



CENTRO DE INTEGRIDADE PÚBLICA
Anticorrupção - Transparência - Integridade

EXTRACTIVISM WHICH DESTROYS THE ENVIRONMENT

UNCOVERING ENVIRONMENTAL CRIMES COMMITTED BY
CHINESE MINING COMPANIES IN MOZAMBIQUE



Maputo, February 2024

Title: Extractivism which destroys the environment

Uncovering environmental crimes committed by chinese mining companies in Mozambique

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Executive Summary

The extractive industry in Mozambique has generated revenue for the state and is currently one of the main drivers for the country's economic growth. In the first quarter of 2023, it showed a growth rate of 38.02 per cent against a forecast of 23.1 per cent.

Nevertheless, this industry has been responsible for the social, economic and environmental damage caused to host communities, which have reported potential cases of environmental crimes, with harmful effects on the climate, human health and safety and the associated ecosystems. This situation worsens social inequalities, poverty, distrust of government institutions by local communities, among other consequences.

Despite several complaints made in the national and international media, the government and justice authorities have paid little attention to the environmental and social problems caused by the extractive industry. In order to contribute to the resolution of these social and environmental concerns, CIP carried out field research in the host communities of mining projects implemented by three mining companies, namely Dingsheng Minerals (Gaza), África Great Wall Mining Development Company Ltd (Zambézia), and Haiyu (Mozambique) Mining Co. Lda (Nampula). The study aimed at assessing the impact of these companies' actions on the environment and the lives of local communities and check this against the complaints reported on various social platforms.

The study took place from August to December 2023, through journalistic research techniques and consisted of four phases. The first was a literature review and preparation for the fieldwork, and involved consulting articles, technical reports and environmental impact studies, official documents, national and international legislation and other relevant documents in order to provide a theoretical framework. The second phase was the collection of field data through direct observation, interviews with sector activists, environmental protection experts and activists, state agents and members of local communities. The third phase involved analysis and discussion of field results, which consisted of identifying environmental and social irregularities and comparing them with national legislation. The final phase was the drafting of the report. The interviews were carried out by free consent of the participants. By choice of some of the interviewees, and due to professional ethics, the identity of some sources was hidden, as a way of protecting them against possible reprisals.

The study found significant evidence associated with poor practices by mining companies in the exploration areas. The data obtained in the field shows that the companies have caused adverse environmental and social impacts, which include the destruction of sensitive habitats, environmental pollution, inappropriate resettlement and/or unfair compensation in the resettlement process. Contrary to the expectations of extractive companies to boost local development, it was noted, in some cases, that there was a reduction in the quality of life of some communities, due to the loss of means of subsistence, such as land for agricultural activity, and difficulty in accessing water, firewood, construction materials, among other situations.

Considering the main findings of this research, it is recommended that urgent and energetic actions be taken to curb environmental and social problems, especially at a time when climate change is being felt at global and local level. For that purpose, the government, the companies involved, national organisations and the international community must play their part in ensuring environmental and social protection. Therefore, it is recommended that:

- (1) *the Mozambican government* strengthens environmental protection measures and the rights of local communities; reevaluates investments that represent unacceptable environmental costs to the country; strengthens the fight against corruption, in this specific case in the sector in question; and creates the necessary conditions for effective monitoring and penalisation of offenders;
- (2) *the companies involved in environmental abuses* - comply with national and international legislation and good practice in the exploitation of resources;
- (3) *the government authorities responsible for the environmental mining sector* - rigorously monitor the activities of mining companies and assess their environmental impact, taking the necessary measures in the event of infringements;
- (4) *the Attorney General's Office* - investigate and hold responsible those involved in environmental crimes;
- (5) *the environmental organisations* - strengthen advocacy for better environmental and social protection;
- (6) *the academia* - carry out research on the real environmental impacts of mining projects, and beyond;
- (7) *The international community* - engage in diplomacy with the Mozambican government in favour of greater respect for environmental and social issues.

1. Introduction

Environmental protection is one of the questions in fashion in political discourse in Mozambique, particularly over the past decade. In this period, the country has become one of those most affected by extreme phenomena¹, ranging from floods to droughts. In addition to prominence in political discourse, environmental questions have earned the Mozambican government, and particularly the current President of the Republic, Filipe Nyusi, several distinctions, particularly in the last eight years.

In 2021, for example, Mozambique became the first country in the world to receive payments from a World Bank trust fund for the reduction of emissions from deforestation and forest degradation, commonly known as REDD+, in recognition of the efforts of the Nyusi government to reduce carbon emissions.

According to the World Bank, to receive the payment, Mozambique presented an official monitoring report confirming the reduction in emissions and, between September 2020 and May 2021, independent verification was undertaken (World Bank, 2021).

Also in 2021, Mozambique's admission to the Giants Club² also meant recognition of the efforts made by the country and by the President of the Republic in the area of the environment, climate change and the conservation of nature. In August 2022, the Mozambican President himself stated in Maputo, during the High Level Session of the Regional Conference on the Sustainable and Integrated management of the Miombo Forest, that Mozambique is "a champion of climate action" (Nyusi, *apud* United Nations, 2022).

Individually, President Filipe Nyusi, in the past seven years, received three awards for the protection of biodiversity and the environment. One of the main awards that directly recognises the efforts of President Nyusi in the protection of the environment was granted in September 2022 by the Eduardo Mondlane University (UEM), the largest and oldest university in the country. This is an honorary doctorate in the area of the Conservation of Biodiversity and Climate Change.

In the ceremony awarding this title, the Vice-Chancellor of the UEM, Manuel Guilherme Júnior, mentioned as the works of Filipe Nyusi: "effective measures" in "conservation and in mitigating the effects of climate change (...) and of pollution of the oceans and seas", "ensuring a sustainable blue economy", as well as "governance of natural resources and of the environment in favour of society" and "governance in favour of the conservation of biodiversity" (UEM, 2022).

The sponsor of Filipe Nyusi in the granting of the UEM's Honorary Doctorate was the former Kenyan President, Uhuru Kenyatta, who, on the occasion, declared that the Mozambican President and his government have implemented legal reforms which have driven the conservation of biodiversity in various of the country's protected areas. Kenyatta pointed to the admission of Nyusi to the Giants Club, in July 2021, as a recognition of his efforts in the area of the environment, climate change and the conservation of nature, although focused on the protection of elephants.

"We are facing a true hero who, through his achievements, transcends the borders of Mozambique. His achievements should inspire young people and professionals, mainly in the area of conservation, biodiversity and climate change", said the former Kenyan president (*apud* UEM, 2022), who is himself a member of the Giants Club.

But President Nyusi has received other distinctions which, although not specific to environmental protection, are linked to biodiversity and to the protection of nature in its most varied dimensions. They include his distinction, in the United States of America, in September

1 In 2015, for example, Mozambique was classified in the Global Climate Risk Index of GermanWatch, as the country most affected by climatic phenomena, in a year in which 351 deaths were recorded that were attributed to extreme phenomena (RFI, 2016). In 2021, Mozambique was again classified as the country in the world most vulnerable to climate change, after, in 2019 (the last year analysed in the Index published in 2021), it had been struck by cyclones Idai and Kenneth (Lusa, 2021). Idai, for example, was considered the most deadly tropical cyclone and with the highest costs in the southwestern Indian Ocean, causing a thousand deaths in three countries (including Malawi and Zimbabwe) and causing economic damage of 1.802 billion euros (GermanWatch, *apud* Lusa, 2021).

2 The Giants Club is an international forum of political leaders, business people, financiers, philanthropists, and scientists, all committed to the preservation of biodiversity (Ledger, 2021).

2016, the second year of his first year of office, with the award of merit in conservation by the *International Conservation Caucus Foundation* (AIM, 2016). In February 2022, Filipe Nyusi was appointed, by the African Union Commission, as the Champion of the African Union for Natural Disaster Risk Management (Presidency of the Republic of Mozambique, 2022).

Concern for environmental preservation has dominated political discourse, but Mozambique is experiencing several attacks on the environment, a fact that could jeopardise or, at some point, undermine the international recognition that the country has been receiving. It is in this context that this work emerged, putting into question the increase of environmental and social problems at a time when the focus is on the promotion of environmental justice.

In a universe of damages to nature, the research took as sample three case studies associated to the extractive industry, representing the three regions of the country: Moma, Nampula, in the north, Inhassunge, Zambézia, in the centre, and Chongoene, Gaza, in the south. The extractive industry in Mozambique is one of the main driving forces of the country's economic growth, with a growth rate of 38.02 per cent in the first quarter of 2023, against the 23.1 per cent originally forecast.

Nevertheless, this sector has been responsible for causing social, economic and environmental damage to host communities, what led them to report potential cases of environmental crimes, with harmful effects on the climate, human health and safety and the associated ecosystems. This situation exacerbates social inequalities, poverty, distrust towards government institutions by local communities, among other consequences.

Despite several complaints in the national and international media, the government and justice authorities have paid little attention to the environmental and social problems caused by the extractive industry³. In order to contribute to raising awareness and perhaps resolving these social and environmental concerns, CIP carried out field research in communities hosting mining projects, implemented by three mining companies, namely Dingsheng Minerals (Gaza-Chibuto/Chongoene⁴), Africa Great Wall Mining Development Company Ltd (Zambézia- Inhassunge), and Haiyu (Mozambique) Mining Co. Lda (Nampula-Moma). The study aims to assess the impact of these companies' actions on the environment and the lives of local communities, and to compare this information with the complaints reported on various social platforms.

However that may be, the truth is that, while the question of environmental protection dominates political discourse, and while the Government and the President receive awards, Mozambique has been recording various attacks against the environment. This is the context for the present work, which questions the commitment of the government, led by President Nyusi, to environmental causes.

This work does not begin from the simplistic approach that environmental abuses in Mozambique are a new problem linked only to the governance of Filipe Nyusi. Much less does it seek to withdraw legitimacy from the current President in being recognised as a champion in environmental matters. On the contrary, it recognises that environmental crimes in the country are a problem that has lasted for more than a decade, and has been the subject of various debates, studies and journalistic articles.

Hence, and because the research does not intend to be redundant, it is centred on the violations committed during the governance of the “champion” in environmental matters, a period in which these occurrence have become worse, particularly with the approval of new extractive projects but without any noteworthy concern by the public entities in safeguarding environmental questions. In a universe of various attacks against nature, this research took as its sample three case studies, linked to mining, to show how, like the previous governments, the governance of President Filipe Nyusi has been equally marked by various violations that constitute environmental crimes, including the destruction of dunes and of native vegetation, the pollution of waterways and even the blocking of rivers and lakes.

³ In fact, the cases under study are all Category A projects, which, in the light of the Regulation on the Process for the Environmental Impact Assessment (RAIA), approved by Decree 45/2004 of 29 September, one of the main instruments for implementing the Environmental Law, are considered as those with the greatest impact on the environment.

⁴ In the case of Gaza, the mines are located in the district of Chibuto, but the destruction of dunes occurred in the district of Chongoene.

The case studies concern the exploitation of heavy mineral sands in the districts of Moma (in Nampula province), Inhassunge (in Zambézia), and Chibuto/Chongoene⁵ (in Gaza), all by Chinese companies, namely Haiyu (Mozambique) Mining Co., Lda., Africa Great Wall Mining Development Company Ltd, and Dingsheng Minerals. Among various reasons, it was decided to study mining activities because the country has received several investments in this area, in recent years, without any appreciable concern for protection of the environment.

Dingsheng Minerals, is a company that began to operate in Mozambique in 2018. In 2021, the company destroyed dunes by the Chongoene beach, the place from which it intends to export the heavy sands it is exploiting in the neighbouring district of Chibuto (CCIE, 2021).

In Inhassunge, the Africa Great Wall Mining Development Company, Lda., which also began open cast mining of heavy sands in 2020, devastated a sensitive ecosystem of native vegetation, as well as polluting the water, soil and air, which are fundamental for biodiversity, and for human survival.

In Moma, Haiyu (Mozambique) Mining Co., Lda., a company which, in 2021, extended its operations to this district (Tovele, 2022), is also, as we observed, ruining dunes, destroying native vegetation and even blocking natural watercourses in a coastal area, resulting in great environmental damage.

The study was carried out from August to December 2023, based on journalistic research techniques, and consisted of four phases. The first was a literature review and preparation for fieldwork, and involved consulting articles, technical reports and environmental impact studies, official documents, national and international legislation and other relevant documents in order to create a theoretical framework. The second phase consisted of collecting field data through direct observation, interviews with sector activists, environmental protection experts and activists, state agents and members of local communities. The third phase involved analysis and discussion of the field results, which consisted of identifying environmental and social irregularities and comparing them with national legislation. Finally, phase four was the drafting of the report. The interviews were carried out by free consent of the participants and by the option of some of the interviewees, the identity of some sources was hidden as a way of protecting them against possible reprisals.

The report is structured into four chapters. Following this introduction, which includes methodological considerations, Chapter II presents the results of the field research, subdivided into the three case studies. Chapter III describes the profile of the companies involved in practices that pose environmental and social problems, which have a common denominator: foreign companies with Chinese capital, under the impassive eyes of the Mozambican authorities, following the same pattern of irregularities in foreign investment in Mozambique.

The article recommends that urgent and vigorous actions be taken to halt environmental violations, particularly at a time when climate change has shown us its most devastating face. Among other factors, there stands out the fact that human aggression against the environment reduces the possibility of mitigating extreme events.

⁵ In the case of Gaza, the mines are located in Chibuto district, but the destruction of the dunes was noted in Chongoene district.

