



The Representations of the Population of the Lubumbashi Commune on the Proliferation of Service Stations near Homes: A Comprehensive Analysis

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Abstract

Introduction: The proliferation of service stations near homes is harmless and constitutes a real public and environmental health problem. The objective of our study is to examine the representations of the population of the municipality of Lubumbashi on the risks of fires to which this population is exposed due to the fact that the city of Lubumbashi does not have a fire brigade service to deal with possible fires. **Methodology:** A qualitative study was carried out in the city of Lubumbashi, especially in the commune of Lubumbashi in 2018. **Results:** We observed that in most cases, the population is aware of the risk presented by the installation of saltation services near homes. **Conclusion:** The government must ensure that service stations are established while respecting security measures for both the population and the environment rather than prioritizing economic interest to the detriment of the population and the environment. Gas stations are established without respecting legal standards on the location of these stations. Legal standards require a safety margin of 25 meters from any house, the same distance must be respected from the traffic lane.

Subject Areas

Public Health

Keywords

Population, Representations, Service Stations, Proliferation, Lubumbashi

1. Introduction

Faced with global warming and the numerous pollutions which over time represent a danger for the world, the environmental issue has become a concern on both the national and international scene.

To date, the United Nations classifies the environment among its three priority pillars, namely, Human Rights, peace and security which include the environment and development for the success of the objectives it has set itself already assigned.

Breathing higher concentrations of gasoline vapors following air pollution can irritate our lungs, and harmful neurological effects such as dizziness and headaches are among the effects of closer proximity of gas stations to homes [1] [2].

In Cameroon, the different locations of petroleum product distribution stations, also known as “service stations”, present several questions given the spatial objects that surround them. The proximity of distribution infrastructures to public places expresses contradictory positions with regard to the legislation on the distances of this equipment classified as dangerous for human health [2].

Guellord, Sangwa Kiteba, in his study on the environmental impacts of service stations, found that the latter has enormous risks linked to their radiation, that they do not have buffer zones and that their proximity is a permanent danger of serial fire in a city where firefighting vehicles are almost non-existent, hence the town hall has a responsibility for regulating the points of sale of petroleum products in order to save human and material lives [3].

Fire risks were also mentioned by the National Institute of Industrial Environment and Risks [4].

2. Methodology

We conducted a qualitative phenomenological study on the impact of the proliferation of service stations near populations living in the city of Lubumbashi in 2018.

Study Population and Sampling

The population of the Lubumbashi commune in general and those living near service stations is what constituted our study population.

Data collection and analysis

We drew up an interview guide based on which the data was collected.

Regarding ethics, we obtained consent from the interviewees, and we ensured confidentiality and anonymity.

The interviews were recorded with a Dictaphone, then transcribed into MS Word, and then codified. The analysis was carried out by theme with themes deduced from the objectives. Analysis of the content of transcripts was made by theme.

Results

Our results will be presented in the form of themes (Sections) on the population's representations of the proliferation of service stations near homes.

Section 1: Increase in service stations near homes

This section includes two subsections, namely the first which concerns the process of liberalization of the oil sector with the proliferation of service stations in Lubumbashi the second subsection analyzes the issues underlying this proliferation

1) From the liberalization of the oil sector to the proliferation of service stations

It was in a speech given in 1997 by the late President M'zée Laurent-Désiré Kabila that the liberalization of the oil sector was enshrined with the consequences of the massive entry of vehicles into the country which resulted in an increase in fuel requirement. Before this period, the city of Lubumbashi only had a few service stations: TEXACO, SHELL, MOBIL OIL, FINA, etc. These stations belonged to large oil companies, and they had useful safety devices in the event of threats or risks of fire: fire trucks, firefighters, equipped and trained personnel, fire extinguishers, sand, and water hydrants.

2) The issues underlying the proliferation of service stations

The multiplication of stations in the city of Lubumbashi is underpinned by several issues, notably political, economic-financial and normative. We will start by examining the normative issue.

