

## Gold mining on the outskirts of the town of Houndé in Burkina Faso, from enchantment to disenchantment, even annihilation: a dashed hope for sustainable development

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### Abstract

Our study aims to assess the contribution of gold mining to the sustainable development of the population and the town of Houndé. Both primary and secondary data were used. The study revealed that the installation of an industrial gold mine on the outskirts of Houndé has been the hope of real development. It created 700 direct jobs and 1,000 non-permanent jobs during the construction phase. According to our research, 66.7% of companies in the mining zones came to the area thanks to mining activities. A strong dynamic among land players in Houndé between 2010 and 2020, with gold miners and miners dominating, accounting for 35% of land holders in both allocated and unallocated zones. As for the respondents, 64% believe that gold mining is behind this strong demand for land in Houndé. The dynamics of the land actors in Houndé have led to land mutations, the most dominant of which is the sale of plots. The study also reveals that in 2020, the dominant land use and occupation units are built-up areas. The market value of land in Houndé is high, up to 10,000,000 FCFA for a 400 m<sup>2</sup> plot. The mining fund for local development and corporate social responsibility have enabled socio-economic investments to be made, according to 26.56% of respondents. For 94% of respondents, the town of Houndé owes its economic, demographic and spatial development to gold mining.

**Keywords:** Mining; Gold; Periphery; City; Houndé and Sustainable Development

### 1. Introduction

Today, gold mining is one of the main driving forces behind the development of certain countries and cities around the world. It also has an impact on agricultural growth and other socio-economic activities. The archaeologist [1], reveals in his work that gold panning began in Burkina Faso in the 15th century. He points out that the severe droughts of 1974 and 1984 and the two locust invasions of 1974 and 1975, which destroyed crops, enabled populations to turn to gold panning as a resilience activity in Burkina, particularly in the north of the country. Since the 1980s, the mining sector in Burkina has undergone spectacular development, with a boom that has seen the arrival of major mining companies. Burkina Faso, with its tradition of cotton production, saw its primary export product change in 2010. Yellow gold replaced white gold in the country's economy [2]. The same is true for the town of Houndé, where gold mining has become the main driver of local income and development over the last ten years (ROUAMBA S., 2007 and 2009) [3]. The gold boom is accompanied by harmful environmental and social effects, but also by a boost to the local and national economy [4]. Ore extraction is a source of income mobilization, strong demographics and investment according to the expectations of the populations. The research question of this study is, how do populations perceive mining industry development projects as a boon to settlement? The research hypothesis is that populations see the installation of an

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industrial mine as a boon to sustainable development. The aim of the study is to assess the contribution of gold mining to the sustainable development of the population and the town of Houndé.

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## **2. Literature review**

This article looks at artisanal gold mining and its many social and health impacts, as well as its contribution to improving people's incomes and living conditions. It also looks at the environmental impacts of gold panning.

### **2.1. Social and health impacts of artisanal gold mining**

Gold mining is a source of employment for many people with an uneven spatial distribution of artisanal gold mining sites estimated at over 1,000 in 2017 and 10 industrial mines in 2018 in Burkina Faso [5, 6, 7, 8].

SOMA A. et al., 2021 [9], in their article, reveal that risks are incurred depending on whether one is a smelter, processor, mechanic, washer and refiner as well as those in charge of cyanidation. However, it should be noted that the health risks of gold mining are also incurred by all those living on gold mining sites and even in nearby villages or towns. Three (3) categories of disease are commonly encountered on gold panning sites in the Mouhoun River sub-watershed: diseases directly linked to gold panning; behavioral diseases and diseases linked to living conditions. Health, sanitation and hygiene conditions are virtually ignored on gold-mining sites, making fecal peril a factor in disease.

### **2.2. Artisanal gold mining and poverty**

The gold mining sector is an essential component in the country's economic and social development, and plays an important role in the national economy. Artisanal gold mining accounts for a growing share of Gross Domestic Production (GDP), approaching 4% in 2018. Gold also accounts for almost 43% of the country's exports and has brought in nearly 200 billion FCFA annually since 2010 [10].

For the author, while artisanal gold mining in the Mouhoun River sub-basin may be perceived as a lucrative activity in view of the strong enthusiasm it arouses among gold miners, it obviously has many perceptible adverse effects on natural resources, human health, but also socially.

### **2.3. Environmental impacts of artisanal gold mining**

A spectacular development of the mining sector, strongly linked in the form of a gold rush, and the dynamics of settlement are being framed by new national land-use planning policies [11]. This analysis looks at the multiple issues linked to the coincidence of two unprecedented experiences for Mauritania: on the one hand, the creation in 2012 of a new town in the country's desert northwest, Chami, thanks to the resumption of land-use planning policies thanks to increased state rents. On the other hand, the spectacular development of artisanal gold mining in the Sahara and the Sahel has spread to Mauritania, leading to the appearance in 2016 of a gold rush in the Chami hinterland [11].

Current gold mining in Burkina Faso, particularly in its artisanal form, is generating multiple environmental problems [12]. According to his work, local populations in Zoula indicate that gold panning accelerates the dynamics of vegetation cover on gold sites.

Then, an analysis of the same local population shows a significant impact of gold panning on the dynamics of the vegetation cover of the gold site and on the human environment of the village of Zoula in the commune of Réo. A general degradation of the natural vegetation cover on the Zoula gold site is mainly linked to natural factors, but also to anthropogenic factors. In his view, gold panning exacerbates the degradation of natural vegetation. Thus, 80% of the gold panners and local populations surveyed perceive the physical degradation of the site's vegetation cover since the start of mining activities [12].