2. Violations that contradict the commitment to environmental protection

In April 2021, a case of destruction of dunes, on the Chongoene beach, in Gaza province, alarmed the country, particularly those civil society organisations that work on environmental protection. In public opinion, the case was presented as a paradigmatic example of an assault against the country's environment. However, after direct observation on the ground, as part of this research, it can be said that, based on the scale of the destruction noted, the case of Chongoene is one of the least serious in the country.

In the more remote areas of Mozambique, the violations are much more serious. Moma and Inhassunge are just some of the most blatant examples. But, to some extent throughout the entire country, the scenario is one of shocking assaults against the environment, contradicting the legislative framework in force, from the Constitution of the Republic itself (CRM) to the ordinary laws, such as the Environment Law, the Environmental Impact Assessment Regulations, and the Regulations on Pollution and the Protection of the Marine and Coastal Environment, the Regulations for the Management and Planning of the Coastal Zone and Beaches, and the Environmental Regulations for Mining Activities, which make protection of the environment one of the priorities of the Mozambican state.

The CRM, for example, states, in Article 90, paragraph 1, that “all citizens have the right to live in a balanced environment and the duty to defend it”. Paragraph 2, of the same article, says that “the State and the municipalities, with the collaboration of the associations in defence of the environment, shall adopt policies to defend the environment and ensure the rational use of all natural resources” (CRM, 2004). The need for the State to promote initiatives to guarantee ecological balance and the conservation and preservation of the environment are covered by Article 117 of the CRM (*ibid*).

For its part, Law no. 20/97, of 1 October (Environment Law), goes further in establishing, in paragraph 4, line C, that environmental management should prioritise the establishment of systems to prevent acts that damage the environment, so as to avoid significant or irreversible environmental impacts, regardless of any scientific certainty as to whether such impacts will happen. Article 10 of the Environment Law also determines that the Government should establish environmental quality standards so as to ensure sustainable use of the country's resources.

For Serra (2012), while the CRM raises the environment to the category of a fundamental legal asset of the community, alongside other classical assets, such as the right to life, to physical integrity, and to the various freedoms, among others, forming what is called the authentic “Environmental Constitution”, the Environment Law works as a kind of Framework Law. This Law defines a series of fundamental concepts and principles for environmental management: i) in fixing the basic institutional framework for environmental protection, ii) in the choice of a general norm that prohibits all activities that cause environmental degradation, beyond the legally defined limits (notably for pollution), iii) the enunciation of special environmental protection norms (with special stress on the protection of biodiversity), iv) in envisaging a range of environmental prevention instruments (environmental licensing, the environmental impact assessment procedure and environmental audits) and v) in the characterisation of the system of offences, penalties and monitoring (Serra, 2012: 14 & 15).

For RMS Consultores Lda (2014: 78), the concept of integrated vision is developed and incorporated into our legislation by the Environment Law, which defines as a fundamental principle of our right to the environment, “the global and integrated vision of the environment, as a set of interdependent ecosystems, natural and built, that must be managed in such a way as to maintain their functional balance without exceeding their intrinsic limits”.

In these terms, it can be inferred that the concept of integrated environmental management means adopting measures to protect nature, with a view not only to protecting the species that comprise it, but also the ecosystems that allow their survival (RMS Consultores, Lda, 2014: 78).

Meanwhile, the National Environmental Policy, approved by Resolution No. 5/95, of 3 August, among several objectives,

aims to: i) guarantee quality of life for citizens; ii) guarantee the management of natural resources and the environment in general, so that they maintain their functional and productive capacity for the present and future generations; iii) develop environmental awareness among the population to enable public participation in environmental management; iv) guarantee the integration of environmental considerations into socio-economic planning, promote local community participation in planning and decision-making about the use of natural resources, protect ecosystems and essential ecological processes, and integrate regional and global efforts in the search for solutions to environmental problems (RMS Consultores, Lda, 2014: 75).

In addition to the national legislation, the country has signed international instruments on the protection of the environment, such as the African Convention on the Conservation of Nature and of Natural Resources (through Resolution no. 18/81) which seeks to increase environmental protection and promote the conservation and sustainable use of natural resources (MITADER, 2015; UA, 2017).

Mozambique is also a signatory of the Algiers Convention (ratified by Resolution no. 18/1981) which seeks to strengthen environmental protection, foment conservation and the sustainable use of natural resources and harmonise and coordinate policies in these areas. This Convention also recognises the vital importance of natural resources, flora, fauna, water and soil for the welfare of African populations (SIBMOZ and MITA, undated).

The country has also ratified the Convention on Biological Diversity (through Resolution no. 2/94) which is dedicated to the promotion of sustainable development and recognises that biological diversity goes beyond plants, animals, micro-organisms and their ecosystems - it also includes people and our needs for food security, medicines, fresh air and water, shelter and a clean and healthy environment in which to live (ibid).

But, in practice, compliance with these principles is weak and, in some cases, virtually non-existent, as is shown in the following chapter which presents the field results.

In the particular case of mining, the object of this research, it is necessary first of all to explain that the environmental changes committed go beyond the minimum acceptable in the degradation of nature, which is assumed in any mining activity.

When, in addition to the devastation of native vegetation, mining involves the destruction of dunes that are sensitive to the maintenance of ecosystems and biodiversity, and even the obstruction of rivers and lakes, we are dealing with serious attacks against the environment which cannot be acceptable in the name of exploiting any resources whatever.

On the other hand, mining in particular, apart from the high environmental cost of these activities, Mozambique gains little in terms of revenue. This is due to a range of factors, including the low capacity of the government to inspect the activities and tax evasion schemes by the mining companies.

By way of example, accounts made in 2020 by the weekly SAVANA, with the help of specialists from the sector and based on data from the Extractive Industry Transparency Initiative (EITI), a global standard for promoting transparency and the open and responsible management of natural resources, which Mozambique joined in 2009 – indicate the non-payment by Haiyu (Mozambique) Mining Co., Lda., of various taxes in different periods (Nhantumbo, 2020).

From 2012 to 2016, for example, this company, which is now destroying the environment in Moma, did not pay the company profit tax (IRPC), the main source of revenue in the country. According to Nhantumbo (2020), the company also did not pay Personal Income Tax (IRPS), for 2017, and the Surface Tax, in 2014 and in 2016. From 2012 to 2018, only once, in 2017, did Haiyu comply with its obligation to pay the mining concession fee, paying 12,000 meticaís. According to the source, in all Haiyu paid in various taxes, the following totals: 3.7 million meticaís, in 2012; nine million, in 2013; eight million, in 2014; four million, in 2015; a further four million, in 2016; eight million, in 2017 and nine million in 2018 (Nhantumbo, 2020).

For its part, Amnesty International (AI) calculates that from 2012 to 2015 Mozambique lost USD 13 million [520 million

Meticaís at the exchange rate of the time] in taxes that were not paid by the Chinese company. Sambo (2018) mentions that, in 2015, when Haiyu was the only exporter of heavy sands to China from Angoche district, in Nampula province, where it began operations in 2011, some 72% of the minerals exported to the Asian giant, assessed at USD 40.8 million (two billion Meticaís) were not accounted for or taxed in Mozambique (Sambo, 2018, and Nhantumbo, 2020).

Meanwhile, the Africa Great Wall Mining Development Company Ltd, paid the Mozambican state, in 2020-2021, only about 160 million Meticaís for exploitation of the heavy sands on Olinda Island (Mate, 2022). These contributions, from Haiyu (Mozambique) Mining Co., Lda., and from Africa Great Wall Mining Development Company Ltd, show that the revenue Mozambique gains from these activities is far from compensating for the environmental costs they represent, even though these are not easy to measure numerically.

As if this were not enough, for the local communities the benefits from these companies are also almost zero. This is also a pattern known from the history of major investments in Mozambique. Not even in the compensation and the resettlement which are basic rights of communities which lose their livelihoods to companies are their rights respected as will also be shown in this work, although it is not the focus of the research.

2.1 The case of Moma

Moma district is located on the coast of Nampula province. According to the General Population Census of 2017, the district has 360,582 inhabitants and covers an area of 5,752 km² (INE, 2021). It is a district rich in mineral resources, notably heavy sands. It is in this district where, since 2021, Haiyu Mining has been exploiting these valuable resources⁶ used, among other purposes, for the naval and aeronautical industries. According to the project's Environmental Impact Assessment, the total area of the mining concession is 10,000 hectares.

Haiyu's operations in Moma are being carried out next to a partial protection zone, in this case a strip of the coastline⁷. The same joint Environmental Impact Assessment Report (REIA) of the Environmental Management Plan (PGA) and Environmental Monitoring Plan (PMA) for Haiyu's activity admits that the region where the heavy sands are being exploited is environmentally sensitive, as it is located in a place not far from biomes and springs, which, in itself, justifies the adoption of an environmental management strategy. In fact, the district of Moma is within the Environmental Protection Area of Primeiras and Segundas Islands (APAIPS), one of the largest, if not the largest, coastal and marine protection area in Mozambique. Although articles 8 and 9 of the Land Law determine that special zones, such as strips of the coastline, can be granted for the exercise of certain activities by means of special licences (Tovele, 2022), what is happening on the ground poses serious environmental risks.

CIP noted that on the land Haiyu is exploiting in Moma, there are several, extensive areas with various processing units. In some cases there are around a dozen processing units per area.

⁶ In addition to Haiyu Mining, the heavy sands in Moma are being exploited by the Irish mining company Kenmare.

⁷ Nevertheless, the Environmental Impact Assessment Report does not identify any impacts that would prohibit the implementation of this project. On the contrary, it sets targets for the prevention and elimination of what it calls "environmental non-conformities". The Joint Report of the Environmental Impact Assessment (REIA), Environmental Management Plan (PGA) and Environmental Monitoring Plan (PMA) for the Haiyu project in Moma was drawn up by Eng. Amílcar V. Marremula, who is described in the document as an Independent Environmental Consultant, holding the Licence No. 46/2018 Nampula. The report is of September 2019, but at least until April 2020, Amílcar Marremula was interviewed by the SAVANA newspaper on behalf of the management of Haiyu company (Nhantumbo, 2020: 16), a situation that is likely to raise conflicts of interest. "As part of the Haiyu Mozambique Mining, Lda. project, a contract was signed for the provision of services, called: "Provision of Services for the Preparation of Environmental Impact Studies for Empresa Haiyu Mozambique Mining, Lda, Concessão Mineira 7239C." (contracting entity) and the Individual Environmental Consultant "Eng. Amílcar V. Marremula" (contracted entity)", reads the report dated around seven months before Amílcar Marremula gave interviews on behalf of the company for which he was contracted to provide independent environmental consultancy services.

Amilcar Marremula



The areas, located in the locality of Mpago, in the Administrative Post headquarters of Moma District, include the communities of Mponha, Nacalela, Muripa, Natupi, Coropa and Mpuitine. Technically, the area is designated, in the joint Environmental Impact Assessment Report (REIA), Environmental Management Plan (PGA) and Environmental Monitoring Plan (PMA), as Mining Concession 7239C. According to the report, the concession, which covers 10,000 hectares, is expected to invest UDS 10 million.

Some of the areas covered by the exploitations underlie each other. In Coropa, for example, there were 20 small sand processing units by January 2023. When CIP was there, 19 of them were functional, while the twentieth, which was still in the final stages of assembly, was waiting for more sand to be processed.

According to the local population, Haiyu began operating effectively in Coropa in early 2022. From the beginning, the Coropa's operations have been accompanied by several damages to the environment, which go beyond the minimum acceptable

effects of investments of this kind.

At the site, there are even blatant cases of obstruction of natural watercourses. One of the main rivers, which was supplying the village for various purposes, including fishing and drinking water, in addition to the function of environmental balance, was obstructed by the Chinese to make way for their activities.

What was previously a normal water course is now interrupted – destroyed by Man. In its place are potholes, piles of sand and units to process the bulk sand. From which a fine, black and shining sand is extracted, which is the valuable ore that bears the name of “heavy sands”.

There is restricted circulation within the mining area of the Chinese. The residents cannot say for certain how long the river is but, according to them, it used to take about three hours to walk from Natupi to Namaizi, the areas that were covered by the water course.

“They cut the rivers to assemble factories”, laments 39 year old Domingos Jamal, a native of Coropa, who is seeing, for the first time, the rivers of his village dry up. Amade Ussene, the fictitious name of a youth who as a worker on the undertaking of the Chinese, cannot be identified for fear of suffering reprisals from his employers, explains that, over the 30 years of his life, he has never before seen the rivers of Coropa dry up.

With his index finger pointing ahead, he says: “they cut that river which had never dried up. Now there is just the bed. The other one, over there, is completely dry”. Without being asked to repeat himself, he does so anyway: “this river here did not use to dry up. But now it's cut. Only ponds have remained”. It is the disappointment of a people who are seeing, over the years, how what used to be their environment is being torn up by “the lords of capital”.

Close to the area where Mozambican workers are making the final arrangements for the start-up of factory number 20, technically known as “hydraulic boat” (RMS Consultores, Lda, 2014: 19), a banana plantation is dying. Its poor appearance, with the green giving way to a yellowish colour, indicates the lack of water caused by the blockage of one of the water branches that fed these plants, which need more liquid.

From the village to the mining area, on an access path that was previously frequented by pedestrians and motorcyclists, the Chinese had to open a route for the passage of vehicles, particularly trucks. In fact, it was necessary to commit another assault on the environment, cutting down leafy trees, some of them a century old, to open the road. With everything lost, the residents even complain of noise pollution. “There is noise that even reaches the neighbourhood”, says a source working at the company.

