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**RESEARCH ARTICLE**

# Factors in The Deterioration of Social Housing in Central African Cities: The Case of Malabo in Equatorial Guinea

Josefina Monte-Nguba Siale[1 *], Hassane Mahamat Hemchi[2], Koffi Kpotchou[3],

[1]Regional Center of Excellence on Sustainable Cities in Africa (CERViDA-DOUNEDON)
[2]African School of Architecture and Urban Planning (EAMAU)
[3]University of Lomé - Sociology Department: Spatial Dynamics and Integration Laboratory, University of Lomé, Togo

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***Corresponding Author:**

auprofessionnel@gmail.com

**ABSTRACT**

The phenomenon of urbanization in African cities, stimulated by demographic growth, calls for initiatives to meet the demand for social housing. This situation calls for the implementation of several social housing production programs in some of Africa's major cities. Malabo, the administrative capital of Equatorial Guinea, has set up a large number of social housing programs in various periods, both colonial and post-colonial. The most notable production of social housing took place between 2010 and 2020 as part of the Horizon 2020 National Social and Economic Development Plan (H2020), which now extends to 2035. At present, a significant proportion (+80%) of the housing stock is suffering from physical and social deterioration, characterized by a range of structural urban, economic and environmental problems. A situation exacerbated by low social participation and a lack of resources, commitment and institutional management in the design, monitoring and implementation of these cities. This text analyzes the deterioration of social housing in Malabo and identifies the causes and consequences of this situation. The methodology adopted is based on a mixed approach combining field observations, qualitative and quantitative data to determine the main factors responsible for the deterioration of social housing, which include design and implementation faults and, above all, inadequate or even non-existent maintenance.

## INTRODUCTION

Urbanization in African cities is an irreversible process that requires the implementation of programs and projects to produce social housing in certain African cities. The origins of social housing can be traced back to the first collective housing programs set up before independence. These initiatives were gradually implemented in the 1950s in countries such as Morocco and Senegal (Sané, 2013) and from the 1960s in new states such as Cameroon, Equatorial Guinea and Côte d'Ivoire (Biehler, 2015). And in the late 2000s, efforts were made by some states to guarantee decent housing for the large and growing population (Jourdam-Boutin, 2018). This is the rationale behind the various social housing programs launched on the African continent, such as the 100,000 housing units in Senegal, 150,000 in Côte d'Ivoire, 40,000 in Burkina Faso and 20,000 in Benin (Mouton, 2023). However, the euphoria of building social housing without questioning the endogenous and exogenous parameters of design, implementation and cost has led to some projects being doomed to failure.

According to UN-Habitat forecasts (2020), African countries will have to accommodate most of the housing stock needed to house their populations by 2050. The various initiatives undertaken here and there remain insufficient, as many homes are faced with significant problems of deterioration in their design,

construction and appropriation of social housing projects built in the 2000s (Elisabeth, 2021). Despite population growth and urban renewal, there is a shortage of resources to meet basic needs in the face of the continuing deterioration of older social housing production programs, which pose a threat to social cohesion and sustainable urban development (Schiappacasse and Müller, 2008).

Research on social housing has mainly focused on the production of new housing through various programs implemented in most countries (Adedeji, 2016 ). Studies focusing specifically on the degradation of residential housing are rare in African cities and are often limited to an analysis of the built environment, without looking for other indogenous and exogenous factors linked to housing (Tra, 2017; Zerari et al., 2019). However, it is imperative to sustain these efforts not only by offering new housing, but also by improving the existing housing stock with a view to the transition to an inclusive and sustainable city. In Equatorial Guinea, social housing is not immune to deterioration. In 2015, the country faced a housing deficit of 115,000 units, according to INEGE (2015). To mitigate this deficit, the government has launched several social housing programs and projects as part of its Horizon 2020 National Plan (H2020), which has been extended to 2035. However, due to a lack of financial resources and the necessary local technical skills, most of these projects have been outsourced to foreign companies. This situation is partly responsible for the quality of the offer, which is sometimes out of step with the socio-cultural requirements of Equato-Guineans. According to Diaz and Rodriguez (2005), more than 60% of the deterioration conditions facing social housing in Malabo's various housing estates originated during the design and implementation stages.