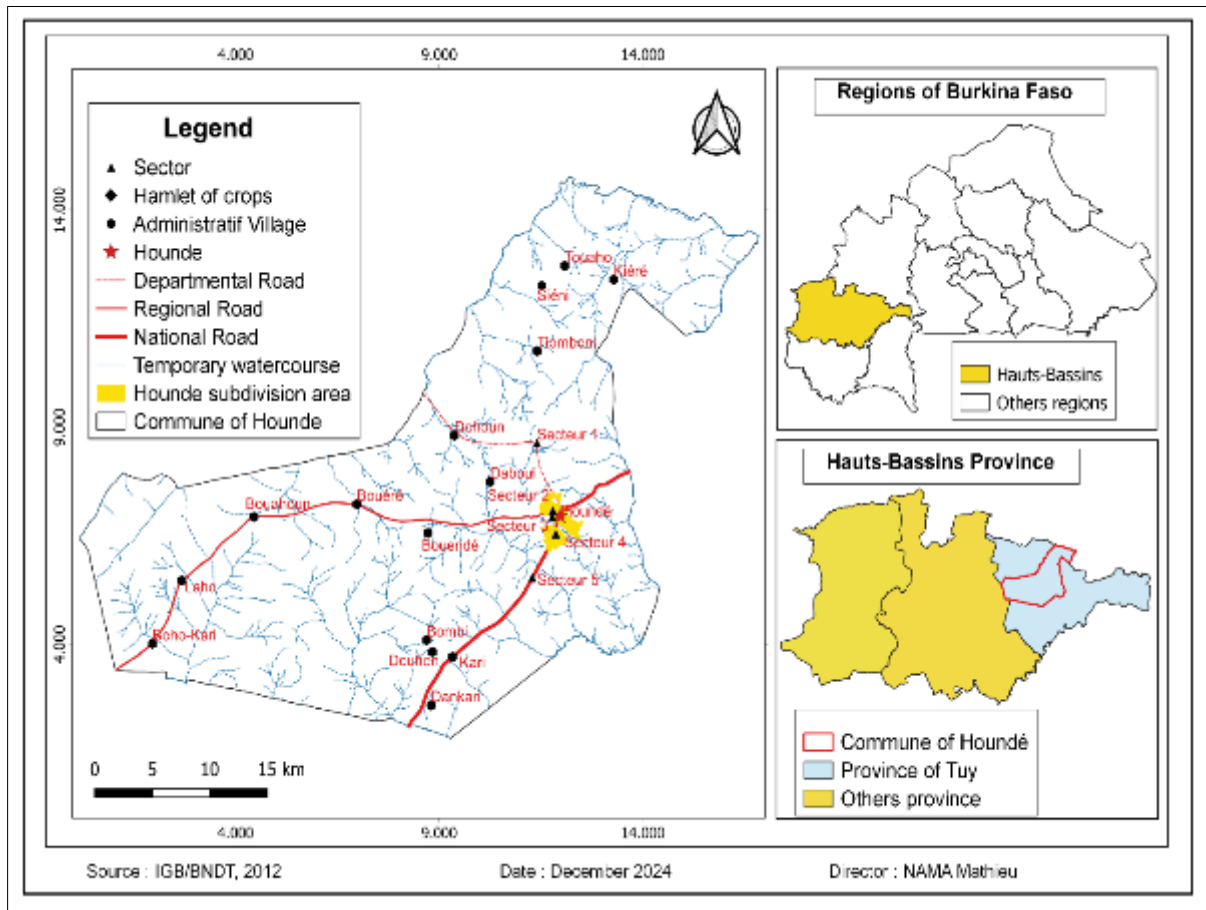
[13], show in their article the repercussions associated with gold mining on populations living in the vicinity of mines in Burkina Faso. It also illustrates how Swiss companies participate as players in the global gold market; also looks at the responsibility that the state and the companies involved must shoulder. Finally, they show how current Swiss laws are not enough to guarantee due diligence, but also to prevent possible human rights violations. It takes a close look at voluntary rules in the gold sector and analyzes their effect. The authors also aim to contribute to the drafting of possible solutions to ensure that human rights violations in the context of gold mining do not recur. In general, studies focus on artisanal gold mining, as the various works above testify. However, the number of gold mines is increasing, and we need to take a closer look at their contribution to the sustainable development of Burkina Faso's towns and cities.

### 3. Materials and methods

The study presents the study area, sampling, data collection and processing methods.

#### 3.1. Geographical location of the town of Houndé

The department of Houndé became an urban commune in 1995. It includes 15 villages attached at the time of the 2004 full communalization and covers a total area of 1,244 km<sup>2</sup>. The urban agglomeration of Houndé covers an area of 2.18 km<sup>2</sup> and comprises 05 sectors, as shown on Figure 1 below.



**Figure 1** Location of the study area

#### 3.2. Research population and sampling plan

The target population for this study is the population of Houndé (everyone living in the town) for the household surveys, the Houndé town hall, the Receveur tax (RI), Houndé gold operation and the civil society organization (CSO) including the managers of each of these structures for the individual interviews. The demographic sample comprised 384 people surveyed in the city's five sectors, and eight managers for the interviews. Spatial sampling covered all 5 sectors of the town of Houndé.

