Lubumbashi Health Zone confirmed all of these facts and stated the following:

"The problems of water, soil and air pollution, respiratory and pulmonary infections, inflammation of the ears (botulism) and others are real and present in this area (...) In front of a population that is not sensitized on the benefits of planting at least 3 trees per plot; people walking on foot in the runoff water from CDM are necessarily exposed (...)The sick are sent to the Health Zone. They do not care about listing the obvious causes that make all the symptoms recurrent (...) Personally, I observed that the heart patients I consulted die at the end of one year or even in less than one year because of the effects of the pollution in this zone of the city of Lubumbashi... CDM reportedly think that there is no population around and it works in the bush".

"In these areas, the roofs on many houses rust too quickly and then are perforated and require replacement almost every year by the owners. The collapse of houses due to flooding are facts that illustrate these consequences. What about the soil? As soon as this waste water overflows into the plantations, the crops are burned and therefore destroyed (…) This waste water causes death of fish in the ponds, cattle and others (…) Obviously CDM is responsible for several diseases among the population in this area and should imperatively get involved in the social of the victimized populations by taking care of and prioritizing the local health institutions (...) I have also noticed that any heart diagnosis is perilous in the 6 to 10 months period here; I advise such patients to leave the area unless they do not want to survive".

1) Impoverishment of the soil and economic situation of the households

In their claims about the negative impacts of CDM's activities, the populations in Kasapa, Kamisepe and Kamatete areas also note the destruction of their market garden crops and the pollution of their fish ponds by toxic water from the CDM plants. This situation significantly reduces their production and consequently their savings.

The concordant testimonies of the inhabitants of these areas reveal the fact that the water from the CDM plants causes the destruction of their market garden crops and the fish ponds.

The market gardeners complain about their gardens being destroyed by the passage of water from this company, saying that their crops are their main livelihood.
"The soil is no longer fertile; our gardens do not produce as much as formerly. Even our customers do not prefer to consume our vegetables, on the grounds that they would cause of several diseases", the market gardeners said.[35]

The owner of the ponds located near the bridge between Kalubwe area and Kamatete area said that this same waste water had caused the death of fish and other aquatic species. Another inhabitant of the same area reported the incident of a pig, which drank from that water and was found dead they day after.

Photos by AFREWATCH on October 29, 2020

35 Remarks by market gardeners in Kamisepe, Kasapa and Kamatete areas in an interview with the AFREWATCH researchers.

III. PRESENCE OF HEAVY METALS IN THE SOIL, WATER AND THE AIR

III.1.How samples were taken

In order to confirm or deny the alleged facts and the complaints of the populations regarding the negative impacts of the mining by CDM on the communities' health and livelihood such as water, crops and fish ponds in Kasapa, Kamatete and Kamisepe areas, AFREWATCH used the expertise of an international laboratory for the analysis of water samples from wells, runoff, soil and air.

a. Soil

For the soil analyses, soil samples were taken in the three surrounding areas, namely Kasapa, Kamatete and Kamisepe. The aim was to verify the impact of the toxic liquid waste released by the company on the soil and its impact on biodiversity, particularly on the market gardening and livestock breeding activities of the populations in these areas. Thus, in two sequences and in compliance with the recommended protocols, soil samples were taken in different places through which acidified water passes once discharged by the CDM plants and leaves toxic particles. A total of 8 samples were taken, 4 of soil from the immediate perimeter of the wells and 4 of soil water from the above-mentioned runoff areas.

The samples were taken according to a protocol inspired by the international standards developed by AFREWATCH experts, namely, storing the samples in mineralized water bottles bought for this purpose; and for runoff water, taking samples in the opposite direction of the water flow. Each bottle was filled with 3/4 of a soil or water sample, which was coded according to the sample type, the day, the location, and the GPS coordinates of the collection area before being transferred to the laboratory for a 48-hour analysis.

b. Water

In order to verify the impact of the liquid toxic wastes on the quality of the water consumed by the population, in two sequences and in accordance with the protocol defined by AFREWATCH, water samples were taken in different places through which the acidified water passes, once it is discharged from the CDM plants, through Kasapa, Kamatete and Kamisepe areas in Lubumbashi. Thus, eight (2) water samples were taken, including two (2) runoff samples from the plantations, two (2) samples from the eroding canal, two (2) samples from the wells and two (2) samples from the above-mentioned runoff areas. Each bottle filled with 3/4 water sample was coded according to the sample type, the day, the location and the GPS coordinates and then transferred within 48 hours from the day of collection to the laboratory for analysis.