It should also be pointed out that Malabo, the administrative capital, has benefited from a significant number of social housing units dating back to colonial times (Silva et al., 2015), and more recently from the 2020 National Development Plan. Currently, a significant proportion (69.89%) of this stock is in a state of disrepair that affects the built and social environment, creating a growing vulnerability of these urban areas, such as certain housing estates built on the bangs of the city (GE-Proyectos, 2024). This deterioration manifests itself at several levels: firstly, at neighbourhood level, with the proliferation of micro-disposal sites that undoubtedly affect the health of residents; secondly, at the level of housing estates, with overcrowding that puts pressure on infrastructures and essential services such as water and electricity; and finally, at the level of the dwellings themselves, with cracks, infiltrations and mould that compromise the comfort and safety of residents. These factors highlight the absence of an effective management mechanism for monitoring and maintenance after the acquisition of social housing for beneficiaries.

To remedy this situation, the State has undertaken a number of initiatives aimed at reducing the rate of deterioration of these facilities through their rehabilitation. Despite the efforts made, the methods adopted have focused on the physical aspect of buildings, while neglecting certain qualitative aspects necessary to guarantee their sustainability. These actions seem to lack strategy, a participatory approach and consideration of the social, economic and technical dimensions of degradation. As a result, the problem persists. Although initiatives to improve the population's living environment are to be welcomed, they remain isolated and insufficient. It is in this context that this study proposes to analyze the main factors behind the deterioration of social housing in the city of Malabo. Firstly, it aims to identify these factors of degradation, and secondly, to assess the initiatives put in place by public authorities and the general public in an attempt to alleviate the problem.

## MATERIALS AND METHODS

### Presentation of the study area

The city of Malabo, the economic capital of Equatorial Guinea, has a dual function as provincial capital and full municipality. Located at the geographical coordinates of 3° 45′ 07″ latitude North and 8° 46′ 25″ longitude East, it's about 17 km from Baney, the region's second-strongest municipality. Malabo enjoys an average annual temperature of 25°C and average rainfall of 2,183 mm per year (Rieucau, 2008). Its maximum altitude is 3,011 meters above sea level. Thanks to its strategic island location, it is an attractive and dynamic hub for the country's trade and industry. Initially organized into five administrative units known as urban districts (1990), the city underwent a major territorial reform in 2017. In accordance with

law no. 3/2017 of June 20, 2017, three rural localities have been integrated into the municipality, bringing the number of urban districts to eight. The municipality's surface area was 60 km$^2$ according to the 2007 Local Urban Plan. Today, the urban area covers almost 118 km$^2$. Moreover, according to Equatorial Guinea's first national population and housing census in 1983, the population of Malabo was estimated at 31,000. At the last census in 2015, it had around 271,008 inhabitants (RGPH, 2015). Finally, in 2024, the city's population is estimated at 366,157. See Map 1, which illustrates the location of the municipality of Malabo.