(1) The normative issue

The service stations today that we find scattered here and there throughout the city are also the result of a lack of respect for legal standards. Legal standards which are regulations on the location of these stations exist in the Democratic Republic of Congo. However, most economic operators are thirsty to make as much money as possible, in collusion with certain state agents, and they are unable to respect what is provided for by Congolese laws in this area.

This is what justifies the fact that gas stations are multiplying everywhere to the point where many of them are erected even next to inhabited houses.

According to legal standards collected from the Urban Planning Division, for a gas station, the safety margin is 25 meters from any house, and the same distance must be maintained from the traffic lane. What we have observed is that these regulations are not respected. The economic operators who own the service stations are guided by the quest for money.

It appears that one of the official standards to be respected in the location of stations is the environment. The municipalities are supposed to carry out censuses of existing stations, delimit and specify the zones of their location according to a strategic plan. However, this is not respected at all, the city has lost its usual landscape, because the stations have multiplied to the detriment of urban planning standards. The objective of respecting the principle of sustainable development is more than sacrificed. This analysis is inspired by the words of the head of the town planning division:

In the official forecasts, according to the head of the Urban Planning Division:

“Chaque commune doit avoir un plan communal de prévention et celui-ci énoncera les mesures nécessaires pour prévenir l’augmentation de la population en procédant par le recensement des stations-services existant afin d’arriver à prévoir la création et la localisation des stations à l’avenir. Dans le cadre stratégique, l’autorité compétente doit délimiter, préciser les zones et compléter les orientations de la stratégie en fonction des enjeux économiques, sociaux et écologiques. Car, l’environnement est plus capital pour le développement durable. D’où l’aménagement de la commune de Lubumbashi devra recouvrir sa beauté d’antan”.

Apart from the normative issue, the proliferation of service stations near homes is underpinned by others such as the economic-financial issue.

(2) Economic-financial issue

Currently, gas stations are considered the most profitable investments by most economic operators; they generate a lot of financial profits and as quickly as possible. And they developed a formula according to which: “gas stations djoileikonlipa” in other words, only gas stations are profitable. In this representation of profits, they are little concerned with the standards regulating their erection or location.

The Democratic Republic of Congo has repeatedly faced political and economic crises for several decades; political crises consist of the contestation of power by the population as at the time of the Mobutu regime, characterized by a long sovereign national conference whose resolutions were not cast in the form of laws by the former President of the Republic, Mr. Mobutu.

The refusal of the democratization of power by former President Mobutu later resulted in the decline of the State, excessive inflation and the depreciation of the currency leading to great poverty among the population. This situation has resulted in instability in investments, the looting of investments, and the destruction of small and medium-sized businesses and the unemployment of many people.

During the regimes that followed Mobutu, the economic situation remained disastrous as it is today: depreciation of the Congolese franc against the American dollar, inflation on the market, scarcity and increase in petroleum products. This chaotic economic situation is coupled with a political crisis marked by the illegitimacy of political institutions. The political crisis surrounding the legitimacy or illegitimacy of the current power accentuates the economic crisis to the point that most investors who fear possible looting and loss of profits find it better to invest in petroleum products. This is where they intend to surely make profits rather than in other activities.

It is in this sense that Michel expressed himself:

“We are really facing political and financial crises. That’s why most people invest in gas stations because there are few losses”.

The capitalist mentality of always producing more and earning more has won over most economic operators who are only concerned with financial gain. Winning and winning more and more has become the norm.

The proliferation of service stations responds mainly if not exclusively to the quest for financial profits. And this money is not used for the development of the country but rather to line the pockets of economic operators and state agents who issue them operating permits on the basis of bribes. It would be better for the state to play its role as guarantor of the security of its citizens instead of being only concerned with earning money which is not used for the development of the country.

Our comments are inspired by the words of Mr. Victor:

“We have to be able to place the stations in the appropriate places and not just anywhere. All this just for money which serves no purpose in the country other than filling their pockets. In addition, gas stations do not even have appropriate equipment to intervene when there is a fire. The State must really play its role instead of being interested in money”.