Argentina Agostinho does not know how old she is, but she knows that since she was a child, the rivers running near her house were one of the sources for her livelihood. “We fetched water and fish there, we washed clothes there, we took baths there, but they have blocked it”, she says, sitting in the shade of a tree at her house, not far from the river.

She adds that when the main river dried up, the community fetched water from a small channel, but that also dried up. Now they must walk long distances to fetch the precious liquid that is indispensable for human life. As if this were not enough, in Coropa, the operations are undertaken close to the sea, a few metres from the waters of the Indian Ocean.

Apart from Coropa, Haiyu also extracts sand in the Miria area, also in Moma district. This is an extensive area where, in addition to cutting down native vegetation, the Chinese have also destroyed dunes to open roads connecting the mines to the warehouse and port. Miria has become a kind of “Chinese territory”. They have turned the area into an enclave, restricting the circulation of people and goods⁸. Miria is an intermediate zone between the various mines of Haiyu scattered though Moma district and the warehouse and the quay for exporting the ore, built by the Chinese in an area known as Inchaque.

In Inchaque, where in addition to the warehouse and the port, Haiyu has its main camp in Moma, the Chinese have also committed serious assaults against the environment. Assembling these undertakings implied destroying a rich ecosystem of mangroves, a kind of plant that provides a range of ecosystem services to man and to nature, such as: coastal protection against strong winds and cyclones, stabilisation of the soils against erosion, and biofiltration of pollutants. Furthermore, the mangroves have cultural value and sequester carbon, thus contributing to mitigating climate change. They also serve as a nursery for the reproduction of various marine species (Biofund, 2021).

The only mangrove surviving in Inchaque is around the undertakings which are close to one of the main fishing settlements in Moma. Furthermore, the streets which provide access to Miria and Inchaque, and from here to Coropa and vice-versa, have been bulldozed. Their improvement implied yet another attack against the environment: Haiyu dug deeply to extract the red sand used for the surface of the access roads. One of these excavations caused problems of erosion which threatened to bring down trees and destroy farms which are the main sources of livelihood for the local communities.

As if this were not enough, to reach Miria and Inchaque, from the district capital, Moma town, one must pass through a residential area, which causes another environmental problem directly affecting the communities. This is pollution from dust at the centre of Mponha village, which is at the entrance to the mines, the warehouse and the port.

From Mponha, a village located outside the corridor linking the various mines and the Haiyu warehouse, trucks carrying heavy sands do not necessarily pass. But from here heavy vehicles carrying logistical equipment for the operations of the Chinese company do pass, as well as light vehicles transporting the executives and other company workers, destined for the mines of Miria and the Inchaque camp. In addition to the dust caused by the circulation of these vehicles along a dirt road, the situation in Mponha was worsened because the Chinese intervened in the road, including by placing red sand. Hence, whenever they drive past, shut into their air conditioned vehicles, a drama begins for the population. Few escape from the dust kicked up by the vehicles of “the Chinese”. They paint almost everything.

The reddened aspect of the houses, visible to the naked eye, denounces this martyrdom through which the residents are passing. Domestic utensils also do not escape, even inside the houses, built out of non-conventional material. Whenever vehicles drive through Mponha village, the air is polluted. 27 year old Domingas Macedo is a native and resident of Mponha. She says that every day she is attacked by the dust. According to her, with the intense movement of the vehicles of the Chinese through the village, the residents, who have come to inhale the dust frequently, are frequently stricken by respiratory diseases, particularly coughing.

“The dust enters the houses, and even dirties our clothes, and everything inside. Outside, we are dirtied all the time. We usually have diseases here”, she says, revolted by the behaviour of Haiyu. 37 year old Janeiro Manuel, is also a native and resident of Mponha, and also knows the environmental cost of the operations of Haiyu. “It’s just dust and more dust. And the dust dirties everything: clothes, houses, everything”, he stresses.

⁸ In fact, apart from the various excavations, in Miria also all the trucks carrying sand to the quay pass. Against the restrictions, our investigation travelled across the area and, in almost every minute, there was a dumper truck going towards Inchaque, where the Haiyu warehouse and quay are located.

Loss of livelihoods leads to pressure on the environment

The activities of Haiyu, in Moma, have also implied, for the communities, the loss of livelihoods. The situation is leading the communities to seek new sources of livelihood, with practices that put pressure on the environment.

By way of example, without a natural source of wood fuel, which has been invaded by Haiyu, the residents are beginning to cut down trees to extract the only source at their disposal for cooking food, and this results in putting pressure on the environment.

During the interview, Argentina Agostinho pointed to a leafy mangrove tree which has begun to be cut down for firewood. The devastated area also used to provide other resources such as material to build houses. “Thatch to cover houses, stakes, everything to build houses, we used to take it from here. But now we have nothing”, says Domingos Jamal, who now has to invade any area before him to extract these resources.

Not even the future provides good prospects. Domingos fears for the day when the Chinese expand still further their area of operation. “There we will not have any other way”, he says.

Míria, used to be a source of sustenance for the communities, for the extraction of resources such as firewood, and stakes for construction, as well as providing access to the sea, but it is today reserved only for the circulation of Haiyu vehicles, mainly trucks carrying the heavy sands.

The Mponha community, for example, which is located in the upper part of Míria and Inchaque, used to resort to this area to fetch drinking water, firewood, charcoal and stakes, but today they have to find new means of livelihood, which includes walking for long distances.

In Coropa, the area also covered *machambas*. It was a low-lying area that was used to grow crops such as rice, bananas and sweet potatoes, as well as having water sources for survival. “It was a swampy area where we used to do everything”, recalls Domingos Jamal.

In fact, the EIA already recognised that, with a 10,000ha mining concession, Haiyu Mozambique Mining, Lda. could affect local fishing, farming and livestock activities. For this reason, the indemnity and compensation plan defined, as an essential part of the actions needed to clear these areas, the payment of compensation and indemnity for the service of passing through the areas to be affected by mining. But not everything went according to plan. Now, without fields, some residents are starting to farm in their own backyards or around their homes.

Now without farms, some residents are beginning to cultivate in their own back yards or in the areas surrounding their houses.

With nostalgia, a seasonal worker at the company, who had to pay 6,000 meticais to the neighbourhood secretary as a condition for working at Haiyu, a corrupt scheme fomented by the local leaders, recalls that the farms of his family were simply leveled by “the whites” as he calls the Chinese.

“We had a farm here. Essentially, we were producing rice”, he recalls. “Where they are assembling the new factory, there used to be a farm”. “On this side, rice was grown”, he adds. He indicates that, not far away, they used to fetch firewood and charcoal, as well as drinking water. “Everything was here”, he stresses.

Argentina Agostinho, an elderly woman who was born and grew up in Coropa, had a farm which she says was “large”, where she grew various crops such as cassava, watermelons and beans. But the Chinese destroyed everything. There, a few metres from her house, it was not only the farm that she lost. Like various other residents, she lost an entire natural source for her sustenance. “We lost firewood, charcoal, straw for making mats, fruits to eat, we used to take it all from here”, she says. As if that were not enough, she lost sources of livelihood without any compensation.

The benefits of Haiyu’s presence are almost nil for the communities. Even regarding compensation, which is a basic right,

the Coropa communities have complaints, including non-compensation for the destruction of their crops and the trees cut down during the expansion of access to the mine for heavy vehicles.

The communities thus reveal that, while they are losing their livelihoods, they gain practically nothing from Haiyu. A resident, who does not wish to be identified, said that many local youths do not have jobs in the company.

Without benefits, this interviewee would prefer those investors from the People's Republic of China to abandon Coropa and leave them the land. "Let them go, leaving this land, so that we can cultivate our farms", he says, stressing that, with the arrival of the Chinese, everything stopped. "We used to take fish from that river, but it's stopped. We used to take food from the farm, but it's stopped. Now we can't get anything. They went to the extreme of clearing fields which contained many crops, such as cassava, beans and watermelons", he says.

Domingas Macedo, the young woman from Mponha, sees in the Chinese operators, "exploiters" who do not even keep their own promises. "They came with promises to make improvements here, but they aren't doing anything they promised. They only want to take advantage of our products", she adds. With the occupation of large areas by Haiyu, Macedo is one of the women who have to walk long distances seeking new sources of water, since the natural sources that used to exist in Míria were buried by the Chinese.

"They have ruined everything, even the small farms. Now it is not easy to obtain drinking water. It's very difficult. We are suffering a lot", she says.

Janeiro Manuel would also prefer the investors to leave, because the communities are gaining nothing, except breathing in dust. "They do nothing for us except the dust. Previously we agreed that the Chinese would bring electricity and a school here, but they brought nothing. So it would be preferable for them to go away, because they brought nothing, not even what they promised. What they brought is dust", he says.

Manuel is one of those who, because of the arrival of Haiyu today has to walk long distances to find resources, such as charcoal. "We are scraping by, because the distance we now have to walk is very long", he says.

Haiyu – a history of devastation

Registered in 2010 at the 2nd Notarial Office of Maputo, Haiyu (Mozambique) Mining Co., Lda. is a private limited liability company. It was formed by Hainan Hai Yu Mining Co., Ltd (90%) and Africa Great Wall Mining Development Company, Lda (10%) (BR, 2010), with an initial investment of USD 30 million. The company has been operating in northern Mozambique since 2011, under a mining concession valid for 25 years, renewable for the same period, awarded in terms of the Law no. 20/2014, of 18 August (Mining Law).

The company extracts zircon and ilmenite, heavy minerals used for various purposes, such as the production of synthetic paint pigments, in the naval, aeronautical, artillery and biomedical industries (in the case of ilmenite) and in the ceramics industry. They are also used as refractories, nuclear fuel rods, catalytic fuel converters and in water and air purification systems and in many foundry linings; in chemical tanks and in heat containment units (in the case of zircon) (Haiyu, undated).

Haiyu (Mozambique) Mining Co., Lda. is a company known for its history of damages to the environment. One of the most dramatic cases of Haiyu's environmental and social problems occurred in Angoche district, where the company began operations before extending its heavy sands empire to Moma, in 2021.

In fact, a study by Amnesty International (2018) on the human cost of Chinese mining exploitation, entitled "Our Lives Are Worth Nothing", shows how Haiyu's actions ended in tragedy for the communities of Nagonha, a coastal village in Angoche district. According to the research, when Haiyu began mining about 3 kilometres north of the village and continued south towards the village, it flattened sand dunes, uprooted vegetation and dumped mining waste into the

wetlands. It buried two important lagoons and the watercourses that connected them, as well as the wetlands, close to the sea, exactly the same as what is currently happening in Moma. The most critical point happened on the morning of 7 February 2015. A sudden flood partially destroyed Nagonha. Forty-eight houses were immediately swept into the sea. The flood water opened a new channel towards the sea, which ran through the village, splitting the dune on which the village is situated into two parts. The floods left around 290 people homeless. The local council registered a further 173 partially destroyed houses. The local authorities and older residents, who had lived in the area for over 70 years, had no record or memory of such floods occurring in Nagonha (Amnesty International, 2018).

Field research, which included local testimonies, independent environmental experts consulted by Amnesty International, as well as the analysis and comparisons of satellite images, confirmed that the tragedy was the result of Haiyu's mining operations, which significantly intensified the risk of flooding due to a visibly increasing topographical transformation in Nagonha. Comparison and analysis of satellite images of the area, taken in December 2010, with those from October 2014, show the accumulation of sand in the Nagonha area and the gradual change in the natural flow of water as mining operations continued. By 14 October 2014, approximately 280,000 square metres of wetlands to the north of the village had been replaced by mining-related sand deposits. According to Amnesty, satellite images from October 2014 clearly show how the channel connecting the Nagonha lagoon, in the west of the village, and Nantheke the lagoon, to the north of the village, was covered in sand, thus blocking the flow of water (ibid).

Commitment to the environment is just jargon – researcher

Alberto Benedito Tovele is the author of one of the first, if not the first, study of the operations of Haiyu Mining in Moma district, specifically in Coropa locality, entitled “Mining operations and (un)sustainable (under)development: lessons from the exploitation of the heavy sands in Moma”.

Although environmental questions were not the focus of his research, the author mentioned, even before the start of operations, the potential negative environmental balance, that is, a series of negative actions on the environment and their impacts (Tovele, 2022). During the production of this work, CIP interviewed Tovele who stressed that when he was on the ground there were not yet any major effects, but, even so, he saw trees around the dunes and various vegetation destroyed. He also saw the diversion of some watercourses, probably before their destruction. But already at that time he was concerned because the mining of sands, he said, is one of the most dangerous activities, given what he called “the damaging environmental effect”.

“In 20 to 30 years, we shall have harmful effects”, he says. “The mining of sands is terrible, worse even than coal mining”. He gives the example of Angoche, the district with Haiyu operations where, according to our interviewees, “there has been alteration of the landscape, and stagnation of waters”.

Alberto Tovele has no doubt that the commitment to questions of sustainability is no more than political discourse. “As is said, we are committed to questions of sustainability, but the choices, in terms of practices, are choices that endanger all the commitments we have made, even at international level”, he notes. For him, there are more economic interests than commitment to economic questions. “The choices, in terms of commitments, seem to indicate that we have economic priorities”, he adds.

But it is all a question of choices and of development options”, he explains. “I do not mean that activities should not be undertaken. It's a question of what type of investment projects we are implementing, and to what extent our commitments to sustainable development are effective or are they just jargon to show that the country is committed to environmental sustainability, but in practice we do very little”, he says.