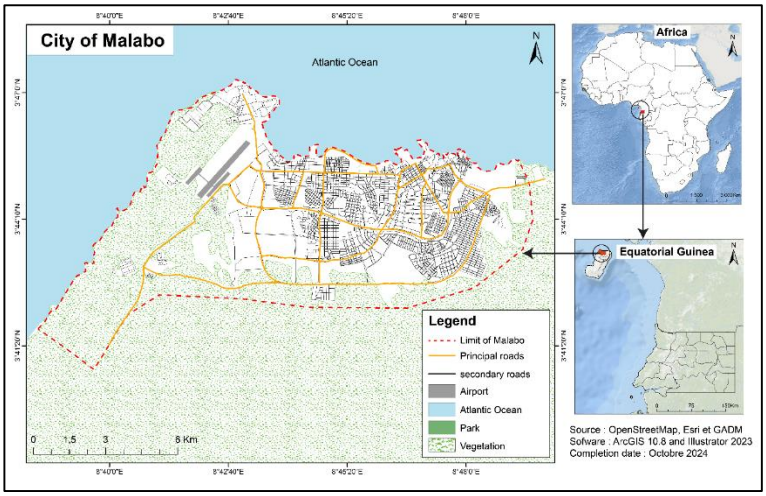



**Figure 1: Study area perimeter and location**

## Data collection and processing

This study is based on a mixed methodology combining documentary research, field observations and interviews with public and private institutions involved in the social housing production mechanism, as well as with heads of households living in the various social housing estates. The documentation enabled us to identify the contours of the theme and the choice of a definition that is consistent with the current situation of social housing in the city of Malabo. Field observations and photography enabled us to observe the state of deterioration of the social housing in situ, enabling us to make an empirical assessment of the situation. Finally, interviews with professionals in the sector, construction companies, social housing managers and heads of households living in the dwellings highlighted the various problems identified regarding the factors, causes and consequences of social housing production in the city of Malabo. Table 1 provides a detailed profile of the entities interviewed.

**Table 1: Profile of professionals interviewed**

| Structure | | Profile | Seniority (number of years) | Age (years) |
|---|---|---|---|---|
| Ministry of Public Works, Housing and Urban Planning (MOPVU) | Housing Department (DGH) | Architect-Urbanist (in charge of site supervision) | 13 | 41 |
| | | Architect (member of the social housing monitoring committee) | 10 | 38 |
| | | Engineer | 21 | 50 |
| | Urban Planning Department (DGU) | Head of urban planning section | 18 | 45 |
| National Real Estate Management Entity of Equatorial Guinea (ENPIGE) | | Manager | 15 | 57 |

| | | | |
|---|---|---|---|
| China Dalian | Site engineer | 15 | 42 |
| Project Planning Office (Ge-proyectos) | Monitoring and control officer | 8 | 35 |
| Social housing residents | Heads of household | 9-63 | 41-63 |

To guarantee the veracity of the data obtained from interviews with public and private institutions and residents, selection criteria were defined. For professionals from public and private institutions, participants had to have a minimum of five (5) years' seniority in the sector and have held a position of responsibility in this field. Residents of public housing projects must also have been with the company for at least five (5) years. The following approach was adopted for the choice of housing estates: Malabo's current housing stock of over 8,382 units stems from two periods of intervention (colonial and post-colonial). The city currently has 32 housing estates: 5 dating from the colonial era and 27 from the post-colonial era. Post-colonial housing estates account for around 89.5% of the total, or 7,499 units. In view of the similarities between the various estates, a representative sample of around 25.80% of estates was selected. This proportion concerns the following cities: Los Ángeles, Sipopo, Buena Esperanza I, San Juan, Vigatana, Arab Contractors, Malabo II and Paraiso.