#### 3.3. Data collection method

Data collection was carried out using a questionnaire on the Kobocollet platform, then deployed on a smartphone. The door-to-door administration method was used to collect quantitative data close to the population. This household data collection enabled the acquisition of demographic data, the standard of living of the population, and the types and socio-economic benefits of gold mining. As for qualitative data, individual interviews were carried out using a smart Recorder version 13.1. Direct observation in the field also enabled us to observe the achievements made in the town and to compare these with the expectations of the population when the Houndé gold mine was set up.

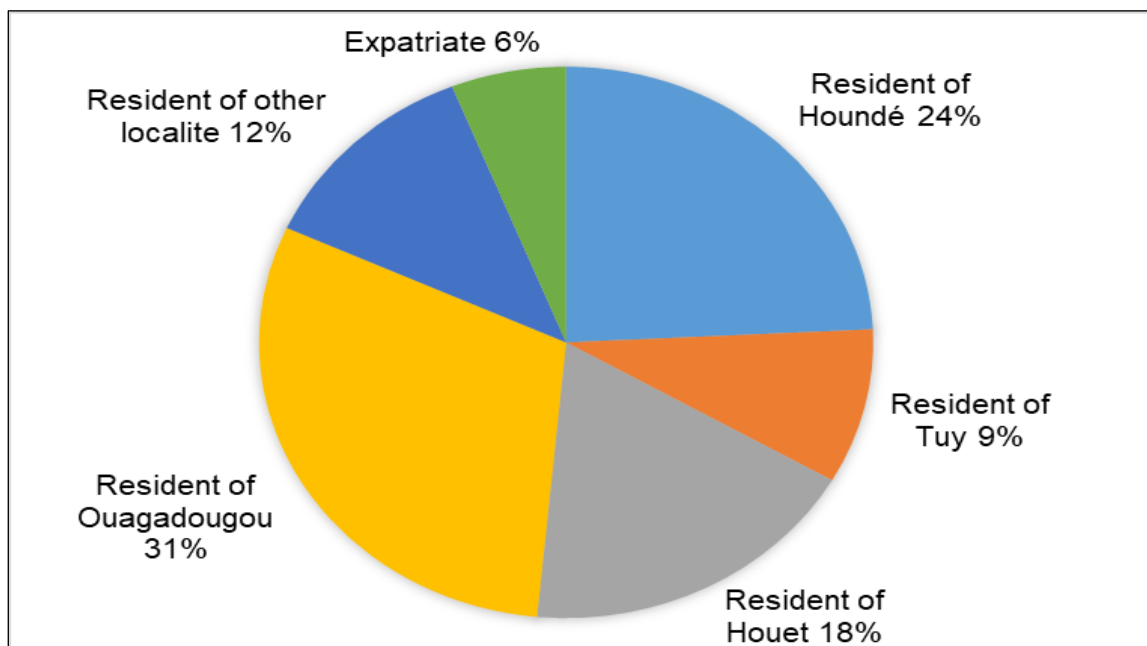
### 3.4. Data processing methods

The tools and techniques of descriptive statistics were used to process and analyze the primary data used in this work. Quantitative data were analyzed using Microsoft Excel 2013 software, which was used to produce the graphs and tables recorded in this work. As for the qualitative data, the recorded interviews were transcribed and entered using Microsoft Office Word 2013.

## 4. Results and discussion

### 4.1. Sustainable development as an incentive to set up an industrial gold mine on the outskirts of the town of Houndé

The installation of the industrial gold mine on the outskirts of the town of Houndé, the hope of true sustainable development advocated by the central state, the authorities of the urban commune and the mine. The mine offered 700 direct jobs and 1,000 non-permanent jobs during the construction phase. During the operating phase, the mine planned to provide 5,000 direct and indirect jobs (Chairman and CEO, Mr. Sébastien de MONTESSUS). The Houndé mine has a total of 1,254 employees on March 31, 2023. Of the 1,254 employees, 1,217 are nationals and 37 are expatriates (Figure 2 below). Houndé Gold Operation (HGO) has taken gender into account, even if the number is not balanced: 1,130 men against only 124 women (Interview with HGO Community Relations Manager, 23/04/2023). In addition to these direct jobs, there are also indirect jobs in the form of local supplies to the company.