“It’s a delicate situation” – APAIPS administrator

Ricardina Matusse is the director of the First and Second Islands Environmental Protection Area (APAIPS). This is a large protected area, extending from Pebane district, in Zambézia province, to Nampula. In this province, in addition to Moma, APAIPS covers Larde and Angoche districts. The area covers 10 islands, five of them in Pebane and the other five scattered between Moma, Larde and Angoche. The lack of human and material resources for APAIPS to carry out its mission is the tragicomic part of the story.

The APAIPS staff table consists of only three people, including the administrator herself. In addition to Matusse, the institution has just one more administrative staff member and a driver. Reflecting the importance that the government has given it since 2012, thus for more than 10 years, the institution does not even have offices. Subordinate to the National Administration of Conservation Areas (ANAC), one of the most important arms of the Ministry of Land and Environment (MITA), APAIPS is working from a space lent by the World Wide Fund for Nature (WWF), in its office in Angoche.

Under these conditions, striving for the environmental protection of a large area, covering 10 islands, is practically an impossible mission, which cannot go beyond the “good will” of a Government that sets up an institution without endowing it with the basic resources for pursuing its goal. And director Ricardina is aware of this. She begins the interview by saying that the question of environmental protection in this area “is a delicate matter”, because some companies have been operating since before the declaration of the region as an Area of Environmental Protection (APA).

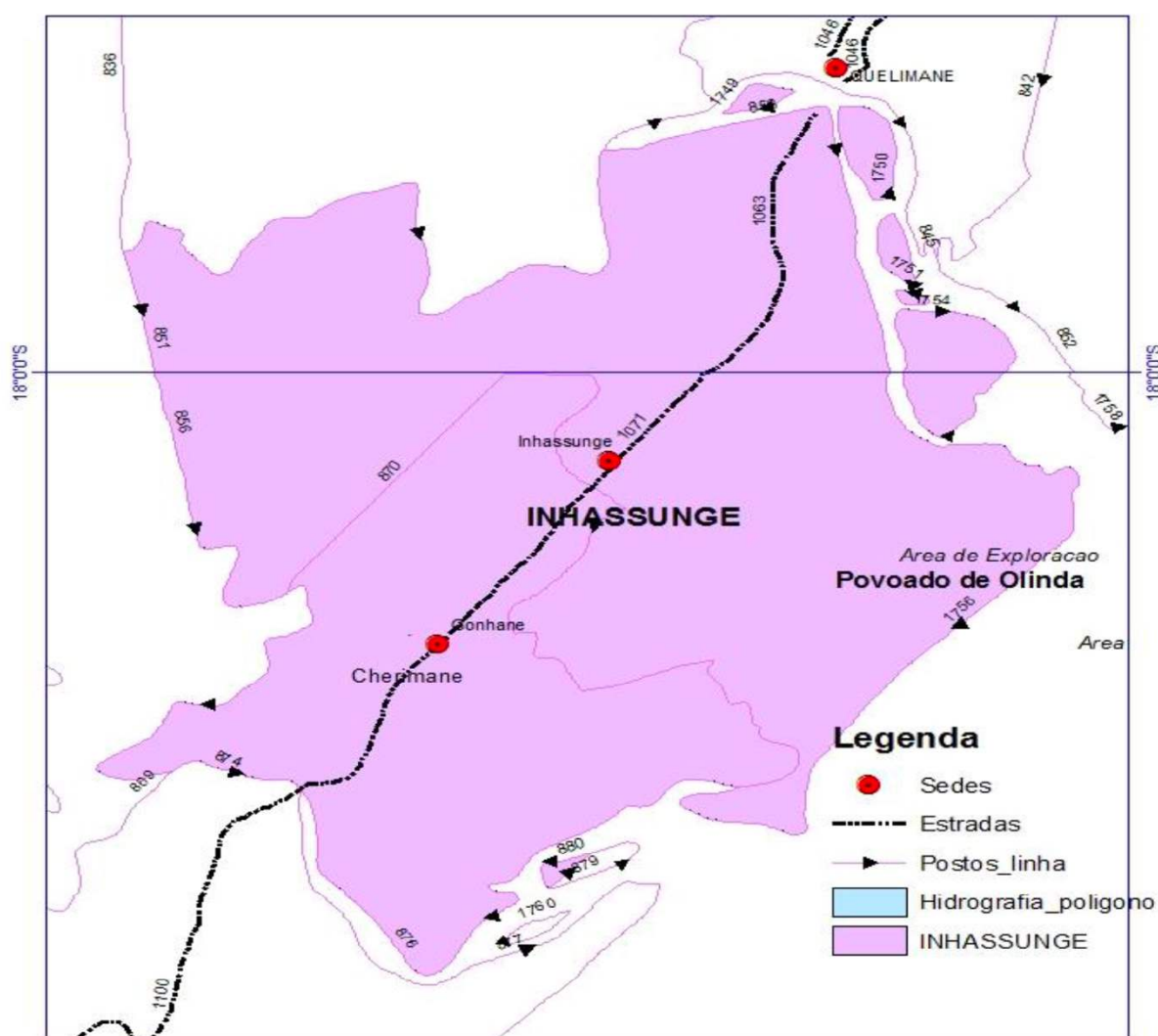
However, CIP knows that this is not the case with Haiyu, since the APA of the First and Second Islands was declared in 2012, while the activities of Haiyu, in Moma, only began in 2021. Furthermore, even the companies which began operations before the declaration of the APA are obliged to conform to the new environmental protection measures.

Ricardina Matusse explains that with the declaration of the area as an APA, some activities can be undertaken, unlike a conservation area that is a reserve. Even so, she admits there are restrictions, and the destruction of dunes is one of them. “The dunes need protection”, she says.

Without the capacity to stop the attacks on the environment in the area under its jurisdiction, the APA of the First and Second Islands is limited to raising awareness, which depends on good faith. In general, this does not work for companies, whose concern is profit.

“We do raise awareness”, says Engineer Ricardina, as she is habitually known in the sector. But the administrator herself recognises that the collaboration of the companies is less than desired. “It’s not 100%. When we are with them, it’s yes, yes. But it’s not everything”, she admits.

2.2 The case of Inhassunge



Source: EIA report for the Inhassunge, Nicoadala and Chinde Heavy Sand Exploitation and Processing Project.

Like Moma in Nampula, Inhassunge, in Zambezia province, is a coastal district. According to the data from the National Statistics Institute (INE, 2023), Inhassunge has 102,357 inhabitants and covers an area of 745 km². In 2018, a small island in Inhassunge hit the national and international headlines. This is Olinda, a peaceful village, but rich in heavy sands, which emerged from its anonymity for bad news: serious violations of human rights by members of the Defence and Security Forces (FDS), mobilised by the Government to quash popular resistance to the expropriation of their land, without compensation, at the start of another Chinese project in Mozambique.

This is where, since 2019, the Africa Great Wall Mining Development Company Lda., has been exploiting heavy sands. The geographical location of Olinda, in a swampy area, alongside the Indian Ocean, makes it immediately vulnerable to the extreme effects of nature. But the Chinese mining, done with all manner of assaults against nature, worsens the situation of Olinda.

In research undertaken in 2022, on the ground, not focused on environmental questions, but to assess bad practices of managing extractive resources in Zambézia, and the implications for the host communities of the projects, the Centre for Public Integrity denounced visible environmental degradation, which was putting the ecosystem at risk, because of the exploitation of heavy sands by the Africa Great Wall Mining Company Lda. (Mate, 2022).

In the year 2023, CIP returned with a specific purpose: to investigate the environmental question. And what it found is a true assault against the environment: the destruction of native vegetation to give way to mining; excavations to make way for the extraction of sand; pressure exerted on the soil, with the movement of heavy machinery; the release of fumes; dust from the huge piles of sand stored there in the open; the noise caused by the machines involved in processing the sands.

Contrary to the Environmental Management Plan, which provided for mitigation measures as the mining activity progressed, in Olinda there is no gradual replacement of vegetation, as established in the PGA. In the mining areas themselves, surrounded by arms of the Indian Ocean, the Africa Great Wall Mining Development Company Lda., has opened channels to empty black waters into the sea. One of the main workshops of the company, situated right at the entrance to Olinda, was built on top of a mangrove area. In addition to the destruction of the mangroves, the company opened a channel to pour the black waters from the factory to one of the arms of the Indian Ocean.

The attack on aquatic life from the black waters is visible to the naked eye. They challenge all the theories of science. Their greenish colour, for example, challenges one of the properties of water, its colourlessness. Its disagreeable smell also challenges the classic definition that water is an odourless liquid. And this water is pushed into the Ocean, particularly at high tide.

One of the results of the company's operations, felt in the daily life of the islanders, is that the boreholes they once used, and those that were opened by Africa Great Wall, practically no longer supply water, a precious liquid that is now scarce in Olinda.

According to the population, Africa Great Wall puts strong pressure on the water table, since in the processing of bulk sand, it needs water. Since it has electric pumps, it easily pumps water to its small factory units, but this leaves the population without an indispensable resource for human survival. As CIP mentioned, in 2022, the population either drinks brackish water, or resorts to wells that are a long distance from the resettlement zone (Mate, 2022).

And, speaking of resettlement, the neighbourhood built by Africa Great Wall to accommodate the communities who were obliged to give their land to the project, this too was built on top of a mangrove area – another atrocity against the environment, committed with the sponsorship of the Chinese company and the blessing of the Mozambican government. The local people explain that it was necessary to build embankments, using sand, just as happens in the luxury coastal neighbourhoods of Maputo city, Mapulene and Chiango, where people are now paying for their attacks against the environment, particularly in the rainy season.

Just as in the luxury neighbourhoods of the Mozambican capital, in Olinda, the septic tanks of the bathrooms are already full due to the location of the houses in an area with a very high water table, which means that some families have to resort to the bush (the mangroves) or even to the bathrooms of neighbours to meet their biological needs (Mate, 2022).

In several parts of Olinda there are heaps of stored sand which, according to the residents, are always a headache, particularly on windy days. "The sands even reach inside the house", says one of the residents.

Sharing the same physical space with the company, the population of Olinda, who have, in theory, been resettled, are exposed to all the harmful effects of living next to mining operations. The costs, in the future, in terms of health and quality of life, could be much higher which, according to Mate (2022), is another clear example of the incapacity of the government to protect Mozambicans.

In Olinda, there is also noise pollution. One of the most flagrant examples is the Mwalani Primary School, which is near sand processing units. Here, teachers and pupils struggle to pay attention to the classes, trying to resist the noise of the machines which never stop working.

With his house near to one of the Chinese workshops, Mendes Suade, for example, complains of the noise pollution and the sand. "People here can't sleep because of the noise. But also when the sand begins to fly off those heaps, we can't stand it", he says.

Olinda is also not far from the coastline. Indeed, it is an island surrounded by the Indian Ocean. A worker in the public administration, who is a native of Olinda, who does not wish to be identified, says that the question of potential environmental risks to the sea was always raised. But “there was always higher level interference” to turn a blind eye to the situation. “It reached the point of operation, because all the teams from the Mineral Resources and Environment Ministries authorised it. There was nothing we could do”, he lamented.

In the excavations where the Chinese extract the sand, lakes have been born which have become reservoirs of water, including water drained after it was used to treat the heavy sands. But, since the mining area of Africa Great Wall is also not fenced, the artificial lakes located along paths used by the community to reach various destinations, such as farms and fishing areas, have become a problem which could put public health at risk – because of the color of the waters, and of the black sand formed around them, one notes the need for an environmental study to assess the possible damage which may be being caused.

In their innocence, some children dive into these still waters, including those used to process the sand, with all the risks that may arise. But that’s not all. With few options for farming, since their land has been taken by the “lords of capital”, some Olinda residents have turned their attention to fishing. In fact, fishing is also practised in these lagoons, despite the suspicions that the waters have been contaminated by mining activities.

However, the EIA, which had already predicted that the mining activity could generate contaminated effluents, suggested the installation of a surface water drainage system to combat the spread of contaminated water and prevent water from entering the mineral extraction sites. As such, all contaminated liquid effluents should be treated before being discharged into the receiving environment. According to the EIA, whenever water accumulated, it should be pumped into the “mine drainage water” system, made up of berms and drains.

“This water must be channeled through a separate drainage system (which will also include drainage water from the soil/landfill material) to a pollution control basin. The water must be analysed regularly so that the most effective treatment (neutralisation and precipitation of toxic/heavy metals) can be chosen. This water can only be released into the water environment if it complies with the quality parameters stipulated for liquid effluents from the mining industry”, stated the EIA. But none of this was observed in Olinda.

Means of livelihood: more of the same

Just as in Coropa, Míria and Inchaque, in Olinda, the mining operations also implied the loss of livelihoods. This is a common denominator in various mining projects in Mozambique. Maria Rita does not know how old she is. But she does know how much this behaviour costs which has taken away her sources of livelihood. She was born and lives in Mwalani. She has five children. She tells of suffering which, she says, became worse with the arrival of Africa Great Wall.

According to her, some of the areas used for mining operations in Olinda, used to serve as places for farming, and as a source of survival resources such as firewood for cooking and stakes for building houses.

According to the EIA report, in addition to fishing activity, the population in Olinda area also practised subsistence agricultural and livestock activities, with emphasis on crops such as rice, sweet potatoes, fruit trees, maize, sorghum, peanuts, *njugo* beans (*joco* beans, *voandzea sellowiana*). Agricultural activity was also carried out in the dunes.

“Projecto de Exploração e Processamento de Areias Pesadas de Inhassunge , Nicoadala e Chinde” Relatório do Estudo do Impacto Ambiental - EIA



Fig. 7 Imagem ilustrando a vegetação abundante

Source: EIA report for the Inhassunge, Nicoadala and Chinde Heavy Sand Exploitation and Processing Project.