III.2.Reference Standards

a. Soil

There are several reference standards for determining the quality of soil for environmental and human health, including ISO, OP, SFI, Canadian Soil Quality Guidelines, etc. Among these various reference standards, the Canadian Soil Quality Guidelines are the universally accepted set of guidelines. They set guidelines or thresholds of substances for good quality soil suitable for agriculture and housing[36]. For the purpose of this work, we selected the Canadian environmental guidelines, specifically for soil quality testing, as the reference standard.

b. Eau

Several international standards define the normal threshold for drinking water quality, including SFI, ISO, WHO, etc. However, the reference standards or recommended values here are those set by the World Health Organization (WHO)[37].They set guidelines or thresholds for all substances in water fit for consumption. For the purposes of this study, the WHO guidelines were used as the reference standards for testing water samples taken in the neighborhood of the CDM facilities.

III.3.Sample results and analyses

a) Soil analysis

The results of the laboratory analysis seem to support the complaints of the population. Based on the comparison of the metal levels in the three soil samples[38] to the Canadian Soil Quality Guidelines for the Protection of Environment and Human Health[39], all three soil samples contain levels of copper superior to the soil quality guidelines.

36 Remarks by market gardeners in Kamisepe, Kasapa and Kamatete areas in an interview with the AFREWATCH researchers.

37 Remarks by market gardeners in Kamisepe, Kasapa and Kamatete areas in an interview with the AFREWATCH researchers.

38 The rates in % in the laboratory reports were turned into their equivalent rates in mg/kgL.

39 https://www.elaw.org/es/system/files/canadiansoilqualitystandards.pdf

The same going for zinc, two of the soil samples (S1JNQ/KRT and S4JNQ/KRS) have levels of zinc exceeding the Canadian soil quality guidelines for 250 mg/kg zinc[40].

The laboratory analyses also showed that the first soil sample coded "S1JNQ / KRT" also has levels of Nickel and lead that exceed the Canadian recommended standards guidelines. The guidelines for nickel and lead are 50 and 140 mg / kg respectively (See cells I3 and J3).

CHART I : Results of the analysis of soil samples taken around the CDM facilities

Sample	Metal in Mg/Kg (ppm)	Copper (Cu)	Nickel (Ni)	Lead (Pb)	Zinc (Zn)	Zinc (Zn)
Date	N°	GPS Coordinates				
January 7	S1JNQ/KRT	11° 35.359' S, 27° 28.458' E	12900	100	500	2000
January 12	S4JNQ/KR-PT	11° 35.673' S, 27° 28.175' E	1800	< 100	100	100
January 12	S4JNQ/KRS	11° 35.409' S, 27° 28.205' E	5900	< 100	100	600
		Canadian Recommendations for farming soil and residential soil : https://www.elaw.org/es/system/files/canadian-soilqualitystandards.pdf	63	45	140	250
Observations			The level of copperis much higher thanin the Canadian recommendations in all the 3 samples.	The level of Nickel is much higher thanin sample S1JNQ/KRT and lower than in the Canadian recommendations in the other two samples.	The level of Lead is much higher than in sample S1JNQ/KRT and lower than in the Canadian recommandationsin the other two samples.	The level of Zinc is much higher in samples S1JNQ/KRT and S4JNQ/KRS and is lower in sample S4JNQ/KR-PT.

40 https://www.ccme.ca/files/Resources/supporting_scientific_documents/PN_1577_CSQG_Zinc.pdf

b. Water analysis:

The laboratory analyses of three water samples coded: "E2JNQ / KTC, E3JNQ / KCH, E5JNQ / KRS" after collection by AFREWATCH, revealed that the level of mercury in the E3JNQ/KCH sample of 70 µg/L collected in the Field next to the plants and along the waterway far exceeds the WHO recommended value for drinking water quality. For the WHO, the normal threshold is 6 µg/L. Mercury is a powerful neurotoxicant that bioaccumulates in the environment.

These results also demonstrate that the level of lead in the E2JNQ/KTC sample of 22 µg/L, taken in the trenches next to the houses and not far from the plants on the water bed slope exceeds the WHO guideline for drinking water quality. The normal threshold limit for lead is 10 µg/L.