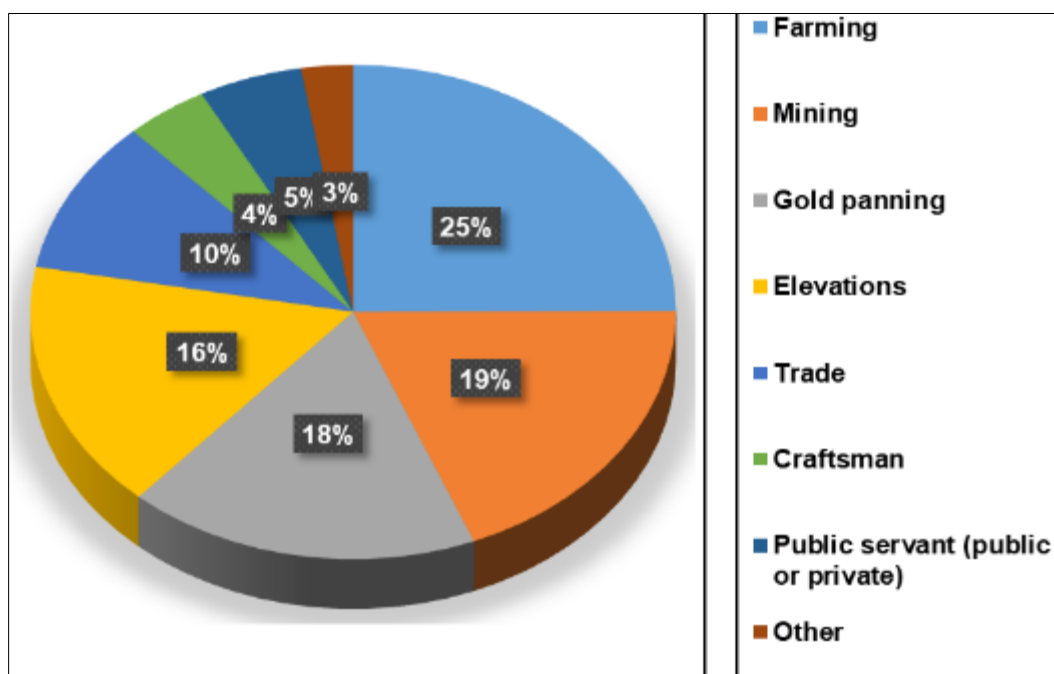
Source Field surveys, 2023

**Figure 2** Breakdown of HGO employees by residence

The mines are demanding when it comes to supply contracts and hiring employees. According to Endeavour's vice-president in charge of public affairs for Burkina Faso, some of the mine's local suppliers do not comply with standards. "As a result, some have been excluded for serious shortcomings in the quality of their work or for ethical practices that run counter to Endeavour's values". The Vice-President adds: "It's not always easy to get the required qualifications locally in Houndé". Hence the reduction in the number of local employees in the production phase, which requires a little more professional qualification (Interview of November 30, 2022). In terms of vocational training, HGO is committed to training 20 people a year (Burkina24.com). If we relate these figures to job creation, we can say that mines help to reduce unemployment. They therefore help to improve the living conditions of employees and their families. These results are also those of [14], who states that 66.7% of companies in mining zones came to the area through mining activities.

#### 4.2. Gold mining: an improvement in socio-economic conditions little or even felt by local populations

Human and socio-economic activities are dominated by agriculture, which is the main activity practiced by the majority of Houndé's population. Even though it is subsistence and extensive, using traditional means of production. Farms are either family, collective or individual. It is followed by livestock farming, which is the commune's second-largest source of income. It is carried out through two systems, mainly traditional, extensive, using few zootechnical and veterinary inputs, but also semi-modern, practiced through cattle and sheep fattening. Trade is one of the most important socio-economic activities in the commune of Houndé. The main products marketed are agricultural and livestock products. Sector markets n°1, 2 and 4, which are held every 5 to 7 days, form the trading network and headquarters for merchants in the town and its 15 villages. In addition to these activities in the commune of Houndé, there is mining activity, which has really taken off since the construction of the "Houndé Gold Operation" mine in 2016. The commune has enormous industrial mining potential. There has also been significant artisanal mining since 2008. This gold explosion offers new prospects for the commune's socio-economic development. Today, gold mining is one of the main sources of income for the local population, but also for the development of the commune. Figure 3 shows a number of socio-economic activities in Houndé.



Source Field surveys, 2023

**Figure 3** Human and socio-economic activities in Houndé

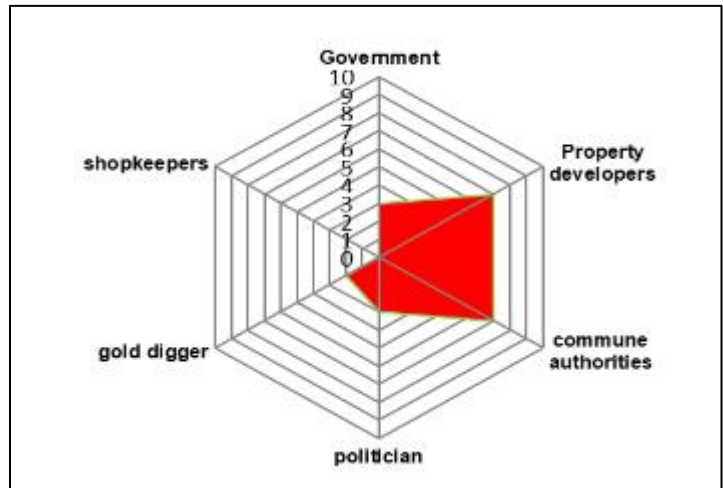
Agriculture is the main activity of the Houndé population (Figure 3 above), followed by industrial and artisanal mining. Many other activities are also practiced in Houndé, such as livestock breeding, trade, handicrafts and civil servants (public or private). Our results are cited by several authors, including [15, 16, 17].

#### 4.3. Mining and the dynamics of land actors between 2010 and 2020

Mining includes all operations in the preparatory phase, extraction, transport, processing and transformation of a mineral into a finished product.

Gold is the mineral mined in this study. Mining of this resource supports a strong demand for land according to current needs. These needs are also related to the increase in the population of Houndé. The actors are composed of various socio-professional categories, namely the state, land owners, municipal authorities, politicians, gold miners and traders (Figure 4 below). The state and land owners are the largest holders involved in land transactions in our various cities in Burkina Faso, particularly in Houndé in 2010. Land is generally used for the performance of services of the State or for buildings of the Sovereign. In addition to its infrastructure, there are land and administrative reserves and green spaces. Secondly, traders are also owners of many lots. The 35% of land owners in formal and informal in Houndé are gold miners, which testifies to the effect of the activity of gold in Houndé. Private companies, religious denominations are also not on the sidelines of strong land demands. The customary and households respectively request the lands for

ancestral and religious purposes but also for housing. Each of the applicants occupies large areas of land for multiple and diverse uses. According to the field surveys, 64% of the people surveyed believe that gold mining is the basis for its multiple land claims at Houndé.