Our observation on the ground also allowed us to note that economic operators buy land for residential use from the land registry services but then they use this land for commercial use. The land registry agents are powerless, because the operators are big vegetables (people with economic and political influence), they use their economic power to dissuade any prosecution or to corrupt state services.

The proliferation of stations in the city of Lubumbashi for a certain population of Lubumbashi would be due to the fact when at a time there was a scarcity of petroleum products and their price had increased significantly due to this scarcity. The fact that fuel was becoming more and more an expensive and rare commodity meant that many investors turned to the sale of fuel. And this was made easier by the reduction in import taxes. Investors invest more of their money in cities where there is a high demand for fuel, such as the city of Lubumbashi. This race to invest in fuel means that stations are being built next to homes.

Mr. Louis agreed with our analysis:

“The multiplication of stations is because at a certain time there was a shortage of fuel, fuel was rare and increasingly expensive. This means that fuel has become a very expensive commodity for consumers. Many people then got involved in investing in the sale of fuel given that we had at one time reduced taxes on the sale of fuel, but this problem came with market policy”.

Apart from the economic-financial issue, there is also the political issue.

(3) Political issue

According to our observations made from interviews with the head of the environment division, the head of the hydrocarbons division and the head of the town planning division, it turns out, according to them, that it is politics that dominates and takes precedence today. “Today on everything else in the Democratic Republic of Congo. Politics dominates everything, technology, administration, etc. We put the ammunition in front of the weapon, according to the head of the town planning division”.

In other words, the technical and environmental standards regulating the

erection of service stations in our country no longer count, they are relegated to the background. Politicians use their influence to circumvent them. When technicians or field agents from said divisions do their service monitoring, they are not welcome for economic operators with service stations. They enjoy the cover of many politicians.

This is how each time they are caught in the act by state service agents, there is immediately a call from the national minister or his representative who gives the order to not question the economic operator in question.

Other operators who have several service stations only operate with a single operating permit. These operators operate freely, and state services do not have the power to question them, because these are people who are covered by politicians or the closest members of certain politicians in Kinshasa.

The second section concerns the representations of the population on the erection of service stations next to houses.

Section 2: Stakeholder perspectives on the proliferation of gas stations

We will firstly explain the population's perspectives on the proliferation of service stations and secondly; we will examine those of the agents working in the stations and the economic operators, who own the said stations.

1) The population's outlook

The first subsection concerns the links between the stations and human insecurity, the second subsection discusses the representations of the stations as a source of security, and the third subsection shows how the representations of certain populations of the commune of Lubumbashi associate service stations with providers of economic security and finally, service stations are associated with health insecurity.

(1) Service stations: source of human insecurity

The fact that gas stations are located near inhabited houses in the commune of Lubumbashi, the population perceives as a source of insecurity. The population living next to these gas stations thinks that they are in danger because there could be a fire and in this case, there would be victims among them. The latter thinks that this proximity to these stations can also cause illnesses.

For the population, the fact that these stations are built next to homes is sufficient proof that they were not built in accordance with urban planning standards. Our analysis above was inspired by the words of Ms. Clary:

“Which puts us who live next to gas stations in danger with a lot of risk of fire and disease. Well for me, the proliferation of gas stations represents insecurity because they are really poorly located. We always place the gas station next to the houses where people live but it is a danger for us; at least if we placed them far from us”.

If the station agents are content to say that their stations have sufficient security measures to deal with fires, this opinion is not at all shared by certain inhabitants of the commune of Lubumbashi. They believe that the stations do not have the appropriate means to deal with a fire. They fear that there will be several deaths in the event of a fire. For them, they are convinced that the fact that the

stations are erected next to homes can only constitute a danger. It is the location of these stations which poses problems for the category of actors who fear their proximity. These stations should be erected far from homes, they believe.

Mr. Lumbu agreed with our comment:

“Since our gas stations do not have appropriate means just to put out the fire and therefore, there are a lot of risks. In the event of a fire, we have less idea of who could die! Leaving stations next to homes is dangerous. Their location is not good at all. They must not place their stations in appropriate places and not next to homes”.