CHART 2: Results of laboratory analysis of water samples taken around the CDM facilities

Water sample	Metals, µg/L (ppb)			Mn	Ni	Pb	Hg
Date	N° of the sample	GPS Coordinates					
January 7	E2JNQ/KTC	11° 35.359' S, 27° 28.458' E	1	217	2	22	< 1
January 7	E3JNQ/KCH	11° 35.224' S, 27° 28.240' E	< 1	1211	30	2	70
January 12	E5JNQ/KRS	11° 35.501 S, 027° 28.2018 E	7	809	6	4	5
		Recommendations on the WHO on drinking water quality : https://apps.who.int/iris/bitstream/handle/10665/254637/9789241549950-eng.pdf	2000	RAS	70	10	6
	Observations					The level of lead exceeds the WHO threshold limit in sample E2JNQ/KTC	The level of mercury exceeds the WHO threshold limit in sample E3JNQ/KCH

III.4.Discussing the impacts

III.4.1.Discussing the Impact of excess of metals on health

Comparing the levels of metals in the three water samples taken by the AFREWATCH research team to the World Health Organization (WHO) recommended values for drinking water quality, it was found that of the three water samples taken (E2JNQ/KTC, E3JNQ/KCH and E5JNQ/KRS), the E3JNQ/KCH sample of 70 µg/L taken in the field next to the plants and along the waterway contains a level of mercury largely exceeding the value recommended by the WHO for the quality of drinking water which is 6 µg/L. According to WHO, since mercury is a powerful neurotoxicant that bioaccumulates in the environment, high levels of this substance in drinking water can have a serious impact on the health of the population consuming this water.

The same observation can be made when comparing the results of the lead laboratory analysis with the WHO guidelines on this substance. The level of lead in the E2JNQ /KTC sample of 22 µg /L taken in the trenches next to the houses and not far from the plants on the slope on the stream bed exceeds the WHO guidelines for drinking water quality whose value is 10 µg /L.

A comparison of laboratory data with water samples taken in the neighborhood of the CDM facilities shows how similar the laboratory data is to the complaints of the communities of Kasapa, Kamisepe and Kamatete areas. According to these complaints, the toxic liquid waste discharged by the mining company into their environment has an impact on their health, as noted in Chapter 2 of this report, which is devoted to how liquids and gases are managed. This situation raises questions about the company's compliance with the provisions of Articles 81 and 204c of the Mining Code and Articles 357 and 358 of the Mining Regulations:

- Does CDM have an ESIA and an ESMP as recommended by the above provisions?
- If so, do these consider the law and standards (OP, IFC, ISO, Canadian Recommendations, etc.)?
- And if so, are these two tools used by CDM in its mining activities?
- Does the Ministry of Mines play its role normally?
- If so, what has CDM done to address community allegations?

III.4.2.Discussing the Impact of excess of metals on the soil and the economy of the communities

Comparison of metal levels in the three soil samples to the Canadian soil quality guidelines for the protection of the environment and human health indicated levels much higher than the soil quality according to the Canadian guidelines. The high amount of copper in the soil puts plants and invertebrates in the soil at a risk of vascular toxicity, which means that such high levels pollute the soil and may impact farming, fish farming, and ranching activities that these populations develop for their survival.

The laboratory report also indicated the presence of zinc exceeding the Canadian guidelines in the two soil samples (S1JNQ/KRT and S4JNQ/KRS). According to the experts, the 250 mg / kg of zinc in the soil brings about toxicity of vascular plants and soil invertebrates.

The S1JNQ/KRT sample also has levels of nickel and lead that exceed the Canadian soil quality guidelines. These levels are 50 mg/kg for nickel and 140 mg/Kg for lead. According to expert opinion, the high level of nickel significantly affects the quality of soil and soil invertebrates[41]. When it comes down to lead, it puts children at risk for health problems[42].

As a matter of fact, the results of the analysis of the different soil samples taken by AFREWATCH researchers seem to confirm the complaints of the populations in Kasapa, Kamatete and Kamisepe areas according to which the liquid waste that CDM dumps in their neighborhood pollutes the soil and their fields and are also likely to be the cause of many lung diseases that their children suffer from[43].This situation questions the respect of articles 81 and 204c of the Mining Code and 357 and 358 of the Mining Regulations.