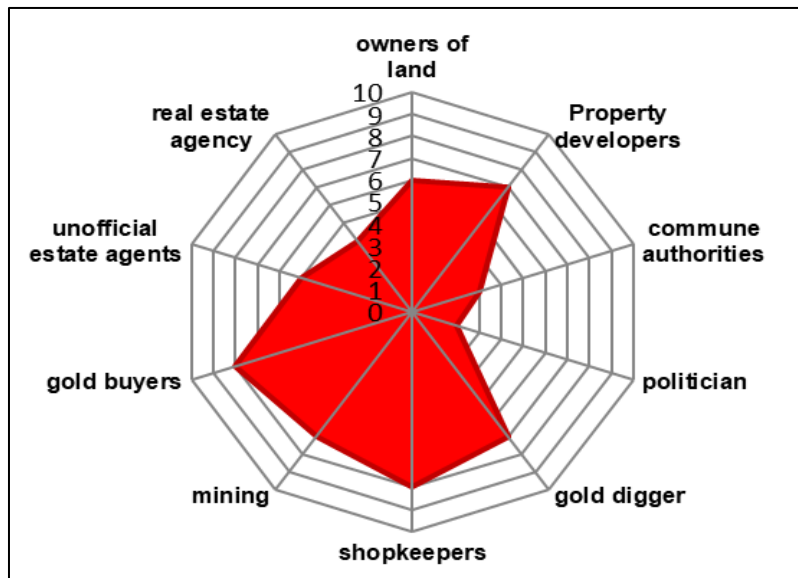


Source Field surveys, 2023

**Figure 4** Land actors in Houndé 2010

The actors of the land in Houndé have experienced an important dynamic between 2010 and 2020. This dynamic of the land actors is explained by the gold mining; the announcement of the installation of the industrial mine and its effective installation in 2016. Beyond the land actors listed in Figure 4 below, this period is marked by a massive influx of new players such as miners, gold buyers, real estate agencies and developers into the area (Figure 5 below). During this period, the dominant land actors are traders, mining artisans; real estate developers and miners.

The dynamic of the actors between 2010 and 2020 is motivated by the industrial exploitation of gold and the importance that the populations attach to land but also its guaranteed character in the future.

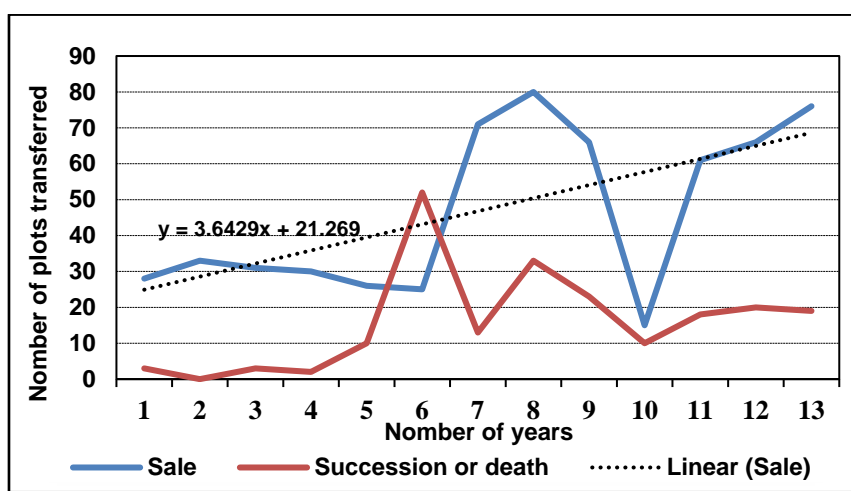


Source Field surveys, 2023

**Figure 5** Land actors in Houndé in 2020

#### 4.4. Impact of land actors' dynamics on urban land tenure from 2010 to 2020

Land changes are all the processes of changes in occupation and/or use of land, but also of land owners. The land was originally used for a specific purpose and may sometimes change depending on needs. In view of the gold activity developed at Houndé, the increased desire to invest in increasing the use of land. These lands are the green spaces transformed into gardens; reserves for commercial use and public areas in homes such as the aerodrome of Houndé. The changes therefore concern residential, commercial and production use. Other forms of mutation between living (sale), mutations by death or succession, mutations by exchange and mutations by donation. The sale of land is a hot topic in Burkina Faso, and the phenomenon has grown in Houndé with the boom in gold mining. It was aggravated by the industrial exploitation that Houndé knows. However, it was facilitated by the canvassing. A Pitcher is the intermediary between sellers and buyers of plots. Their role is to connect and facilitate negotiations between the two sides after the land has been presented to the buyer. The sale of the plots is followed by the land sold, a transaction of transfer of real property rights (Figure 6 below). Our results are confirmed by the work of [18, 19]. Our results are also found in [20].