For some citizens of Lubumbashi, the risks that the stations present for the population are fires. These can be caused by the neglect of station staff to respect safety standards. It is the location of these stations which is in question and therefore the proximity to homes can have consequences on the population.

Contrary to what station staff who rely on the effectiveness of the safety system think, some lusoïis believe that it is made up of bad or unsuitable tools.

This is the case, for example, with fire extinguishers. First, the staff does not know how to use the fire extinguisher, even if some know how to handle it, the fire extinguishers in question are small tools adapted for houses and not for the size of stations. They cannot cope with the gigantic flames of the station fires.

Station staff just say they have sandboxes, but many stations don't. In this case we can ask ourselves what they can really deal with in the face of fires. They say that they prohibit people from calling on the stations, but the observation is disappointing, people continue to communicate when they are on the stations. At least the ban on not smoking, people respect it and the ban on stopping vehicle engines.

Stations next to homes really represent a real danger for the population. The day a station catches fire, it will be difficult to imagine the number of deaths this will cause due to the dangerousness of the fire. Because there will be a long time before the fire is brought under control; in the meantime, human lives will be lost in the fire and houses will be destroyed. The reason is simple, the fire extinguishers used by the stations are not suitable, and they are for small fires and not for fires the size of gas stations.

The political-administrative authorities who issue operating permits to the stations served do not understand the danger posed by stations located not far from homes.

It is in this sense that Francis expressed himself:

“We have the risk or threat of fires, which can be caused due to the neglect of respect for the safety measures taken by the managers of the stations to prevent fires. Gas stations have already become a danger for the population due to their poor location.

Measures are taken, they say they have fire extinguishers that they themselves do not know how to use. Even more, what kind of fire extinguishers are they? These are small fire extinguishers that are used in homes just to warn in case there is a fire. And that's what they use to put out the fire. They also say they

have sand but often most stations don't have a sandbox and yet the fire can be huge, so what can they deal with the fire?

With just one sandbox? No! They tell people not to call gas stations but people do. At least people respect the ban on not smoking and stopping the engine.

First of all, gas stations next to inhabited houses are really a danger for the surrounding population because the day the station catches fire I can't imagine how many deaths there will be and above all the problem will be due to the time it will take to put out this fire in the meantime the houses will be destroyed because the fire extinguishers they use are such that they cannot be used for small fires. These fire extinguishers are for use in homes and not in stations. In addition, I often wonder if these people who authorize the installation of service stations near inhabited houses, in particular the mayor of the city, have at least the idea of the risks that service stations present.

There is therefore no doubt about this situation, the proximity of stations to homes is a real danger for human lives. The population living around these stations lives in permanent insecurity, not knowing when danger may arise. Children no longer know where to play and parents have to keep an eye on them lest when a fire occurs, they will be the first victims.

Mrs. Nico:

"Gas stations are very dangerous for people, especially when they are installed next to inhabited houses. The location of stations is a bit problematic in our country. Sometimes we have children who want to go play but we are afraid to let them go because with the presence of gas stations, like here at home, we already have two. So, we are afraid, we don't know when there could be a fire and especially for our fate".

Of course, there is a need to have gas stations, it is good to have them because they are the sources that provide us with fuel. And then, it is at a reduced distance today due to the proximity of these stations. The problem is the location, there are avenues where there are 2 to 3 stations, it should not be like that. This proliferation is worrying.

Mrs. Nico:

"I would say that it is better to have service stations because it allows us not to go very far to get fuel and above all it allows foreigners who do not know the environment better not to walk too much. I will also say that the station location is so bad. In the sense that we end up having 2 or 3 gas stations on the same avenue, which is really a problem for us who live next to stations. Because today, we have crazy people everywhere in the city. Supposing that a madman lights a stick of a match at a station, or by mistake, a person throws a pipe of his cigarette onto the pump, you can imagine how many deaths! It's really a disaster to see 2 and 3 stations on the same avenue. I really ask investors who use their connections to set up stations anywhere to stop. What interests them is money and our leaders must be aware of the risks presented by service stations which are installed next to houses".