In short, the analysis of the laboratory results of the soil samples taken by AFREWATCH, as well as the testimonies and the opinions of environmental and public health experts simply show that CDM did not taken consistent measures to spare its local communities in

41 Read the interpretation note of the results of the laboratory that is attached to this report and https://www.elaw.org/es/system/files/canadiansoilqualitystandards.pdf

42 Idem.

43 https://www.business-humanrights.org/fr/derni%C3%A8res-actualit%C3%A9s/r%C3%A9p-d%C3%A9m-du-congo-lentreprise-mini%C3%A8re-cdm-promet-des-caniveaux-pour-drainer-les-eaux-us%C3%A9es-de-son-usine-suite-aux-accusations-de-pollution-par-les-populations

Kasapa, Kamisepe and Kamatete areas from the risks of soil pollution, their vegetation and the impacts of its activities on public health, as recommended by the provisions of the Mining Code and its Regulations on the Environment and the international standards in this field[44]. And assuming that these measures exist, this implies the fact that they are not appropriate and effective.

The AFREWATCH research team could not verify the measures that CDM took to prevent any risk of pollution and to repair any environmental damage. The team could neither contact the CDM's officials, nor access the company's Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP).

The research team made so many attempts to get in touch with the company as of December 22, 2020 through February 24, 2021, but they were unsuccessful.

The populations interviewed by the AFREWATCH researchers say that they do not know everything that happens in the CDM concession. As CDM built its plant, it did not really go to the communities in order to inform them of the positive and negative impacts of its activities in their environment. They have never heard of any Environmental and Social Impact Assessment (ESIA) that was carried out by CDM, neither have they received a copy of this document or its summary.

III.4.3.Discussingthe impact of acids on roofing sheets

The populations in CRAA, Kasapa, Kamisepe and Kamatete areas also complain about the corrosion of the metal roofs of their houses by the acids that are said to be in the dust that comes from CDM plant. They believe that this situation began since the CDM facilities in their living environment.

However, the results of the laboratory analyses prove it.

According to a community member who wanted to remain anonymous and who lives in Kasapa area 200 meters from the CDM facilities on CDM Avenue, "I have been here since 2014 when I got my house built (...) My house is barely 6 years old. Oddly enough, the roof on it looks over 20 years old. Unlike other areas, rust is not attacking their homes like it is here", "unfortunately, we have no one to look at our situation (...) And if these gases can have such an impact on metal, what would we say when it comes down to the human body?".

III.4.4.Discussingthe impact of water on houses, roadsand schools

The communities in Kasapa, Kamatete and Kamisepe areas claim to be victims of the flooding. So, between December 2020 and January 2021, the researchers visited the above-mentioned areas that are downstream from the CDM plant in order to verify the passage of water during the rainy season and its impact on houses, schools and roads. These field visits helped the researchers to touch the reality on the field.

In order to get rid of the large quantities of water in his concession, which occupies the entire upstream part of Kasapa, Kamisepe and Kamatete areas, CDM created more than a dozen large holes between the fence wall and Kasapa area. These large holes serve as drainage channels for the large quantities of water that flood its facilities toward the houses behind its plant up to the Kasapa central prison.

Part of this water is discharged into the large pipe that runs along CDM Avenue, which crosses the 3 areas up to 'Marché Moïse' (the market in Kasapa area). This water invades all the compounds along this avenue since this pipe was blocked by SAFRICAS during the implementation of the leveling works on this avenue that had been destroyed by the heavy trucks supplying CDM with ores coming from the Lupoto mine.

In order to silence the populations in these three areas, CDM launched the construction of drains that were meant to collect the water from its concession and lead it to the Lubumbashi River. But as the work has not been completed, the water released by CDM continues to invade the houses behind this company. These floods have also collapsed the part of the pipeline in front of the CDM facilities. And these erosions are likely to reach the dwellings along the pipeline unless measures are taken.

According to several testimonies by the population, the waste water from CDM paralyzes the traffic as well as all the activities in their areas. To avoid the demolition of their houses, the communities had to create themselves and manually drains to redirect the water towards CDM Avenue.

IV. EFFORTS BY DIFFERENTS STAKEHOLDERS IN THE SEARCH FOR SOLUTIONS

In an effort to find a solution, the communities, accompanied by those in charge of the Kasapa Police Camp, took several steps, particularly with the company, the heads of the areas, the mayor of 'Commune Annexe' and the provincial authorities. The following points detail the efforts made by CDM and the local authorities in response to the complaints and requests of the population.