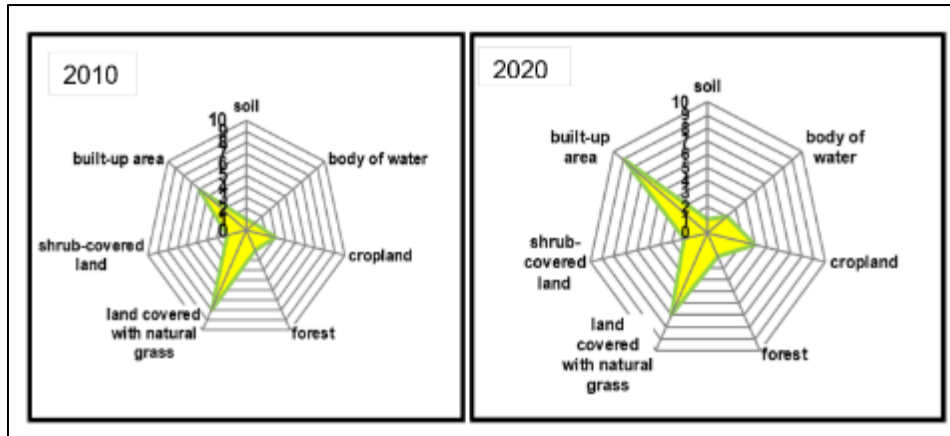
Source Field survey, 2022

Figure 6 Evolution of the transferred plots in Houndé between 2010 and 2022

#### 4.5. The dynamism of land use and occupation in Houndé

Land use and occupation are generally confused terms. Land use refers to physical coverage, while land use refers to the anthropization of land and primarily the socio-economic function of land.

Land use is a type of physical cover such as grassy or artificial surfaces and forests. The dominant occupation and use units in Houndé in 2010 were natural grass land and built-up areas followed by croplands, shrub land, forests and water bodies (Figure 7). The dominance of the two occupation units shows the low involvement of land actors and therefore the urban dynamics in Houndé. Land use and occupation changes are continuous, either through human action or as a function of the physical environment through climate, soil, vegetation, water and air. In the gold-rich zone, as in Houndé, this dynamic of occupation and land use becomes more diversified and important, because land ownership has become the central part of socio-economic activities (Figure 7 below). According to this figure, built-up areas are the most dominant (532.91 ha) followed by natural grass land (408 ha). The dominance of built areas in 2020 testifies to the intensification of land investments in the city but the strong dynamic of the actors of the land in Houndé. Urban crops are also banned by the city's municipal authorities, as is the dispersal of animals in the city, thus promoting the development of natural herbs during this period.



Source Field surveys, 2023

**Figure 7** Land use changes between 2010 and 2020 by population

Figure 7 above shows that man plays an important role in land use and occupation changes, since he controls the majority of the space. Since the gold boom, changes in land occupation and use have accelerated, contributing to the urban and peri-urban land changes of Houndé. Other authors such as [21 and 22] also define land use in all its complexity, because it depends on the socio-economic use made of the land. [21] continues by showing that land use and occupation changes are continuous under the action of man and function of the physical framework.

#### 4.6. The consequences of the dynamics of land actors on the profile of buyers



Cliché NAMA Mathieu

**Figure 8** Investment on a plot outside subdivision in Houndé

The land is extremely expensive in Houndé, so in 2005 a 400 m<sup>2</sup> plot in Houndé cost only 350,000 FCFA and could reach 450,000 to 500,000 FCFA when it is near a paved road. The gold mining boom of the 2010s has slightly raised land prices. In 2010, a 400 m<sup>2</sup> plot still cost 700,000 FCFA. In 2016, this same 400 m<sup>2</sup> plot cost 12,000,000 million FCFA to Houndé in sector 4. Land outside of residential development before all these periods was given for two chickens regardless of area. A land owner in the Bobi district, sector 2, described this acquisition as a pre-donation. Today the explosion of gold (gold mining and industrial) has contributed to changed the data on land cost in formal as well as informal. The minimum price for a 400 m<sup>2</sup> plot in the formal area of Houndé is 3,000,000 FCFA. One respondent states that this price is only valid in the low-lying area of sector 4. In the non-subdivision area, a land of at least 400 m<sup>2</sup> costs 600,000 FCFA. Some can reach 10,000,000 CFAF if they are located near a paved road conducive to commercial activity. The land is revealed as the central piece of investment and urbanization. It is also the subject of speculation because land is a source of enrichment for many people. We can justify this through the total number of plots mutated 814 either



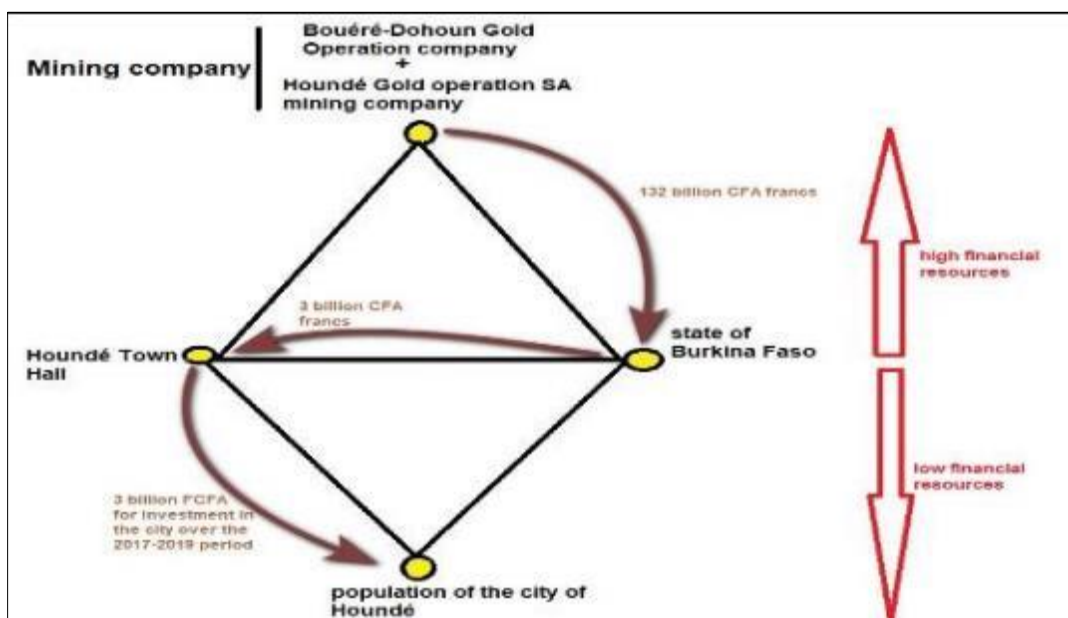
by sale or by succession between 2010 and 2022, or in only 12 years (interview with RDPF/H on 23/01/2023). Figure 8 below shows an investment by a strange trader from Bobo-Dioulasso on land outside the subdivision in Binté opposite the RN1 to build a bakery.