(2) Gas stations: a source of human and environmental safety

For a certain population of the commune of Lubumbashi, the fact that service stations are located next to inhabited houses is not a source of insecurity. However, they provide security for the neighboring population. These stations respect the standards relating to their work, they pose no threat to this population. A study carried out by Djaffer, DIB showed an influence of gas stations on the soil properties and the environment [5] [6].

Mr. Johnny:

“There is no threat or risk because they respect their work. I did not find that there is any risk. These stations helped us put out the fire in the neighboring plot. Me, no I don’t think there are any risks, perhaps for other people. Concerning the measures but there are fire extinguishers which helped us to put out the fire, I see the way they are chasing away the people who use the telephones on the station and the policeman that you see there, he chases away all those which pass with cigarettes or with fire”.

As we can see here, far from constituting a threat as certain Lushois actors perceive service stations as guaranteeing environmental safety to residents.

(3) Gas stations: providers of economic security

A certain population in the commune of Lubumbashi believes that far from constituting a danger for people living nearby, service stations allow them to refuel without having to travel long distances. Service station agents work well with the surrounding population; drivers who do not have immediate income can be served and can pay later. Service stations allow road users to find consumer goods over a shorter distance, so they are far from constituting a danger for this population. This analysis is inspired by the interview we had with Mr. Johnny:

“Gas stations help us a lot to refuel without traveling a lot of kilometers. We work well with them, sometimes the drivers come here to borrow fuel and they come to pay in the evening, I don’t see the harm in having service stations next to our homes”.

Mr. Kambu agreed with our interview:

“Compared to the proliferation, I would say that it is more advantageous for drivers because with many stations in our city, the price of fuel decreases and above all also public transport”.

Mrs. Mwewa also subscribes to the same perspective:

“My perception of the proliferation of gas stations is that it is a good thing. It’s good to have stations everywhere because even at night, you can easily get fuel than having to make long journeys just to get fuel”.

(4) Gas stations: source of health insecurity

Gas stations can cause consequences for human health and even cause fires.

This analysis is inspired by the words of Mr. Victor:

“The risks are mainly fires, but other illnesses can be due to the smell of fuel”.

There is the risk of fires but there is also the risk of diseases which are caused by the gas coming from the pipes installed in the basement. Fires that occur at gas stations located near homes will cause several deaths and the fuel will cause

illness in humans.

Armin agreed with our comments:

“The risks include fires and illnesses caused by the gas coming from the pumps that have already been installed in the basement. It is not at all good to have gas stations in a city, because the day the station catches fire, we will have many deaths but also diseases which will develop among people who live in the city of Lubumbashi”.

Stations close to homes present very high risks, particularly fires which may be due to the carelessness of the staff at these stations. There are people who continue to use their phones as if it is not dangerous at gas stations.

The human and material damage that would be caused by a fire is enormous. There is reason to relocate stations located close to surrounding populations, because it is a question of human security.

François subscribed to the meaning of our words:

“The risks are such that fires can be caused by carelessness. There are some people who do not accept the effect of saying that if you use your phone at the gas station, it may cause a fire. And now if it happens that these kinds of people use the telephone on the station and there is a fire, it could cause a lot of damage, which will lead to the death of men.

It is a worrying problem to have stations because it makes them unsafe. First, the location is so problematic because we manage to place them 5 or 6 meters away and on the same road. It really is a problem! Even if it is about making money, we must also take into account the risks that gas stations present next to inhabited houses. We really need to relocate the service stations located next to inhabited houses, otherwise the day they catch fire, we will have enormous damage”.

Jacqueline, B. after an analysis, confirms that the volatile hydrocarbon participates in the formation of ozone which irritates the lungs. Another representation is that which shows that gas stations are located in inappropriate locations.