But, since it is a low lying area, it was also there that the islanders fetched water. Everything changed with the arrival of the Chinese. Rita confirms that there was an attempt to open boreholes, but they did not meet the demand and almost always had no water. As if this were not enough, the little water that sometimes comes from them is not of the same quality as before the arrival of the Chinese. She links this to the intensive mining activity.

“We lost places for cultivation. And even for fetching water”, she laments. When Maria Rita complains of hunger, she recalls that before the arrival of the Chinese, they used to produce there rice, beans and sweet potatoes. She laments that currently, the community has to walk long distances to find new land for farming and places to extract firewood and materials to build houses. She explains there are cases where firewood and stakes for building can only be found on the other bank of one of the arms of the Indian Ocean, which implies paying canoes for their transport.

Grandmother Isabel Raul also does not know how old she is, but she was born and lives in Olinda. The old woman says that, with the arrival of Africa Great Wall, life became worse in Olinda. As an example, she gives the source of livelihood for her family. “I don’t even have a farm”, she say, and points to where her agricultural field used to be.



Fig. 12: Imagens ilustrando o tipo de culturas predominantes

Fonte: Relatório do EIA ao Projecto de Exploração e Processamento de Areias Pesadas de Inhassunge, Nicoadala e Cahinde.

Mendes Suade, who also does not know his age, was born and lives in Olinda. He begins to complain of the water crisis, allegedly caused by Africa Great Wall. He explains that the Chinese operators use electric pumps to extract water in their wells, but in the community wells for most of the time, there is none of the precious liquid without which there is no life.

Suade, who also complains of hunger since his fields were invaded by the company, says that Africa Great Wall does not bring any benefits to the communities. On the contrary, it is just losses upon losses. “It would be better for them to leave. We are living any way we can. They took our land. They took our farms, and today we are living any way we can”, he declares.

Africa Great Wall – when atrocities have government protection

The Africa Great Wall Mining Development Company Ltd., is defined, on its website⁹, as a subsidiary of the Jinan Yuxiao Group Co.,Ltd, a Chinese group founded in 1995. But, according to Mate (2022), the company is legally constituted by the Chinese citizen Yao Guoping, with 1% of the share capital and by the limited company Hong Kong Changcheng Mining Development Company, LTD, with 99% of the share capital. It is registered in Hong Kong, a city regarded as a tax haven.

The company, which has been operating in the mining sector in Zambézia province since 2006, explores and exports heavy coastal sands mainly to the Chinese market. On 29 June 2012, Africa Great Wall Mining Development Company, Limitada acquired the prospecting and research licence for titanium and zircon for an area of around 23,100 hectares,

⁹ <http://africagreatwallmining.com/>

covering the districts of Inhassunge, Nicoadala and Chinde (RMS Consultores, Lda, 2014).

In 2014, the Mozambican government granted the Africa Great Wall Mining Development Company Lda., the DUAT for exploiting heavy sands, in an area of 16,463.43 hectares, covering a total of three districts, including Inhassunge (where Olinda is located). The other districts covered are Nicoadala and Chinde. Inhassunge had the largest concession area, 12,002.28 hectares (Resolution no. 66/2014 and Senda, 2023).

The Africa Great Wall Mining Development Company Lda., is regarded as an example of how political alliances protect large capital, to the detriment of the local communities. The case of the atrocities against the population of Olinda, in 2018, is paradigmatic. When the islanders opposed the expropriation of their land by the Chinese, it was not the company itself that waged war against the population. On the contrary, it did so through the intermediary of a State which it had captured.

It was the Mozambican government which mobilised agents of the Defence and Security Forces (FDS) to fight the population and oblige it to cede its own land to the Chinese “partners”. With the community of the small island refusing what they called “Chinese colonisation” (Ossumane, 2018), the government sent elite forces, in the shape of agents of the Rapid Intervention Unit (UIR), an anti-riot unit of the Mozambican police (PRM), which, in addition to the use of torture, went to the extreme of opening fire against the defenceless population, killing and injuring people (Mweia, 2018). The population were merely demanding their rights, and this was a serious violation of human rights, sponsored by the Zambézia provincial government, led by the then governor Abdul Razak.

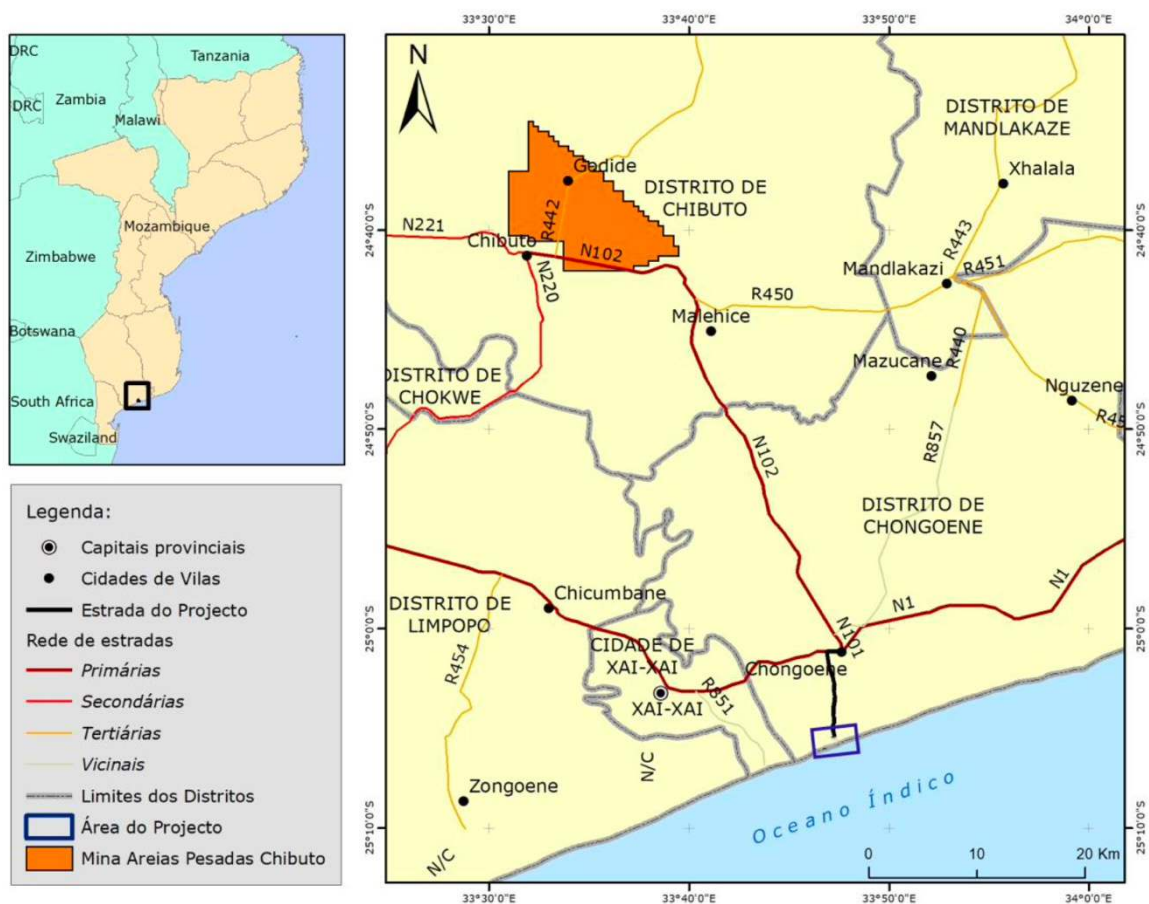
At the time, a UIR contingent camped in Olinda to repress any popular attempt to resist the Chinese undertakings. Thus, almost 200 households from Olinda island, who were living in the area granted to the África Great Wall Mining Company, were “resettled” alongside the area of mining operations, to make way for the exploitation of the heavy sands, in an investment budgeted at more than USD 163 million (Mate, 2022).

2.3 The case of Chongoene

Located in Gaza province, in southern Mozambique, Chongoene is a relatively new district, created in the administrative division of 2014. Previously, Chongoene was part of Xai-Xai district. According to the INE (2023), the district has a population of 124,687 inhabitants and covers an area of 1,575 km².

In April 2021, Chongoene hit the headlines in the national and international media, following the destruction of coastal protection dunes by Dingsheng Minerals, a Chinese company which has been exploiting heavy sands in the neighbouring district of Chibuto, since 2018. It is about 70 km from the Chongoene beach to the Chibuto mines, which are about 5 km north of the district capital, Chibuto town.

In broad daylight, under the passive gaze of the authorities, the Chinese of Dingsheng Minerals destroyed dunes and opened a path in a space of about 9 km. They made use of an existing route and, among the population, they used the false argument that they were expanding a path that was already in use to facilitate the movement of people to gain access to the beach. But it was more than this. In fact, the company was doing the same that Haiyu Mining did in Moma: to install a dock and logistics infrastructure, including a road, warehouses, dormitories and offices (valued at UDS 12 million) for the export of heavy sands.



Location of the project

Source: EIA Report about the Project for Logistics Infrastructure Construction in the Locality of Chongoene, Gaza Province

The objective was, therefore, to open access for the flow of heavy sands to a point from which a dock would be built, where ships would berth for loading and then export, with China as the main market (Enviestudos, 2022). At the time, the situation was presented as a paradigmatic case of serious damage on the environment.

The Civic Coalition on the Extractive Industry (CCIE, 2021), consisting of various civil society organisations (CTV, Sekelekani, CIP, Kuwuka, Christian Council of Mozambique), which went to the site, classified the case as “an unprecedented criminal act”.

But, in the context of this investigation, it can be stated that, although worrying, the case of Chongoene is one of the least problematic, when compared with the more serious cases, such as those verified in Moma and Inhassunge. The location of Chongoene, about 20 km from the Gaza provincial capital, the city of Xai-Xai, and little more than 200 km from Maputo city, the capital of the country, two large urban centres with a great flow of information, and where the main civil society organisations and the main mass media are concentrated, may have contributed to the case achieving greater notoriety, which quickly deserved the attention of the country and the world.

But, in the more remote areas of the country, with poor circulation of information and without the scouts from civil society and the media, where the exercise of citizenship is still low, attacks against nature are still more serious. This does not mean that the Chinese of Dingsheng have not committed environmental abuses in Chongoene. On the ground, CIP found that the company has devastated about 1 km and 300 metres, mostly consisting of dunes, opening access to the beach.

What was previously a simple access for pedestrians, mostly fishermen who were living with the dunes, has given way to

an access road for large trucks. In addition to the dunes, the Chinese have ripped up native vegetation that is crucial for biodiversity¹⁰.

In April 2021, the then administrator of Chongoene district, Carlos Buchili, confirmed to a team from the Civic Coalition on the Extractive Industry that the destruction of the dunes sought to allow the construction of a port and warehouses on Chongoene beach, to move and store the minerals to be extracted in Chibuto. This implied building a road about nine kilometres long from the Chibuto crossroads to the sea, an infrastructure that, as a whole, should occupy an area of 40 hectares (Sekelekani, 2021).



Fig. 4: ilustração da estrada do projecto e sua configuração final no entroncamento com estrada N1

Source: EIA Report about the Project for Logistics Infrastructure Construction in the Locality of Chongoene, Gaza Province

At the time, Buchili also said the Chinese company had acted precipitately in implementing the project without waiting to obtain the due environmental licence requested from the Government (ibid). Which means that the company destroyed the dunes without any environmental study. With the dunes destroyed, and under pressure from public opinion, the Gaza Provincial Directorate of Planning and Infrastructures had no option but to embargo the work.

¹⁰ As in other regions, the company also devastated resources, such as stakes and firewood and other raw materials used by the communities to make utensils such as baskets, hats and folders.



REPÚBLICA DE MOÇAMBIQUE

PROVÍNCIA DE GAZA
Conselho dos Serviços de Representação do Estado
SERVIÇO PROVINCIAL DE INFRA-ESTRUTURAS

À:

DINGSHENG MINERALS

CHIBUTO

N/Ref. N.º 257 / SPI-GZ/DHAS/390

Data: 09 /04/2021

V/Ref. / de, / /

ASSUNTO: INTERRUPÇÃO DE OBRAS – NOTIFICAÇÃO

Exmo. Senhores,

1. O Serviço Provincial de Infra-estruturas de Gaza (SPI-Gaza) é a entidade que, de acordo com os princípios, objectivos e tarefas definidas pelo Governo, dirige e assegura a execução das actividades do sector a nível provincial comportando as áreas de habitação, água e saneamento, recursos hídricos, estradas e pontes, energia, recursos minerais e hidrocarbonetos e transportes e comunicações.
2. Nos termos previstos no n.º 1 do art.º 15 do Decreto n.º 63/2020, de 7 de Agosto, que regulamenta a Lei n.º 7/2019, de 31 de Maio, que estabelece o quadro legal da Organização e do Funcionamento dos Órgãos de Representação do Estado na Província e do n.º 1 do art.º 3 do Diploma Ministerial n.º 14/2021, de 29 de Janeiro, que aprova o Estatuto Orgânico do Serviço Provincial de Infra-estruturas cabe a este, no âmbito da Habitação, Água e Saneamento a função de *monitorar a implementação das políticas e programas nacionais do sector na província*.
3. Este serviço tomou conhecimento e constatou no terreno que V.Excias. estão a executar obras de melhoramento da via de acesso que liga a N1 à Praia de Chongoene, no Distrito do mesmo nome caracterizadas pela ampliação e terraplanagem desta via de acesso, sem que para isso tenham sido feitos os estudos necessários.