IV.1.Efforts by CDM

On the side of CDM, no large-scale action has been taken to repair or compensate for the damage that it caused by the degradation of the roads. The exception is that the company provided a few plots of land on CDM Avenue with metal structures used to cross the eroding channel that threatens to cut this road into two parts, with the promise of returning to build gutters that would be used for water drainage[45].

CDM has never gone to the families and the individuals who were victims of floods, collapsed houses, lung and respiratory diseases and finally pollution of crops and fish ponds. That is the way the company might have faced the alleged violations. So, how would the victims benefit from any assistance, reparation or compensation for the overwhelming evidence of damage caused?

CDM's response to the above-mentioned concerns did not come since as all attempts by AFREWATCH's research team to meet with the company's officials were unsuccessful. Several reasons were given for the postponement of the meeting requests. At the last request, no follow-up was given until this report was written.

IV.2.Roles of the local and national authorities

Due to many complaints from the communities of Kasapa and Kamisepe areas, the chairpersons of the entities forwarded the various complaints received from the communities against CDM to the head of 'Commune Annexe', who happens to be their direct superior in the jurisdiction, in accordance with the operating territorial rules. In 2018 Austin KAHOZI, the head of 'Commune Annexe', tried to find solutions by starting direct negotiations with the company's officials with whom he is said to have signed an agreement which unfortunately was never made public[46].

A year later, a commission was set up. It was made up of agents of 'Commune Annexe', dispatched by Austin KAHOZI by the former head in 2018, under the diligence of the former Governor in office at that time. Had, against the advice of the community, verbally noted that the waters that flood the plots of land in Kasapa area come rather from the hills that surround this district and not directly from the installations of CDM.[47] The report sanctioning the work of this commission has never been made public in order to enlighten public opinion on its conclusions. So, the claims of the population of this part of the city of Lubumbashi go unheeded.

In an effort to obtain exhaustive information on the work of this commission and the efforts of the public authorities, the research team attempted to request a copy of the report from both local and provincial authorities, including the communal authority and the provincial Minister of Mines. Although he was one of the Commission members and the head of the jurisdiction that includes CDM and the areas in conflict with the company, the Mayor of the 'Commune Annexe' told the researchers that he had not received a copy of the report[48]. The provincial Minister of the Environment did not meet with the research team, several appointments having been made without success[49].

45 https://www.radiookapi.net/2018/02/02/actualite/en-bref/pollution-lubumbashi-les-habitants-du-quartier-kasapa-appeles-la

46 https://www.radiookapi.net/2018/02/02/actualite/en-bref/pollution-lubumbashi-les-habitants-du-quartier-kasapa-appeles-la

47 https://www.radiookapi.net/2018/01/30/actualite/environnement/lentreprise-miniere-cdm-promet-des-caniveaux-pour-canaliser-les

48 Answer given by the « Commune Annexe » in an interview with the research team 20 December 20, 2020 at his office.

49 Read the copy of hearing request letterswith acknowledgement of receipt by the receptionist of Ministryof Mines attached to this report.

However, it should be noted that, unlike the verbal statements by the authorities, the results in the laboratory report indicate that the globally recognized values of certain metals in the soil and water samples taken in the neighborhood of the CDM facilities are exceeded. Therefore, it is quite possible for the toxic waste dumped by CDM to be the cause of the problems about which the communities complain in the aforementioned areas.

CONCLUSION

This study shows that CDM still has a long way to go in terms of compliance with the provisions of Articles 81 and 204 of the Mining Code and Articles 357 and 358 of the Mining Regulations, according to which holders of mining rights and processing units must behave in an environmentally and socially responsible manner in the area in which they operate through an approved Environmental and Social Impact Assessment (ESIA) and an Environmental and Social Management Plan (ESMP).

This Chinese-owned company processes mining resources in an irresponsible manner that does not respect human rights and the environment, as provided for in the Mining Code and the Mining Regulations, as well as the international human rights and environmental protection standards.

There are two possibilities in this study: either CDM does not have an ESIA or an ESMP to document and manage the negative impacts of its activities on the environment and local communities; or it has one, but neglects to implement it. The victims of these violations are the communities in Kasapa, Kamatete and Kamisepe areas. They face large quantities of water coming from the CDM plant that spill into the three areas. To get rid of these large quantities of water in its concession, CDM built several canals across the walls of its concession. This waste water spreads throughout the plots of land behind its plant.