(5) Service stations in unsuitable locations

For the population of Lubumbashi, gas stations are not where they should be built, so we find stations located only four or five meters away from houses. The responsibility for this problematic situation lies with the Congolese state, believe some populations; because the State should be aware of the danger that this can generate for citizens. It is in this sense that Mr. Victor expressed himself:

“The gas stations are poorly located. Because we find a station placed in the middle of four or five houses but what kind of location is that? Personally, I have always deplored this. The State must become aware of the risks that the population runs when we place service stations near homes”.

2) Representations of station agents and economic operators

The representations of station agents are complex, they perceive the proliferation of stations as a source of supply of fuel and other goods. Some perspectives show that gas stations have effective security arrangements, they lead to health security threats. For some agents, there is awareness of the risks presented by

stations located near homes, but what is reassuring is the security system. Some perspectives minimize the risks due to the said device. Finally, some perspectives question the incompetence of hydrocarbon services, politicians are responsible for this proliferation, worse still, and there is a culture of non-compliance with standards among the population.

(1) Stations: providers of economic security

On the side of station agents and economies, we sometimes find the same representations as among the population. For some of them, the multiplication of stations next to homes poses no problem, it is far from making the population unsafe since they can get fuel over a short distance. Finding fuel near where you live can only please any customer rather than having to travel long distances to refuel. This competitive environment was also mentioned by Abderrahmane [7].

“The proliferation of gas stations is not a problem because it helps the population to quickly get fuel without traveling a long distance”.

For station agents, stations should not only be seen in a negative but also positive sense. The fact that the population can get fuel there is a good thing for them. All you need to do is avoid erecting them anywhere like where there is a high concentration of humans. It is better to prevent the population from becoming victims once a fire occurs. The proliferation of stations allows the price of fuel to decrease and therefore guarantees drivers to find the product that allows customers to move around the city.

Fandi agreed with our comment:

“It’s also good because it helps the population to stock up on fuel, it helps reduce the cost of fuel and therefore it is profitable for the population. So, we must not only view the stations negatively, we must only have somewhere to place them to prevent the population from being victims”.

Apart from the representation of stations as providers of economic security, there is the one which shows that service stations have a security system.

(2) The stations have security devices

Certainly, there are risks with stations close to homes and the agents who work in the stations are aware of these risks and fear them. When a fire occurs, it will cover at least a distance of 500 meters. Some stations are in closed places and have security devices to cover any eventuality.

Thus, they take care to prohibit drivers from leaving the engine running when they are at the stations. Security personnel are always on standby to prevent people from smoking on the stations and using their phones, etc. Fire extinguishers and sandboxes are part of the safety system. It is in this sense that Michel expressed himself:

“Yes, there are risks, but above all we all fear fire. Because when there is a fire, we will calculate at least a distance of 500 meters which will be affected by this fire. Like our station, it is in a place that is a little closed but despite this, drivers are still prohibited from starting the vehicle’s engine when they are at the station. Security personnel are always asked to chase away people who use telephones at the station and especially smokers. We have fire extinguishers that will

help us in the event of a fire and sandboxes”.

For resort agents and owners, the numerous security measures are enough to reassure and secure even if there is not zero risk. And these measures are the most affirmed and reaffirmed by these agents: the ban on talking on the telephone in the station area, the obligation to stop the vehicle engine for the customer driver, the ban on passers-by and customers smoking fuel on the premises; sandbags to ward off a possible fire and fire extinguishers.

These measures reassure agents and reassure economic operators, who know after all their stations are located next to homes and markets.

Fandi, station agent, expressed his views in line with our analysis:

“There are many measures. It is strictly forbidden to talk on the telephone at the station, drivers are asked to stop the engine when they are at the station. We prohibit smokers from smoking on the station, we have sandbags to help us put out the fire and fire extinguishers which always help us to put out the fire”.

In short, the security system on which the stations rely would have two levels: the first consists of the measures that customers and passengers must respect when they are on the stations, in particular the ban on smoking, do not light matches, and do not communicate on the telephone.