We can therefore say that our results also confirm those of [18]. According to [21, 18], which show that land has become a business opportunity for a certain category of urban dwellers. Indeed, it is a safe way for investors to access wealth.

#### 4.7. The exploitation of the gold mine: a development towards the top that forgets the local populations

##### 4.7.1. Gold in Houndé: an unequal distribution of financial resources to the detriment of the city of Houndé

In Houndé, the industrial exploitation is carried out by the mining company Houndé Gold operation SA and the company Bouéré-Dohoun Gold Operation SA. The cost of the investment project of the mining company Houndé Gold operation SA is estimated at 200 billion FCFA. The expected production is 6 to 8 tons of gold per year, or a total reserve of 48,210 tons of gold. Figure 9 below shows the distribution of gold resources between the state and the city of Houndé, this division is to the detriment of the city.



Source Field surveys, 2023

Figure 9 Unequal sharing of gold resources between the state and the city of Houndé

Figure 9 shows that the State has accumulated financial revenues of around 129 billion FCFA for the mining company Houndé gold operation SA, and more than 3 billion FCFA for the municipality of Houndé. The town hall of Houndé in 3 years from 2017 to 2019 received almost FCFA 3 billion under the Corporate Social Responsibility (CSR) and the Local Development Mining Fund (FMDL), which fund is supplied by the gold exploitation in the city. A summary of the resources received by the City of Houndé between 2019 and 2021 is presented in table 1 below on behalf of Houndé Gold.

Table 1 Different instalments of Mining Fund and Local Development

Year	Period	Donor structure	Beneficiary structure	Amount received	Total Amount
2019	1st half	Houndé Gold Operation SA	Commune of Houndé	189,070,753	4,520,597,298
	second half			747,756,821	
2020	1st half	Houndé Gold Operation SA	Commune of Houndé	1,213,233,041	
	second half			1,015,190,760	
2021	1st half	Houndé Gold Operation SA	Commune of Houndé	1,355,346,298	

Source field survey, 2023

The expected local development fund is around four hundred five million seventy-eight thousand nine hundred sixty (405,078,960) FCFA.

#### 4.8. Generating mining revenues for communities and populations

The amounts mentioned above and table 1 are direct benefits that will make a major contribution to the social development actions of the state and local municipalities. Did his different figures allow investments in Houndé? According to the City Hall and the former Maire de Houndé, the FMDL has allowed to build social infrastructure of Base.

These are 5 Health and Social Promotion Centers (CSPS), 5 Colleges of General Education (CEG) and 6 Primary Schools. For secondary school, the town hall based on the FMDL has built the management of the Lycée Municipal de Houndé and classrooms. In the water sector, the city council says it has built twenty-four (24) autonomous water stations. In addition to this, the construction of 133 shops in the city of Houndé spread over several sites is observed in the figure below. There are 48 shops opposite the Houndé 'A' school, 35 in the new market and 50 on the green space just after the Houndé bus station. Several investments have been made in several development sectors in the city of Houndé through artisanal and industrial gold mining. Figure 10 below shows an investment made based on the FMDL.



Cliché GUIRO Gafoura, January 2023

**Figure 10** Public shops in Houndé

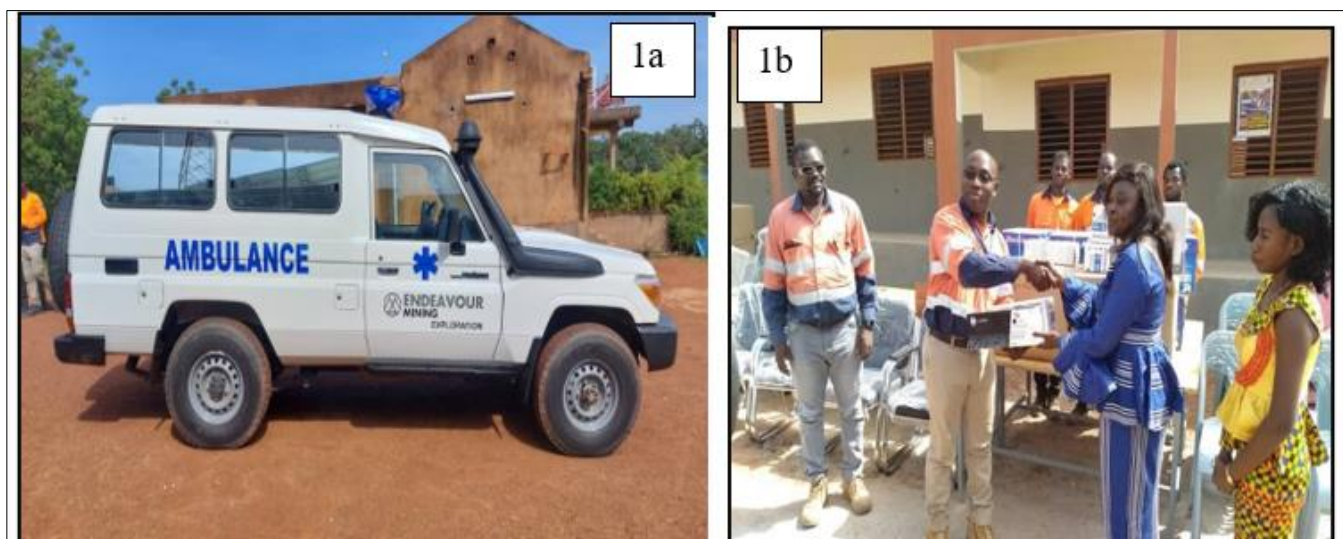
Figure 10 above is a sample of public shops in the city of Houndé by the Town Hall of Houndé. The shops were created through the local development fund, which is an economic spinoff of mining in Houndé.