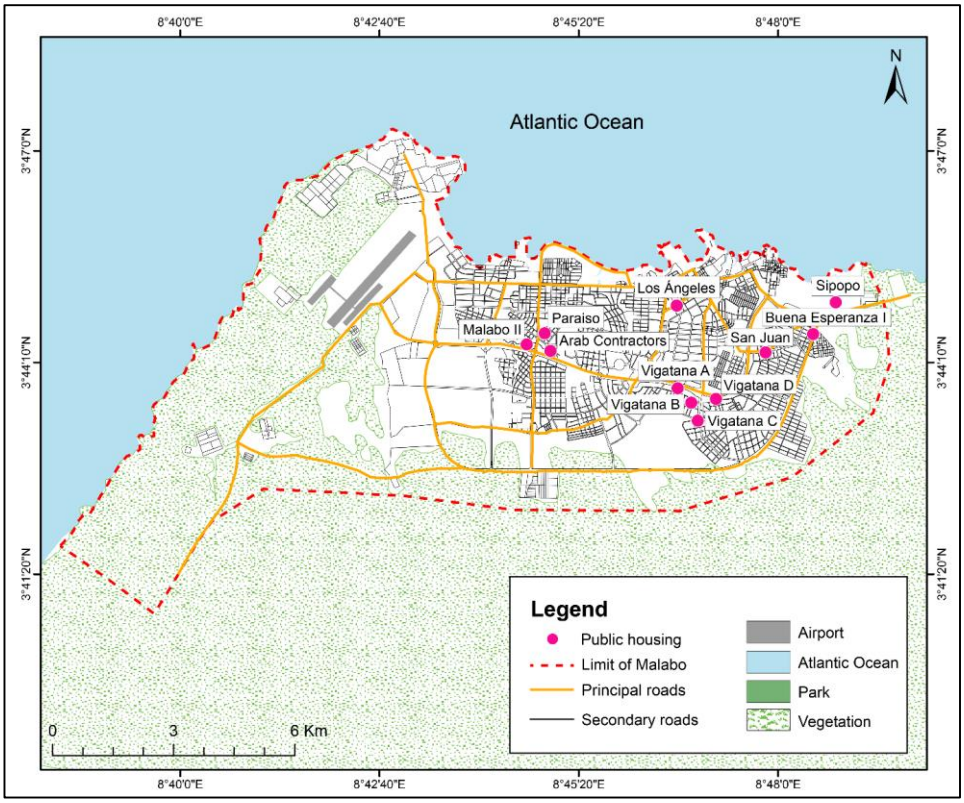



**Figure 2: Location of surveyed housing estates**

The cities have been randomly selected to meet the proportion of nearly one per thousand, providing us with a summary of the conditions sought. They include habitats that have undergone physical, progressive or premature degradation, and correspond to the different intervention periods identified in the present study. In addition, these housing estates show signs of social vulnerability that compromise the quality of life of the resident communities. To process the data collected through documentary research and field interviews, we used several software packages: Microsoft Office (Word, Excel version 2023) was used to produce tables and diagrams; similarly, ArcGis 10.8 and Illustrator 2023 were used to produce maps. It should be pointed out that the eight (8) cities identified in the surveys are based on respect for the geographical distribution of the various housing production programs, urban sprawl, Malabo's current

urban dynamics and, above all, the current approach to the political will for urban planning implemented by the highest authorities. This commitment is also reflected in the construction of major infrastructures to ensure the balance and accessibility of the city's various functions.


**Photographic plate 1: Overview of surveyed properties**

These photos illustrate the richness and heterogeneity of social housing production in the city of Malabo. The Los Angeles (a) and Buena Esperanza (c) housing estates do not have the same high ceilings as the other estates (b, d, e, f, g, and h). These are the first two to feature ground- and first-floor units (RDC and R+1). But in the Vigatana housing estate, there's only a small share of the 36-unit RDC for the middle class. Finally, it should be pointed out that although most of these housing estates are built to a height of R+5, access to housing is not discriminatory, but you do need to be solvent, i.e. a certain guarantee of average income or a deposit from your employer.

## ANALYSIS AND INTERPRETATION OF RESULTS

### Typology and characteristics of social housing estates in the city of Malabo

The production of social housing in Africa was a clear desire of certain States in the 2000s. A number of Central African countries have set up social housing estates, which are now showing their limitations. These boundaries are marked by the socio-economic, urban and architectural problems that characterize the African city. In urban terms, they are often located far from town centers; in socio-economic terms, they are poorly maintained; and in architectural terms, the dimensions of the homes do not meet the aspirations of the beneficiaries. In addition, these housing estates have undergone significant physical transformations that have contributed significantly to their deterioration. Table 2 details the characteristics of the social housing estates studied in Malabo. Analysis of this table reveals that the height of these housing estates does not exceed R+5, and the eight estates studied comprise a total of 4,781 housing units. The average household size is six (6) people. This gives us an expected population of 28,686. But on the ground, we note an increase in the size of households to 8, which gives us an overpopulation of the capacity of the housing offer of one (1) quarter, that is to say 9562 more inhabitants. This is due to the high density of occupancy per dwelling,

which puts pressure on the various networks (water, electricity, etc.) and above all on local social and community facilities, not to mention the quality of life in which this population lives.