The second level is made up of tools to deal with possible fires, these are fire extinguishers, sandboxes and fire trucks which will come to the rescue.

It is in this sense that Kimbili expressed himself:

“We have two levels of measures, the first we ask customers not to smoke on the station, not to use the telephone on the station and above all not to light a match or anything that could catch fire. And the second level, we have fire extinguishers or sand which will help us put out the fire first before the fire trucks arrive”.

As we can see, the station agents are content to highlight the security system that they have put in place while being aware that the risks are there, no matter, we can only deal with them.

(3) Station agents are aware of the risks and their extent

Station agents are aware of the extent of the risks that they present in inhabited areas and sometimes near public markets where crowds of customers flock. Fires can be caused by electrical cables, it can be a fire of criminal origin and, in particular, due to an unknown person. Fandi, a station agent, agrees with our comment:

“Our gas station is located in the middle of inhabited houses and there is also the market on the other side, the risks are always there. The fire, for example, can be due to electrical cables lying on the ground when there is an accident on express. Most people come to the station, we don’t know who can start a fire causing a fire, so there are really a lot of risks”.

In this rainy season, the risks are higher in the stations, because it is enough for it to rain, the flowing water can carry fuel onto the ground and as soon as a person lights a fire there, it is 'fire. No one in these conditions will be able to escape the catastrophe that will occur. The agents are aware of the risks posed by

the stations; however, they do their best to prevent fires from occurring.

The station agents are more satisfied with the safety measures that they have put in place, and this reassures them, it is about the fire extinguishers which they have, the sandbags. In addition, they monitor station regulations, for example the ban on customers not smoking in these areas, stopping the engine running for vehicles parked at the stations and the ban on not making calls.

Johny spoke along the lines of our analysis:

“Yes, during this period we encounter a lot of risks, sometimes if it rains there will be water that will flow. These waters can carry fuel which falls to the ground. Now imagine that a person at least throws the match there, that will be a problem. The fire will break out here and no one will be able to be saved. We have already planned some mechanisms in the event of a fire, there are fire extinguishers which will help us put out the fire, sandboxes too and above all we ask customers to at least respect our obligations which concern stopping the fire. engine of the vehicle on the station, not to smoke on the station and not to talk on the telephone on the station”.

Station agents highlight the security system put in place. For them, it is not a question of minimizing the danger presented by the proximity of service stations to homes. On the contrary, they are aware of it, but they do not understand that despite all this security arsenal the population does not understand that security standards must be respected. The real problem is that in our country, compliance with legal standards does not concern anyone. There is a sort of anomie in the matter.

Kasy, station agent:

“We have provided fire extinguishers, sandboxes, sometimes we write and ask customers to stop the engine when they are stationed at the station, to avoid smoking and not to communicate on the telephone to avoid fires. Unfortunately, people don’t understand. This is why we have provided security agents who can arrest or chase away those who do not respect our provisions. We are aware of the risks that stations pose when they are located next to homes, but in our country, we respect nothing”.

The awareness of the risks posed by the stations among service station agents is higher. In the event of a fire, they are aware of the extent of the damage which will extend at least over an area of 500 meters. However, whatever the risk, the important thing is that the security system is there.

Adou, station agent:

“As for the risk, I can’t lie, there are a lot of them and especially when a fire occurs ha haha! This is at least a problem because we can estimate at least a distance of 500 meters which will be affected by this fire. At home here we have made some arrangements: we have powder extinguishers and Cod extinguishers, which will allow us to put out the fire”.

In the representations that station agents have, we also find the perspective according to which they are harmful to human health.

(4) Stations: a threat to human health

Station agents are also aware that stations located on the same avenue or concentrated in the same place present high risks for the population. For them, this is not good. Because the steam that escapes from the stations has harmful effects on human health. Fandi agreed with this comment above:

“It is not at all good to have a lot of gas stations on the same avenue or in the same place because with the gas that the pumps give off, this can have effects on human health”.