CDM has not completed the construction of the drains intended to evacuate the water from its concession to the Lubumbashi River, so that this water overflows by invading almost all the roads, flooding the plots and the neighboring schools, the market gardening or the vegetable gardens as well as the fish ponds; hence the erosions which damage the roads and destroy the crops and the breeding farms. Children's schooling is not spared.

The complaints from the populations of the Kasapa, Kamisepe and Kamatete areas, supported by the investigations conducted by AFREWATCH researchers, attest to the fact that by releasing toxic fumes and discharging waste water onto homes, CDM hugely pollutes the environment.
The analysis of the soil samples taken in the 3 areas showed very high levels of copper, zinc, lead and nickel, far exceeding the Canadian guidelines for good soil quality for crops and residential construction.

According to environmental experts consulted by AFREWATCH, high levels of these substances can lead to soil pollution, death of soil invertebrates and childhood illness in humans.
The water samples taken in the same areas show the presence of mercury and nickel at levels higher than the international standards for drinking water.

The toxic fumes released by CDM cause illnesses such as dry and bloody coughs.

Despite the complaints of the local communities and the denunciations of the Civil Society Organizations, CDM continues its activities by violating human rights and polluting the environment in full view of the provincial and national authorities.

ANNEXES

Annex I : Acknowledgement of receipt of the request for hearing letter sent to CDM

CONGO DONG FANG INTERNATIONAL MINING SARL
CDM Réception Couriers

Date	29/1/2021
Heure	12H00
N° d'enreg	
Reçu par	HORANCE
Transmis à	

AFREWATCH
African Resources Watch
Observatoire Africain des Ressources Naturelles

Lubumbashi, le 26 janvier 2021

N/Réf. : ***01***/AFREWATCH/CE/DPDH/**2021**

A Monsieur le Directeur Général de
L'Entreprise minière CDM
à Lubumbashi

Concerne : **Demande d'audience**

« Politique de contribution au développement local et protection de l'environnement »

Monsieur le Directeur Général,

Par la présente, l'Observatoire Africain des Ressources naturelles (AFREWATCH), vient auprès de votre responsabilité, solliciter une audience pour échanger sur les questions relatives à l'objet repris en concerne.

En effet, les échanges que nous sollicitons dans l'intervalle du 26 janvier au 03 février 2021 aux heures de votre convenance, vont particulièrement porter sur les efforts fournis par votre entreprise pour soutenir le besoin de développement local et les mécanismes mis en place pour assurer et se rassurer de la protection de l'environnement.

Pour votre gouverne, AFREWATCH est une ONG basée à Lubumbashi et travaillant sur la gouvernance des ressources naturelles en Afrique. Et cette rencontre rentre dans le cadre de son programme de collaboration avec le secteur privé pour l'exploitation responsable des ressources naturelles.

Espérant que la présente retiendra votre particulière attention, nous vous prions d'agréer, Monsieur le Directeur Général, l'expression de notre parfaite considération.

POUR LE COMITE EXECUTIF,

ILUNGA MUKENA Richard
Directeur du Programme des Droits Humains

AFREWATCH
African Resources Watch
Observatoire Africain des Ressources naturelles

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Annex 2: Results of the laboratory analysis of the water and soil samples taken around CDM

SAMPLES FROM LUBUMBASHI													Comments
SOIL SAMPLES		Metals, mg/kg (ppm)	Cu	Co	Fe	Mn	Al	Ni	Pb	Zn	Ca	Mg	
Date	Sample ID	Coordinates											
07-janv	S1JNQ/KRT	11° 35.359' S, 27° 28.458' E	12900	900	50300	900	14800	100	500	2000	6900	5500	Residential road originating from the site of discharges from factories
12-janv	S4JNQ/KR-PT	11° 35.673' S, 27° 28.175' E	1800	800	70300	1000	27700	< 100	100	100	8600	2700	Well for domestic use not very far from factories but on the path of water from factories or rains
12-janv	S4JNQ/KRS	11° 35.409' S, 27° 28.205' E	5900	900	64000	800	22600	< 100	100	600	16600	5900	Runoff water on the road, not too close to the factories but next to the residential plots but with a downward slope from the factories to the plots
19-mars	S/KAS-DJU/19/03/21-01	11.59418° S, 27.41089 E	3500	600	53700	600	21200	300	200	200	17600	3500	Echantillon du sol prélevé au N° 15, avenue Djuwa kali, quartier Kasapa (Soil sample taken at N ° 15, avenue Djuwa kali, Kasapa district)
19-mars	S/CAMP/19/03/21-01	11.59688° S, 27.46427° E	< 100	100	29700	400	17300	100	100	< 100	1600	600	Le quartier Kasapa, derrière le camp militaire et non loin du marché Moise (The Kasapa district, behind the military camp and not far from the Moise market)
		Canadian Soil Quality Guideline	63	none	none	none	none	45	140	250	none	none	
		Residential Land Use											
		See: https://www.elaw.org/es/system/files/canadiansoilqualitystandards.pdf											