Chongoene, no Distrito do mesmo nome caracterizadas pela ampliação e terraplanagem desta via de acesso, sem que para o efeito, a empresa tenha solicitado permissão e sido autorizada para a realização dessas obras o que viola de forma flagrante a legislação vigente considerando tratar-se de uma infra-estrutura de domínio público.

4. Outrossim, o SPI-Gaza tomou conhecimento e constatou no terreno que a Empresa DingSheng está a desbravar uma área na qual, de acordo com informações colhidas pretende construir uma armazém para o aprovisionamento do mineral extraído no projecto das Areias Pesadas de Chibuto para posterior carregamento através de uma doca que V.Excias pretendem construir na Praia de Chongoene, sem contudo serem detentores do Direito de Uso e Aproveitamento da Terra nem tão pouco sido aprovados e autorizados os projectos das infra-estruturas a edificar.
5. Com efeito, o SPI-Gaza gostaria de lembrar a V.Excias. que na República de Moçambique, a construção, desenvolvimento e implementação de projecto de construção e ou ampliação/ melhoramento de uma via de acesso (estrada), edificação de uma obra civil bem como a construção de uma doca são empreendimentos que carecem designadamente de:
 - a. *DUAT – documento que autoriza o Direito de Uso e Aproveitamento da Terra;*
 - b. *Licença de construção;*
 - c. *Realização do Estudo de Impacto Ambiental (EIA) – pois trata-se de projecto de Categoria A, nos termos do Decreto n.º 45/2004, de 29 de Setembro – Regulamento do Processo de Avaliação do Impacto Ambiental; e*
 - d. *Aprovação dos projectos e autorizações da implementação das infra-estruturas pelas entidades competentes (em função de cada objecto a edificar no conjunto das infra-estruturas).*
6. Constatado que V.Excias, não apresentaram a este serviço provincial qualquer pedido de autorização para a materialização/ execução de obras conforme acima descrito, serve a presente para **NOTIFICAR** a empresa no sentido de interromper imediata e incondicionalmente todas as intervenções em curso no

local do desenvolvimento do projecto conducente à construção de infraestrutura de logística para a exportação das areias pesadas de Chibuto a partir da doca a construir na Praia de Chongoene, até regularização de todo o processo nos termos legalmente estabelecidos.

Cumpra-se conforme notificado.

O DIRECTOR DO SERVIÇO PROVINCIAL

ALBERTO JACOB MATUSSE
(Investigador Estagiário)

C/C.:

- SUA EXCELÊNCIA SENHOR SECRETÁRIO DE ESTADO NA PROVÍNCIA;
- EXMO- SENHOR ADMINISTRADOR DO DISTRITO DE CHONGOENE;
- EXMO SENHOR PRESIDENTE DO CONSELHO DE ADMINISTRAÇÃO DA EMPRESA MOÇAMBICANA DE EXPLORAÇÃO MINEIRA (EMEM)

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Página 3 de 3

Figure X: Notification about the interruption of public domain works issued by the Provincial Service for Infrastructure Development.

Republic of Mozambique
Gaza Province
Council of State Representation Services
PROVINCIAL SERVICE FOR INFRASTRUCTURE DEVELOPMENT

TO DINGSHENG MINERALS

CHIBUTO

Date: 09/04/2021

N/Ref. Nr. 257 / SPI-GZ/DHAS/390

V/Ref. / of /

SUBJECT: INTERRUPTION OF WORKS - NOTIFICATION

Dear Sirs,

1. The Provincial Service for Infrastructure Development in Gaza (SPI-Gaza) is the entity that, under the principles, objectives and tasks defined by the Government, directs and ensures the execution of the sector activities at provincial level, which cover the areas of housing, water and sanitation, water resources, roads and bridges, energy, mineral resources and hydrocarbons, and transport and communications.
2. Under Article 15(1) of Decree 63/2020, of 7 August, which regulates the Law no. 7/2019, of 31 May, that sets the legal framework for the Organisation and Functioning of the State Representation Bodies in the province, and 3(1) of the Ministerial Diploma no. 14, of 29 January, which approves the Organic Statute of the Provincial Service for Infrastructure Development, it is the responsibility of the latter, in the context of Housing, Water and Sanitation, *to monitor the implementation of national sector policies and programmes in the province.*
3. This service was informed and verified on the ground that your company is carrying out works to improve the access road linking the N1 to Chongoene beach, in the district of the same name, consisting of widening and earthworks of this access road, without requesting the necessary permission or being authorised to carry out these works, which flagrantly violates current legislation, considering that it is an infrastructure in the public domain.
4. Furthermore, SPI-Gaza has learnt and verified on the ground that DingSheng company is clearing the area in which, according to information gathered, it intends to build a warehouse for the storage of minerals extracted at the Chibuto Heavy Sand Project for subsequent loading through a dock that it intends to build on Chongoene beach, but without holding the necessary DUAT [Right to Use and Benefit from the Land], nor the projects of infrastructure to be built duly approved and authorized.

5. In fact, SPI-Gaza would like to remind your company that, in the Republic of Mozambique, the construction, development and implementation of construction projects and/or expansion/improvement of access routes (roads), civil works projects, as well as the building of a dock, are undertakings that require:
- a. *The DUAT - document that grants the Right to Use and Benefit from Land;*
 - b. *Construction license;*
 - c. *An Environmental Impact Study (EIA)* – as this is a Category A project, under the terms of Decree n° 45/2004, of 29 September – Regulation for the Process of Environmental Impact Assessment;
 - d. *Projects approval and authorizations for the implementation of infrastructures by the competent entities (depending on each project to be built within the set of infrastructure).*
6. Noting that your company did not submit to this provincial service any request for authorization for the implementation/execution of works as described above, this is to **NOTIFY** the company to immediately and unconditionally interrupt all ongoing interventions in the project site, involving the construction of logistics infrastructure for the export of heavy sands from Chibuto through the dock to be built at Chongoene beach, until the entire process is regularized under the legally established terms.

To be complied with as notified.

THE DIRECTOR OF THE PROVINCIAL SERVICE

(signed by Alberto Jacob Matusse, Trainee Researcher)

C/C.:

- His Excellency the Secretary of State in the Province;
- The Administrator of the District of Chongoene;
- The President of the Board of Directors of Empresa Moçambicana de Exploração Mineira (EMEM)

For its part, the Chongoene District Attorney's Office opened criminal proceedings, with the case number 100/2021, against two senior managers of Dingsheng for the opening of an access road and the destruction of primary dunes and other ecosystems on Chongoene beach, without the competent authorisations, an environmental licence, and much less a DUAT (Tchambule, 2021).

In August 2021, the paper "Evidências" reported that, after its work was suspended, the Chinese company hired a consultancy from Envi-Estúdios, which drew up a pre-viability environmental study, in the space of a month. At the time, it was undertaking public consultations with clear signs of manipulation (Tchambule, 2021). The EIA to which CIP had access is dated April 2022. However, the consultant declared that the EIA production process took place between April 2021 and April 2022.

Meanwhile, by February 2023, when the CIP research team was on the ground, the offenders had not been held responsible for their acts. However, the work remained paralysed, but with no guarantee that it would never resume. Indeed, in April 2023, the Council of Ministers passed a resolution that authorised the direct award to a company formed between the Chinese firm Dingsheng Port and Mozambique Railways (CFM) of a contract to build and operate, under a regime of concession, a port terminal to be located in Chongoene district, Gaza province (Baloi, 2023).

In August 2023, when this work was being completed, Rádio Mozambique (RM) reported that the work was now under way, with the completion of the first phase of the construction of a dock with capacity for 20,000 tonnes scheduled for December 2023. With an investment of USD 300 million, the second phase should begin in 2024, and should increase mooring capacity from 20,000 to 40,000 tonnes.

In an article published in April 2021, the lawyer João Nhampossa argued that that the investigation into the destruction of the primary dunes on Chongoene beach, should go to the final consequences. He said it was the responsibility of the State, through the Ministry of Land and Environment, which has a National Agency for Environmental Quality Control (AQUA), and the Attorney-General's Office, to defend the communities and the environment.

Dingsheng – a bad start

Dingsheng Minerals, the company that destroyed dunes in Chongoene, is also owned by Chinese capital. According to the Environmental Impact Assessment of the project for the construction of the so-called logistics infrastructure for shipping the mineral concentrate extracted from the Chibuto deposit, Dingsheng Minerals, SA was established in the country in 2016, based in Mudumela, district of Chibuto, Gaza province, and represented by Mr. Chiang JIang ZhaoYao, a Chinese national. The project representative is Mr. Li Daowen, also a Chinese national.

The company is owned by Anhui Foreign Economic Construction (AFECC), one of China's largest business groups, with large-scale multi-operations. It was founded in 1992 and operates in the construction and mining sectors (Gil, 2021, Devex, n.d. and Craft, n.d.). Meanwhile, the group has a broad portfolio of operations, including in the hotel business. It owns the Hotel Glória, one of the largest hotel establishments in Maputo.

According to the Investigative Journalism Centre (CJIMAZ, 2020), Anhui's investment in the Chibuto heavy sands project is estimated at USD 1 billion. The known reserves are about 108 million tonnes of ilmenite. This will allow the mine to operate for between 70 and 100 years. According to Muaga (2021), the Mozambican state has a holding of 10% in Dingsheng Minerals (TA, 2021). The company began to exploit heavy sands in 2018, in the villages of Mudada, Mudumeia, Mabecwane, Savene and Mutsicwane in Chibuto, occupying an area of about 10,840 hectares.

Dingsheng has a bad history in the projects where it is involved. Since 2017, dozens of households in Chibuto district, are appalled at the company's behaviour. These are the Mudumeia, Mabecwane, Savene and Mutsicwane communities, who complain that they have been treated unjustly in the compensation for resettlement (Tchambule, 2021). Without giving numbers, Tchambule (2021) says that the company paid less than had been agreed.

In 2018, the company set up in Chibuto district a unit with the capacity to process daily 10,000 tonnes of sand, with a concession valid for 25 years. Over this period, it forecast annual extraction of a million tonnes of minerals (Diário Económico, 2022).

In 2022, Mozambican President Filipe Nyusi inaugurated a further two lines of production of heavy sands, an investment made by the Chinese company Dingsheng Minerals. With the official start of the two new production lines, plus the old production lines, Dingsheng Minerals has reached a production capacity of more than 1.8 million tonnes per year of titanium and zirconium minerals (Xinhua, 2022).

3. The profile and connections between the companies

The profile of the companies involved in these environmental atrocities, particularly those cited above, confirm a pattern already known of how to do business in Mozambique. It is a pattern that consists of establishing promiscuous alliances between foreign investors and the political elite. The politicians guarantee protection to the businesses of the foreigners, even with the most serious violations of good practices and of national legislation¹¹.

Haiyu Mining, Africa Great Wall and Dingsheng are three Chinese companies who have understood the importance of allying themselves with the emerging local bourgeoisie, mostly linked to Frelimo, or of supporting this party, as an imperative for their businesses to do well in Mozambique (Chichava and Alden, 2012).

For the Investigative Journalism Centre (CJIMAZ, 2020), various industries with foreign investments have been opened in the country with the involvement of Mozambican leaders, from the President, to ministers, directors, mayors and even simple Frelimo Party secretaries at various levels, who have practically taken control of the wealth of the entire

¹¹ For more details, see the CIP study entitled "Má gestão e alianças promíscuas colapsam sector de pescas em Moçambique", available on <https://www.cipmoz.org/en/2023/03/16/ma-gestao-e-aliancas-promiscuas-colapsam-sector-de-pescas-em-mocambique/>

country, leaving out the other Mozambicans. The cases of Haiyu (Mozambique) Mining Co. Lda. and the Africa Great Wall Mining Development Co. show how some of the companies are held by the same owners, following a model also known from doubtful businesses, where the same people set up various companies, some of them shell companies. As mentioned above, Haiyu (Mozambique) Mining Co. Lda. is a subsidiary of the Africa Great Wall Mining Development Co., in a limited company with Hainan Haiyu Mining Co. Ltd., based in China. There are two names associated with the two companies. They are Cong Chuanyou and Tao Wu, who are behind the exploitation licences of the two companies (Ancir, undated.).

For its part, the Jinan Yuxiao group, also linked to the Africa Great Wall Mining Development Company Lda. and the Haiyu Mining Co., are among the first Chinese companies to obtain mining concessions in Mozambique. In 2009, for example, the Jinan Yuxiao Group Co., Ltd, won the right to exploit 20 zircon mines, In 2011, the same group, from the Chinese city of Jinan, won 10 zircon exploration rights and 40 for titanium, becoming one of the largest companies in Africa, and, at the time, the largest in Mozambique in exploiting these minerals (@verdade, 2014).

4. The consequences are irreparable

Faced with the serious environmental violations described here, the question is: what impacts does this pattern represent for human and animal life and for the environment in general? To answer this question, CIP spoke to specialists working on the matter. Salomão Bandeira is a biologist, an ecologist linked to marine and coastal questions and aspects concerning their governance. He also teaches at the Department of Biological Sciences in the Eduardo Mondlane University (UEM).

Bandeira begins by explaining that mining is, in its essence, a sensitive activity, whether undertaken within or beyond the coastline. When it is done on the coastline, the situation is even more problematic. Looking at mining activities undertaken along the Mozambican coast, from Moma to Olinda and to some extent throughout the country, this researcher in marine and coastal questions, sees aggression with serious implications. “We are butchering the coastline”, he says. “We are just exporting sand and butchering our entire coastline, which is shameful”. He notes that operations in the mining zone touch on many sensitivities.