#### 4.9. Houndé Gold Operation investments in the urban municipality

The mayor of Houndé, Dissan Boureima GNOUMOU had complaints about the asphalt of 100 km of road in the province of Tuy, the construction of a dam for off-season crops, an extension of the subdivision of the town of Houndé at the opening of the mine (The Communication Directorate of the Presidency of Faso 09/12/2017). Achievements have been made by the mine under the Corporate Social Responsibility (CSR) framework. The areas covered by this responsibility are water and sanitation, education, health and income-generating activities. All these investments amount to more than one billion CFA francs. In the health sector, HGO built a CSPS, a housing for nurses, all electrified. The cost of realization rises to 130 million FCFA (Interview with the City).

According to the report of "l'expressdufaso" by KHEPA TRAORE/Houndé, adds that as part of its RES, HGO donated a complete set of radiology equipment, a printer and consumables to the Medical Center with Surgical Antenna (CMA) in Houndé. The value of the donation is 50 million FCFA. In addition to this infrastructure, two schools of three classes at a cost of 46 million FCFA for the village of Bouéré. In the water sector, the company paid its financial contribution to water of 757.3 million FCFA.

These same investments were confirmed by Jacques Théodore Balima/Lefaso.net, during their caravan «Houndé Gold Opération built infrastructures for the benefit of the municipality». Under the old Mining Code, mining companies could build infrastructure, even if they deduct the amounts of these projects later in the FMDL. The new Code adopted in 2015 no longer allows this deduction to mining companies (Ex-Maire de Houndé). Figure 1a is a donation of an ambulance by Avion Gold, a subsidiary of the Endeavour Mining Group in the municipality of Houndé as part of social responsibility. As for figure 1b, it is a 4-room school complex incorporating an office and a store with school furniture by Houndé Gold Operation whose project cost is estimated at 45,876,997 CFA francs in 2018.



Cliché Houndé Town Hall, August 2024; Lefaso.net, 31/12/2018, accessed in March 2023

**Figure 11** Mining investment in the town of Houndé

It is true that many investments have been made in the city of Houndé by the mine and the municipal authorities for the well-being of populations and for the development of the city, But it is clear that other sectors or infrastructures lack investment. These results are similar to those of RAHARISOA J. (2021) [22] and DRECHSEL F. et al. (2018) [8].



Cliché NAMA Mathieu, January 2023

**Figure 12** The state of roads in the city of Houndé

This is the case of the road infrastructure in the city of Houndé. Today, Houndé still does not have a single meter of paved road. The same applies to the drainage channels for stormwater in this “gold city”. Water erosion through

stormwater runoff has stripped almost all of the roads in Houndé. The general mobility in Houndé is therefore the worst nightmare of the population of Houndé in time and space. In the rainy season, the lack of storm and sewage drainage makes the city's roads impassable. In the various arteries of the city, the multiple chicken nests where stagnant water of all kinds daily complicates circulation. In the dry season, the whole city is covered with dust. These tons of dust would be a source of several diseases for the populations of that city. According to one interviewee, road infrastructure is essential for the development of a city. He added that investing in road infrastructure is a duty for the mine and municipal authorities. The respondent assumes that the construction of 5 km of roads and 1 km of a gutter per year in the city, since the opening of HGO, could allow to compare Houndé to Ouagadougou."

Through this figure 12 above, we can notice the degradation of roads in the city of Houndé. On this road, the entire driveway is affected and stripped by water erosion through rainwater runoff. This is mainly due to the lack of a drainage system for this rainwater.

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## 5. Conclusion

The economic development of the city of Houndé is characterized by the monetary gains of gold workers, 62.50% of the respondents. These gains are the wage offers, 26.04% of respondents, the dynamism of the commercial sector thanks to gold activities and taxes paid by gold players. It is particularly the FMDL and the RSE that allow to make socio-economic investments, 26.56% of the people surveyed. Indeed, 92% of the people surveyed say that gold mining brings them income directly or indirectly. Also, 74% of respondents agree that gold has contributed to improving the incomes of the Houndé populations. According to our respondents, the city of Houndé owes 94% of its economic, demographic and spatial development to gold mining. Some respondents, 44.79% say they have invested in land (built plots), 11.72% have acquired unbuilt plots and 37.51% say they have invested in commerce, agriculture, livestock and other. We can add the recent action of real estate developers prompted by the mining boom in Houndé but their number remains significant. We also note the market-starters, politicians and economic operators who are heavily involved in urban sprawl through land grabbing. Also, add the deterioration of the social fabric linked to land conflicts. Indeed, 88.54% of the respondents say that the city of Houndé records cases of land conflict.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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