Annex 2 : Results of the laboratory analysis of the water and soil samples taken around CDM

WATER SAMPLES		Metals, µg/L (ppb)	Cu	Co	Fe	Al	Cr	Mn	Ni	Pb	Zn	As	Cd	Ca	Mg	S	Na	K	U	V	Hg
Date	Sample ID	Coordinates																			
07-janv	E2JNQ/KTC	11° 35.359' S, 27° 28.458' E	1	188	29	19	<1	217	2	22	33	4	<1	36810	12030	449	3750	3857	<1	<1	<1
07-janv	E3JNQ/KCH	11° 35.224' S, 27° 28.240' E	<1	2367	1	35	<1	1211	30	2	69	11	<1	79660	18550	1018	5826	4000	1	5	70
12-janv	E5JNQ/KRS	11° 35.501 S, 027° 28.2018 E	7	503	16	4	1	809	6	4	247	4	<1	53140	28870	830	10670	6232	<1	<1	5
19-mars	E/CAMP/19/03/21-01	11.59656° S, 27.46465° E	62	1705	145	<1	<1	3316	23	<1	196	<1	<1	32700	72980	1365	22750	8628	<1	<1	41
19-mars	E/KAS/V-19/03/21-01	11.59012° S, 027.47014° E	60	372	178	<1	<1	1444	7	<1	26	8	<1	52090	77340	1196	34100	12830	<1	<1	70
19-mars	E/KAS-RES/19/03/21-01	11.58947° S, 27.47348° E	53	322	65	<1	<1	1207	3	<1	32	<1	<1	33360	26280	239	21720	10790	<1	<1	42
		WHO Drinking Water Quality	2000	none	none	none	50	none	70	10	none	10	3	none	none	none	none	none	30	none	6
		Guideline Values																			
		See: https://apps.who.int/iris/bitstream/handle/10665/254637/9789241549950-eng.pdf																			

Annex 2 : Results of the laboratory analysis of the water and soil samples taken around CDM

Se	P	B	Be	Ba	Mo	Sb	pH	TDS	TSS	Comments
<1	59	<1	<1	42	<1	1	6,8	161000	13000	Slice next to houses and not far from factories on the slope on the bed of water
<1	103	<1	<1	46	<1	1	6,8	282000	51000	Fields next to factories and along the water path but
<1	52	3	<1	60	1	1	7,1	270000	68000	Run-off water (non-lawful pipeline from factories and next to residential plots)
563	<1	37	<1	38	<1	5	6,7	384000		Le Canal se trouvant le long de l'usine de CDM non loin de L'Eglise EBENEZER dans le quartier Kasapa (Kanseya) (The Canal along the
602	171	6	<1	180	1	<1	7,2	476000		CDM factory not far from L'Eglise EBENEZER in the Kasapa district (Kanseya))
263	70	9	<1	120	15	5	7,2	235000		Canal se trouvant sur la route résidentielle nos de l'usine de CDM. (Canal located on residential road nos of the CDM plant)
40	none	2400	none	1300	none		<6, >9			

Annex 3 : Results of the laboratory analysis of the roofing sheet samples taken off houses around CDM

T/KAS/20-03-21/01; G-MIC-12159/21-M18:

Analyte	Result	Method Detection Limits (MDL)	Units
Bromide	<DL	10.	µg/L
Chloride	1,800.	10.	µg/L
Fluoride	1643.	10.	µg/L
Nitrate	105.	10.	µg/L
Phosphate	<DL*	20.	µg/L
Sulfate	82,800.	20.	µg/L

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AFREWATCH
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