One of these is the potential for ruining the coastline in an irreparable way. “The assaults that have occurred on the coastline”, he states, through the development of mining, “have the potential to ruin the coastline beyond repair”, since “the damage done to the coastline is difficult to restore”.

According to Bandeira, the destruction of a dune, one of the dominant aspects in the mining operations described here, has very serious impacts. “In the first place, there is the alteration to the coastline, which can have immeasurable effects, depending on the magnitude (...). The hydrology of the place also changes. The soils can also suffer saline intrusion, affecting agriculture, for example”, he says, also mentioning water pollution.

The destruction of a dune, he adds, can be even more serious, particularly in places with a considerable population density, which lose their natural protection against the sea, and extreme natural events. As for blocking rivers, as has happened in Moma, this specialist speaks of “aggression” against a natural watercourse, which is equally serious, and includes risks of flooding particular areas, as is happening in the country’s main urban centres, such as the cities of Maputo and Matola, where disorderly construction has blocked the normal water courses, worsening the drama of flooding in the rainy season.

Also mentioned in this work are the destruction of dunes and of vegetation, and the dumping of mining waste on wetlands; the blocking of lakes and the water courses that connect them, as well as the wetlands, to the sea by Haiyu, in Angoche district, which led to the destruction of Nagonha village, in 2015, following the floods of that year. With the topography of the area significantly changed, with natural water courses obstructed, and with heaps of sands stored, the water had no alternative but to find new paths, which ended up by partly destroying the village.

Faced with the abuses, the academic asks whether the various stakeholders involved in the chain are using their powers or not. “It makes no sense to have laws, but not to have bodies which can look after these laws and enforce them”, he declares, stressing that, in some cases, the country’s environmental authorities are ill-prepared.

For him, it is high time for Mozambique to stop, assess, and in cases of serious environmental effects, reject these undertakings, even if it is still a developing country. “If, in front of my coast, I have a mining operation, I should do the maths: What have I exploited? For how long? How much have I gained? What value chain have I stimulated? How much has stayed in the country? By doing these accounts, we shall see what is better. We shall see what are the advantages it brings us: if we have more problems, or if we gain more. Repeating the same matter before consolidating the others also does not help. Perhaps we are going wrong again”, he warns.

4.1 Lack of political will

Cristina Louro is also a marine biologist. She explains that, in the case of the coast, the dunes cushion the force of the ocean waters, particularly the most powerful waves. Indeed, the primary dunes, those that are in front, immediately following the sea, take the first blow, while the secondary dunes, behind the first ones, serve as a second barrier. “That is their function, to serve as a barrier. And you don’t have just one dune. After the primary dunes, you have others, the secondary dunes, behind them, and they all have the function of serving as barriers because of the force of the ocean and of the winds”, this specialist says.

But the dunes do not only function as barriers. They are also habitats for various organisms of biodiversity. Hence, cutting down trees or destroying native vegetation, as is happening in Moma, Olinda and Chongoene, simply by way of illustration, also has its consequences. “If you cut down a tree, or a creeping plant, the sand will have nothing to hold onto, and will fly with the force of the wind, and of the sea or ocean. So it is important to have the vegetation, the roots, the leaves, which the sands cling to”, she says.

In addition, in some parts of the country, such as in the cordon of dunes extending from Ponta do Ouro, in Maputo province, to Bazaruto, in Inhambane, there are coastal lakes behind some dunes, which are no less important. “Yes, the water is brackish but it has many ecological, social and economic functions”, she says, giving as examples fishing and fetching water for human consumption.

That is why this marine biologist laments that our natural barriers “are being destroyed every day by these large companies”, and “without application of the law”. Cristina Louro also believes that, even though Mozambique is a poor country, it should reject some mining projects because of their terrible environmental impacts.

“People cannot think only about tomorrow, about what we are going to eat tomorrow, but must think about the long term. What are we going to leave for future generations. I’m not even talking about our great-grandchildren. Even for our children, What are we leaving for our children and grandchildren? I think that the Government – and I understand that the question is hunger, what are we going to put on our plates to eat the following day - must also impose barriers. Yes, we are thirsty, but people must be able to say no to certain things and measure the pros and contras”, she says.

This specialist sees a lack of political will. “There is a gradual effort (in environmental protection) but it’s not a priority on the agenda. For example, there is a great effort in declaring new conservation areas, but there is a lack of technical and financial capacity”, she states. She believes there are day-to-day concerns, in a country where the population is living in hunger, which needs to eat, and needs better living conditions, so that environmental questions are always seen as the opposite. But she warns there are costs to pay for this lack of political will towards environmental questions.

For Cristina Louro, the laws and regulations on the matter are evolving, but she sees weak application. “The law says one thing, but afterwards the government and the investor come along and do not follow what is in the law and the regulations”, she says. And she gives examples. She says that, in most cases, the so-called public consultations for

environmental impact studies are only window dressing for communities that also have no knowledge about the rules, laws and regulations on the environment. In addition, nobody is talking about monitoring this impact on the course of the projects and the measures to mitigate the harmful effects.

“People only talk about the environmental impact study, but the regulations say it is necessary to monitor what people wrote in the environmental impact study, and the due mitigation and prevention measures. It is necessary to monitor whether the investor is following this or not, and this is not being done. Nobody is there”, she laments.

4.2 It is a pattern of chaos

Samanta Remane is the current executive director of the Centro Terra Viva (CTV). Previously she held the post of director of the Programme of Policies and Legislation about the Governance of Land and Natural Resources in CTV, which is one of the main civil society organisations fighting on environmental and land issues in Moçambique. A jurist by training, she knows very well the nuances of the assaults against the environment in the country. And one of the cases she followed closely was Chongoene. She was one of the faces of the Civic Coalition on the Extractive Industry (CCIE) which spearheaded the case of the Chongoene dunes.

She was one of the CCIE team which, when the case was triggered, went to Chonguene to understand the situation. She explains that, on its arrival in Chongoene, the team went to various bodies of the administration, such as the Provincial Services of Infrastructures and of the Environment, as well as the district government, to understand the context and what had happened. She recalls that when the CCIE tried to find out what steps Dingsheng had taken, there were “many incongruencies” on the part of the public institutions contacted.

“In the administration, they said that the company had followed all the steps, but, at the same time, the Provincial Infrastructure Services issued a statement preventing the process from continuing, and saying that the company had not followed the procedures”, she recalls. Finally the authorities recognised the illegality of the act, but for the CCIE, this was not simply an administrative problem, as in the official perspective, but there were enough signs that an environmental crime, envisaged and punished under the penal code, had been committed.

Thus CTV immediately submitted a criminal complaint to the Chongoene District Court. But CTV never received a reply, despite its approaches to the court. Dissatisfied, the organisation also approached the Attorney’s Office which, facing a case of an environmental crime, has a key role to play, including setting criminal proceedings in motion, in its capacity as the guardian of legality. Instead of attending to CTV, the Chongoene District Attorney’s Office itself submitted a criminal complaint. Samanta asks “If they already had a criminal complaint from CTV, why does the Attorney’s Office need to submit its own criminal complaint?”.

Even so, CTV became an assistant in the District Attorney’s criminal complaint, in the hope that a case moved by the guardian of legality would be treated more quickly than one from a civil society organisation. But CTV could not have been more deceived. The gesture of the Attorney’s Office was no more than the rushing forward of an institution under strong pressure from public opinion, accused of protecting “criminals”. But even in this case, Samanta says nothing happened.

Each time the organisation sought to find at what stage the case was in the institutions of Justice, it did not receive a plausible answer. Given the lack of answers from the administration of justice, Samanta resorts to the experience of the work of her organisation to forecast a sombre end to the Chongoene case. “Many cases, particularly those of an environmental nature do not receive adequate judicial treatment. Often they are shelved, or the judges and attorneys try to delay them as much as possible, until there is a certain lack of interest in following them”, she says.

In addition to Chongoene, this jurist was also in Moma and saw, with her own eyes, the atrocities committed by the Chinese against the environment. Apart from the dunes that were also destroyed in Moma, she points to the obstruction

of a river as a serious assault against the environment.

“The river, which was blocked by the activities of Haiyu Mining, used to provide a little of everything, for the basic needs of the population. They used that river, not only to irrigate their farms, but also to bathe, and to fetch drinking water. But now the river is lifeless and is disappearing. This will cause many problems. That area had fertile soil, favourable for agriculture. When we went there we already saw physical changes in that river. Everything was wilted. There was no communication between the two banks. Stagnant water began to appear, with another type of plants which the residents themselves thought strange since they were not suited for that area. All this will clearly cause impacts”, she says.

For Samanta, if that population depends on farming for their livelihood, like most of the Mozambican rural population, how will they live, if they can no longer produce? This environmental activist is also concerned that in Moma the operations of Haiyu Mining are being undertaken not very far from the coast.

In all the projects, including the three under study in this article, she sees serious environmental impacts. “In fact, it’s a pattern, but it’s a pattern of chaos or the complete abandonment by social, cultural and protection issues. They are allowing environmental questions to be clearly relegated to a secondary position. So it’s a bad pattern”, she laments. And she gives examples of the consequences:

“The impact of destroying a specific habitat is well known – particularly the dunes, which exercise a very relevant function for maintaining the balance between the coast and the interior. If this dune is destroyed, changes will occur in that area, I’m speaking about the soils, etc., changes in aesthetics, and even changes in the biodiversity of the area. I cannot quantify what is being lost in terms of biodiversity, but certainly there will be a change in that area, and a still more profound change in the medium and long term”, she notes.

“The dunes are natural barriers that protect the land from part of the sea, and the communities go there not only to fetch fisheries produce but other resources for their subsistence. With the dune destroyed, the waters of the sea begin to come more to the interior, and problems start appearing. First, the communities cannot continue using that route to take those resources, The people living nearby may have their areas, such as farms, also harmed, because of the waters that may invade them. In the medium or short term, the water may invade the area of the dune, but in the long term, it will go beyond that area”, she adds.

In general, Remane sees a lack of political interest in protecting the environment. Taking as an example Chongoene, where still nobody has been held responsible for the destruction of the dunes, she says it is more than just the power of judges and attorneys. On the contrary, it is the lack of importance given to environmental and land questions. “For most of the projects, the public bodies look only at the economic gains, and do not look closely at the environmental questions which a project will also bring”, she says.

On Moma, when the local administration was approached about the Haiyu case, there was no satisfactory response from the authorities. That was when Remane asked for a meeting with the company to make it aware of the need to respect environmental questions. “But it is not just a matter of raising awareness. There has to be a body in Moma district which follows these matters. We have the State in all points. How is it possible for a river to be silted up, people are talking about this, the community is talking about it, and nothing happens? They say it’s a department in the environmental area, but you go into the administration, everybody is talking and watching the soap opera, but nothing more. The people don’t even know why they are in those sectors and what the role and importance of being there is”, she laments.

But in the extractive industry, the environmental impact is always so deep that preventive measures should be much stronger and more concrete. “We have environmental protection laws. A study is made which analyses, in concrete form, what will happen with a particular activity, taking into account where it is being undertaken. And measures are written down that the company should take to minimise the damage; there are corrective measures during the process of operation, which are not noted in the phase of licensing. All this should later result in something, and in this case, it would be greater protection of the environment. But we have seen the exact opposite”, she says.

4.3 Our future is at stake

For Environmental Justice, it is more than proven that the preservation and conservation of the environment are of little importance when there are mineral resources in the soil or subsoil. “The priority is to issue concession licences so that our domestic elites make money, and the great transnational companies increase their annual dividends and send the money to their countries of origin”, accuses Kete Fumo, of Environmental Justice.

Confronted with the cases of Moma, Olinda and Chibuto/Chongoene, Fumo says that the cases of heavy sands show that the greatest atrocities committed by the transnationals of the area, the destruction of ecosystems, the violation of fundamental rights, and zero benefits to the communities are what we most see. “The case of the destruction of the dunes, in Chongoene, makes us ever more exposed to invasion by the waters of the sea, and the case of Olinda proved to us that, in addition to negligence in environmental questions, there were also serious violations of the rights of the local communities, who were not consulted, or compensated, much less resettled”, she explains.

Kete Fumo also gives the example of Larde, a district bordering on Moma, where Kenmare is also exploiting heavy sands, in the midst of controversy about the sustainability of its operations.

“The environmental destruction (by Kenmare) is so revolting that that it does not even respect local culture and tradition, as in the case of the destruction of Mount Felipe, in 2016, a sacred mountain which is not only a reference on dry land for the fishermen of the region, but was also a place for ancestor worship and for ceremonies asking for rain”, she says, adding “there are many other problems caused by this Kenmare project: the amount of dust raised by the Kenmare machines; the contamination of the waters of the Hapelo river; blocking access to the sea for fishermen; the immense sand dunes formed after operation; in addition to the failed replanting plan to plant eucalyptus”.

Indeed, for this source, at the end of the 50 year concession period, this area could be totally abandoned and with little chance of recovering the original ecosystem. Asked about the real impacts on the environment (including on human beings) of the destruction of the dunes, the blocking of the rivers, the contamination of the water, air pollution, and noise pollution, among other forms of environmental aggression, the representative of Environmental Justice explains that often there is the false idea that the environment and human beings are separate things.

“We very easily forget that we are part of nature, and that we depend on the balance between living beings and the environment for our own survival. The destruction of dunes, the blocking of rivers, the emission of greenhouse gases, the contamination of the water, and other forms of pollution, and the destruction of native vegetation, are already bringing us serious consequences, from the climate crisis to the emergence of new diseases”, she says.