**Table 2: Number of social housing estates**

| N° | City name | | Housing type | Surface area of housing estates (m²) | Number of units | Expected inhabitants | Current residents | Number of respondents |
|---|---|---|---|---|---|---|---|---|
| 1 | Los Angeles | | R+1 | 66 000 | 512 | 3072 | 4096 | 53 |
| 2 | Buena Esperanza I | | RDC | 730 000 | 1405 | 8430 | 11240 | 97 |
| | | | R+1 | | 64 | 384 | 512 | 20 |
| 3 | San Juan | | R+5 | 82 000 | 504 | 3024 | 4032 | 37 |
| 4 | Vigatana | A | R+5 | 160 500 | 192 | 1152 | 1536 | 37 |
| | | B | R+5 | | 144 | 864 | 1152 | 29 |
| | | C | R+5 | | 192 | 1152 | 1536 | 34 |
| | | D1 | R+5 | | 96 | 576 | 768 | 27 |
| | | D2 | RDC | | 36 | 216 | 288 | 15 |
| 5 | Arab Contractors | | R+5 | 100 000 | 492 | 2952 | 3936 | 52 |
| 6 | Malabo II | | R+5 | 47 000 | 288 | 1728 | 2304 | 38 |
| 7 | Sipopo | | R+5 | 40 000 | 456 | 2736 | 3648 | 34 |
| 8 | Paraiso | | R+4 | 54 000 | 400 | 2400 | 3200 | 26 |
| **Total** | | | | | **4 781** | **28 686** | **38 248** | **499** |

**Period of deterioration of social housing estates in Malabo**

The city of Malabo has benefited from real estate development projects since colonial times, with the first initiatives dating back to 1963. We had to wait until the 2000s to see a wave of social housing production financed by the oil windfall that the country had discovered. Table 3 shows when the first signs of deterioration appeared on social housing estates, according to the year they were built. All the housing estates studied showed signs of deterioration on average five (5) years after completion. It's worth remembering that some cités haven't even been up and running for three (3) years, i.e. from design to operation. This situation could be explained by a number of factors, including the speed with which the work was carried out. Secondly, there is a lack of palnification strategies and construction standards for these types of housing, as well as a lack of support for the use of these dwellings by residents after acquisition. Finally, the lack of monitoring and maintenance means that the various social housing operations each have their own particularities. Only the city of Los Angeles has been able to withstand the various constraints and pressures for ving two (22) years. This could be explained by the seriousness with which the design and execution were carried out. Interviews with construction companies and professionals in the sector corroborate the statements made by heads of households living in these housing estates. It should also be noted that only the Los Angeles housing estate has been the subject of a final acceptance agreement between the developer and the State. On the other hand, despite the absence of a final acceptance certificate for the other housing estates, signs of deterioration are significant at less than four (4) years old. This shows the extent to which each player must take responsibility for cities designed for an average life span of fifty (50) years.