3. Conclusions

Our study analyzed the representations of the population of the Lubumbashi commune on the proliferation of service stations next to homes. The question that served as our guide was formulated as follows:

How does the population of the municipality of Lubumbashi imagine the proliferation of service stations near homes?

A qualitative approach and the inductive approach were carried out.

Following the application of the techniques used, we were able to produce data which were analyzed using thematic analysis. The results of this analysis show that the representations of the actors are more complex regarding the proliferation of service stations next to homes in the municipality of Lubumbashi.

For the population, we have found that this proliferation can sometimes represent a source of human insecurity, security or even economic security. Some believe that gas stations are a threat to human health or that they are located where they should not be.

In these representations, the stations are seen as a danger for the people living nearby, because these stations can experience fires which will lead not only to the death of several people but also to considerable material damage. Responsibility lies with the State, which is supposed to ensure rational urban planning and avoid distributing station operating permits without worrying about human safety.

The population also thinks that the security means available to the stations are not appropriate. Fire extinguishers, for example, are not suitable for dealing with often gigantic fires at service stations. Fire extinguishers are rudimentary tools that are suitable at least for dealing with medium fires such as those that occur in houses and not for gas station fires. The stations lack fire-fighting trucks, whereas if a fire occurs, they will have to wait for fire-fighting trucks to be brought from elsewhere and in the meantime, many people will die, people will be injured, and property will be damaged.

Worse still, even the security measures taken by these stations are not respected, this is the case of the ban on calling on the stations, people continue to call on the stations as if it were not prohibited and as if it were permissible to do so without knowing that it involves risk.

The risks presented by service stations are obvious, but the political and administrative authorities ignore or minimize these risks by allowing the distribution of operating permits for stations which are installed more among homes

without worrying about the consequences human, health and environment.

A part of the population thinks that these stations make them safer to the extent that they respect the standards relating to their work, they do not constitute a threat to this population. Thanks to these service stations, the population living nearby was helped to put out fires whose origin had nothing to do with the said stations. They have fire extinguishers to deal with a possible fire. They have security personnel who ensure that passers-by cannot make phone calls at the stations and to prevent motorists or others from smoking in the station.

These police officers also ensure that there are no customers who may be tempted to accidentally light a fire at the stations.

Another representation of the population shows that gas stations do not pose a problem if they provide economic security. The population located near these stations can easily and quickly obtain fuel without having to travel long distances. What's more, these stations are increasingly surrounded by supermarkets which also allow the population to find the consumer goods they need.

Finally, other perspectives of the population on service stations show that they directly threaten health security to the extent that fuel evaporation seriously affects the health of residents. The latter develop illnesses because of this proximity which causes them to consume fuel without knowing it. When water flows with rain, fuel flows and reaches nearby homes, and this water will be used by the population for various services.

As for the representations of station agents and economy operators, they put at the forefront the services they provide for the benefit of nearby communities. For them, nearby stations allow people to quickly refuel, saving them long distances. They can buy fuel even at night. Gas stations are an economic good for the population.

They also put at the forefront the security system they have and for them, this system is a guarantee of safety, and it includes fire extinguishers, sandboxes, it is the first level of security for the stations. They also praise the second level of security, notably the measures concerning the ban on making calls at the stations, the ban on no smoking, and the ban on stopping vehicle engines once the vehicles are stationed at the stations.

This system is more than reassuring and allows agents and economic operators to minimize the risk of fires. Proximity is not in question but rather the services provided by these stations.

For station agents and economies operators, they have the measure of risks. In other words, they are aware of the risks presented by the stations, but they believe they have taken the necessary measures. To some, it might seem like they don't even pose much risk and it's the safety features that allow them to think that way.

As we can see, the representations of the population as well as agents and gas station operators are complex. Some agents and operators also believe that the stations represent a danger and threaten the health of the population, but they point an accusing finger at the political-administrative authorities. The latter

would distribute operating permits without worrying about the safety of the population. State services involved in regulating the exploitation of hydrocarbons place responsibility for this proliferation on those in power.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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