She stresses that, while we continue to prioritise profit and economic growth without scruples, without respecting the limits of nature, we shall continue to suffer the effects of this. “Human beings need to rescue their relationship of respect and humility towards nature, preserved and practiced by indigenous peoples throughout the world, instead of a relation of domination which has been praised in imperialist ideologies and ways of life”, she proposes.

As for the choices the country should make when faced with operations that present a high risk to the environment, she believes that we should and need to opt for a fundamentally different model of development, which is centred on people and protects the environment and the future of the planet.

“No project considered high risk, or of high impact, should be given the green light to go ahead. Our future is at stake, and this is what should be most important. We need to transform our energy models and guarantee that the energy produced is for people and not for export or for industry. We need to invest in community management of our resources, such as the forests, to ensure that the local communities have an active role in their conservation, while at the same time they benefit from these resources in a sustainable manner. We need to value local knowledge, native seeds, and agro-ecology, moving towards food sovereignty, and completely abandon the paths which lead to dependence on chemical inputs and genetically modified seeds”, she recommends.

She states that, if Mozambique, as a country, were willing to debate in depth the various so-called “development” projects, so as to analyse and truly measure their negative and positive impacts, certainly it would take better decisions. “What we see, from the studies made, from the risk assessments, or from the public consultations, is that there is no interest in this debate happening, and these processes are mere cosmetic exercises to validate projects that are environmentally destructive and socially unjust”, she stresses.

4.4 It is the destruction of biodiversity

According to Zito Covane, a research assistant at Kuwuka JDA, one of the member organisations of the CCIE, the destruction of the dunes may bring irreversible impacts. And when these are vegetated dunes, regarded as a reservoir of biodiversity, we have flora, fauna and micro-fauna being destroyed. “These dunes are habitats for nesting turtles, and with their partial destruction, not only can we see the stability of the dune itself, and its importance as a natural barrier, threatened, but also the destruction of the biodiversity which supports the dune”, he says, cited by CCIE (2021).

Sekelekani (2021), which is also a member of the CCIE, writes that the building of a large access road to the sea in Chongoene, implies the destruction of primary dunes, protected under the country’s environmental legislation, which seeks “to prevent and limit the pollution from illegal discharges from ships, platforms or land-based sources, along the Mozambican coast, as well as establishing the legal bases for the protection and conservation of areas that constitute the public, maritime, river and lake domain, the beaches and fragile ecosystems”.

4.5 “We have no knowledge”

To obtain reactions to the matters dealt with in this text, CIP contacted three government institutions, namely the Ministry of Land and Environment (MITA), the National Environmental Quality Control Agency (AQUA) – on environmental questions - and the Mozambique Tax Authority (AT) on the amount of heavy sands exported and the revenue obtained by the Government in each of the three mining projects studied.

More than 30 days after submitting the requests for information, under Law no. 31/2014 of 31 December (Law on the Right to Information), which sets a deadline of 21 days for a reply, AQUA bothered to respond, albeit in an evasive manner. In its reply, which was sent to us with the knowledge of the office of the Minister of Land and Environment, AQUA said it does not not know about the situations of environmental violations reported here, and relegated a possible statement to an unspecified future date. “We will only be able to pronounce upon the facts after they have been investigated”, wrote AQUA.

On the other hand, the MTA expressed gratitude for what it considered to be a “denunciation made by the CIP”. However, the Ministry pointed out that, in relation to the loss of vegetation, there is always an impact from the removal of natural vegetation to allow mining activity – a fact of which we have been aware since the beginning of the work and, in fact, mentioned above, namely, that mining extractivism always involves an acceptable minimum in the degradation of nature. According to the Ministry, mitigation measures for the removal of natural vegetation are provided for in the Environmental Management Plan (PGA).

However, the PGA shared by the MTA, and thoroughly checked by CIP, are documents of intent about what the execution of projects should be in environmental terms, presenting a list of good practices that operators should observe in favour of environmental protection. But the real point, which is what the Ministry hasn’t responded to, is what actions to take when this damage involves the devastation of ecosystems and biodiversity, including the obstruction of rivers and lagoons, damages that cannot be accepted in the name of exploitation of whatever resources.

With regard to the destruction of sand dunes by the company Dingsheng Minerals, for example, the MTA said that an administrative sanction (fine) had been imposed on the Chinese company, which acknowledged the infringement. The government continues to monitor compliance with the recommendations issued. Therefore, both the Government and Dingsheng recognise the commission of infractions, which, in itself, go beyond the simple impact inherent to mining activity.

The MTA also mentioned in its response that it has regularly carried out environmental monitoring, auditing and inspection work with a view to verifying compliance with the technical studies approved during environmental licensing. However, it did not share any environmental monitoring, auditing and inspection reports other than those of the Environmental Impact Study (EIA). Meanwhile, the EIA report for Africa Great Wall, for example, is from March 2014 (it was drawn up by RMS Consultores, Lda, at the time of the Ministry for the Coordination of Environmental Action - MICOA), even before the start of Olinda operations, which only began five years later, in 2019. This means that the document doesn't necessarily capture the current dynamics of Olinda's operation.

For its part, AQUA, in addition to not sharing environmental impact studies or reports, gave no response on this specific issue. The failure to share monitoring reports on the impacts registered throughout the implementation of activities can be explained by one of the issues raised in this research: that public institutions are not doing any monitoring of the impact of projects. And, without monitoring, no measures can be expected to mitigate the harmful effects caused by the activities, as recommended by environmental legislation.

Regarding the complaints of local communities, who complain about poorly carried out resettlements, poor compensation, including loss of means of subsistence without compensation, MTA said that, in relation to Africa Great Wall Mining Company, Lda. in Zambézia province, the rights of families in the village of Ilha de Olinda have been safeguarded. "In 2022, the government of Inhassunge district identified 75 hectares in the locality of Bingagira, in the village of Micungune, for the production of rice, the district's main crop. The process was preceded by meetings with the affected families to present the area, followed by a visit to the site where there are unoccupied areas. In 2023, the district government, with the support of the company, carried out parceling and ploughing work on the 75 hectares, which were handed over to the families", wrote the Ministry of Land and Environment.

"There was a plan to build 100 houses for the same number of families that should be resettled in the affected village, against the previous intention of moving them out of it. And, in accordance with the approved resettlement plan, a total of 90 houses have been built and handed over to the resettled families, while the construction of the remaining 10 houses and the preparation of DUAT [titles for the Right to Use and Benefit from the Land] for the same number of families are currently underway", he added.

With regard to Dingsheng Minerals, the Ministry stated that, for the construction of the port to transport the ore through the district of Chongoene in Gaza, the Economic Resettlement Plan was drawn up and approved after the conformity opinion was given. Its implementation is currently underway at local level. In relation to Haiyu (Mozambique) Mining Co. Lda, in Nampula province, the MTA says it has no information on the existence of processes requiring the drawing up and implementation of Resettlement Plans in the district of Moma, in connection with this company's activities.

However, as can be seen from this work, in the case of Moma, CIP did not talk about resettlement of the communities, but rather about the loss of means of subsistence, without due compensation to the population, and of environmental pollution. With regard to compensation, the Ministry admits that it is continuing to work to comply with the provisions of the legislation. "In relation to compensation for the communities whose properties were affected, the government will continue to work with the company so that it complies with the requirements laid down in the legislation", guarantees the MTA.

The courage Mozambique should have

With all the assaults that are taking place against the environment to some extent across the whole country, it is necessary for Mozambique to gain the courage to reject or halt operations where the environmental results are irreparable, and in a context where the undertakings in question contribute little to the coffers of the State, and bring almost no benefits to the local communities.

Internationally, there are experiences from which the country can learn, if it does indeed want to make environmental protection a priority, rather than a simple political speech. One of the most recent cases of halting a mega-project, due to its enormous environmental impacts, comes from Australia, which, in February 2023, rejected a project for open cast mining, which would have major impacts on the Great Barrier Reef (Lusa, 2023).

According to the Lusa news agency, the Australian Minister of the Environment, Tanya Plibersek, decided to prevent a mine from being opened northwest of the city of Rockhampton, in the State of Queensland, and less than 10 km from the Great Barrier Reef, on the northeastern coast of Australia. In the case of Mozambique, some of the most violent assaults against the environment are undertaken just a few metres, and much less than a kilometre, from the beach.

Cited at the time by the Portuguese news agency, Plibersek said the project would have an impact on the water of the area and, potentially, on the fragile sea grass meadows that feed the dugongs, a marine mammal, and serve as incubators for fish. The Minister said the risk “of pollution and of irreversible damage to the reef is very real. Given the science before me. It was clear that the risks were simply too great”. According to Lusa, the open cast mine would have an annual capacity to extract 10 million tonnes of coal, for 25 years. This is a project proposed by a mining magnate, Clive Palmer, who founded and financed a small Australian conservative party, Australia United.

Next door to Mozambique, South Africa in 2021 banned a seismic exploration project of the multinational Shell, on the “Wild Coast”, which is a tourist attraction. This decision was received as a victory by environmentalists who had been warning of the impact the project would have on marine wildlife (Lusa, 2021).

Although at the time a spokesperson for the oil and gas giant said, in statements to Agence France Presse, that “South Africa is heavily dependent on imports to satisfy much of its energy needs”, so that “if viable resources are discovered at sea, [this discovery] could make a significant contribution to the country’s energy security”, the courts of this neighbouring country banned the project, even against the will of the political class, such as the then Minister of Energy of South Africa (ibid), and even faced with the serious energy crisis that is currently shaking the country.

5. Conclusion

Environmental protection in Mozambique has not been prioritised by government authorities. On the contrary, the cases documented show that, throughout the country, the most tragic atrocities against the environment have been taking place. The level of the abuses committed by the companies, in broad daylight, and under the passive gaze of the authorities, leads us to question the role of the State in the protection of what has become one of the fundamental rights of humanity.

When a country goes to the extreme of allowing the obstruction of natural water courses, such as lakes and rivers, just to make way for extractive undertakings, and ones which are of practically no benefit for the State and for the communities, there is little to say about the attention the authorities devote to environmental questions. When a country draws up laws and ratifies various international instruments on environmental questions, but with almost no implementation, this behaviour can only be regarded as calling into question our survival and that of future generations.

When a State sets up an Area such as the First and Second Islands Environmental Protection Area (APAIPS), which extends from Pebane district, in Zambézia province, to Angoche, in Nampula, with a staff table consisting of just three people, and operating, 10 years after its creation, in borrowed space, not much can be said about the priorities of the Government in this sector.

But not all institutions in the environment sector in Mozambique are APAIPS. There are institutions in his country, which have no lack of resources to deal with violations against the environment. It is beyond understanding that this level of atrocities is allowed in a country which even has a ministry dedicated to environmental questions, the Ministry of Land and Environment (MITA).

The leaders of this country should put in first place the national interest which includes protection of the environment. What cannot happen is continuing to endanger the present and future of the country in the name of an extractivism whose political economy prioritises profit at the expense of sustainability, and respect for environmental questions and the rights of the communities.

Mining operations by Chinese companies are simply the most flagrant example. But in various areas there are blatant cases of attacks against the environment, with all the consequences that flow from them, particularly at a time when climate change is increasingly showing how serious it is.

Indeed, one of the starting points for this article, which should be the subject for future research on the sector, is precisely this: *the implications of these environmental attacks at a time when climate change has become a reality*. Even though it has not been the focus of this research, the experience of Mozambique, one of the counties most affected by the effects of climate change, teaches us that extreme events have devastating implications today.

The situation is so serious that it calls all of us, Government, society and partners, to take urgent and vigorous actions to deal with the problem. If we cannot yet state with certainty to what extent the degradation of the environment is exacerbating already existing impacts caused by climate change, there is one thing that we can do: respect nature – something that is no longer optional.

Hence, before it is too late, the country should stop and do the accounts of the investments it is receiving and their environmental balances. Whenever necessary, Mozambique should have enough courage to say NO to particular projects with severe environmental impacts. What the country should not give itself the luxury of doing is to continue licencing any activity, as if concerns with the environment were problems of another world. This may be the recipe for our salvation.

6. Recommendations

Considering the main findings of this research, it is recommended:

1. *To the Mozambican Government:*
 - To prioritise in fact (more than in speeches), the preservation of the environment and defence of the rights of the communities, and not limit itself merely to profit;
 - Strengthen the fight against corruption, in this specific case in the sector concerned, and create the necessary conditions for effective inspection and penalising of offenders.
2. *To the companies involved in environmental abuses:*
 - Respect national and international legislation, and good practices in exploiting resources, always preserving the environment;
3. *To the National Environmental Quality Control Agency (AQUA), the National Institute of Mines, the Ministry of Land and Environment, the Ministry of Mineral Resources and Energy, and the Ministry of the Sea, Inland Waters and Fisheries:*
 - Inspect, duly and rigorously, the activities of the mining companies, and assess their environmental impact, taking proportional measures for each case.
4. *To the Attorney-General's Office:*
 - Investigate and hold responsible those who commit environmental crimes.
5. *To the environmental organisations:*
 - Strengthen advocacy in favour of better protection of the environment.
6. *To the academic world*
 - Undertake research into the real environmental impacts of mining and other projects.
7. *To the international community*
 - Undertake diplomacy, with the Mozambican Government, in favour of greater respect for environmental questions, as the priority of the moment for humanity.

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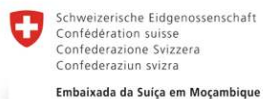
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