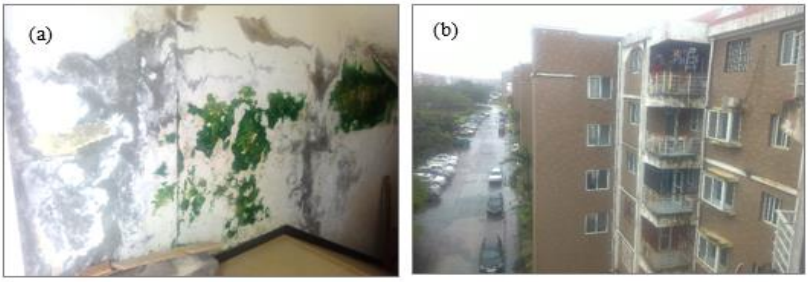
**Table 3: Duration of deterioration of social housing estates in Malabo**

| Social housing | Year of completion | Year of deterioration | Number of years before deterioration |
|---|---|---|---|
| Los Angeles | 1963-1967 | 1985 | 22 |

| | | | |
|---|---|---|---|
| Buena Esperanza I | 2008-2019 | 2015 | 7 |
| Arab Contractors | 2010-2013 | 2016 | 3 |
| Malabo II | 2010-2013 | 2015 | 2 |
| Sipopo | 2014-2016 | 2019 | 3 |
| Paraiso | 2013-2015 | 2016 | 1 |
| San Juan | 2013- 2015 | 2019 | 4 |
| Vigatana (A, B,C,D) | 2013-2015 | 2019 | 4 |

**Types of deterioration in social housing estates in Malabo**

The social housing estates resulting from housing for all projects in the city of Malabo suffer from a number of structural defects, including hidden construction defects and misuse of housing by residents. According to the professionals interviewed, these defects are caused by poor quality building materials such as low-grade carpentry, inappropriate elevator installations and inadequate plumbing. Photo 2 shows the current state of humidity inside and outside the dwellings.




**Photographic plate 2 : Moisture conditions in Arab Contractors buildings**

Analysis of photographic plate 2 shows the state of deterioration observed inside (a) and outside (b) the Arab Contractors housing estate. In fact, the plumbing installation process reveals water leaks and malfunctions in the building's drinking water supply and drainage system. Moisture on the outside of the building seems to be due to design problems involving poor orientation and/or poor consideration of climatic conditions. Some housing estates are illegally occupied by commercial installations. It should also be pointed out that the cités were an experiment in political will on the part of the powers that be to ensure that every household had a decent roof over its head. It so happens that, in the face of ever-increasing demographic growth, the state is unable to satisfy the strong demand for housing. It should also be pointed out that the cités were an experiment in political will to create accessible, sustainable and safe social housing. The fact is that, in the face of ever-increasing demographics that generate a demand for housing that the State is unable to satisfy, and in the face of other emergencies that the State is facing with limited resources. This has led to an increase in population density to 3106.71 hbts/km2 and an advanced level of degradation, which today is reflected in housing estates that are marginalized in terms of local community facilities and the various networks that every citizen needs.

**Photographic plate 3 : Illegal occupation of the Vigatana B housing estate**

Photographic plate 3 shows a summary of the most representative activities on the streets of Malabo's social housing estates, i.e. the occupation of sidewalks by commercial activities. Observations in the field have revealed the proliferation of informal economic activities, often carried out outside any legal control. These

activities can be detrimental to the safety and well-being of residents, creating a lack of places to entertain and socialize, as well as difficulties in accessing residents and emergency services.


**Photographic plate 4 : Presence of household waste in housing estates**

Photographic plate 4 illustrates the illegal dumping of solid waste here and there in the streets of Malabo's social housing estates. This situation is due to the financial constraints faced by the National Real Estate Management Entity of Equatorial Guinea (ENPIGE). This finding reveals a lack of environmental awareness and consciousness among residents, which translates into anti-social practices, etc. Indeed, garbage is sometimes thrown out of windows or deposited directly in the street. This behavior leads to olfactory and visual pollution, which is detrimental to people's health. Today, this requires citizens to recognize their rights and duties when it comes to the proper use of the city.

**Causes of deterioration in social housing estates in Malabo**

The results of the survey reveal that the causes of social housing deterioration are numerous and perceived by professionals as multifactorial and linked to several distinct dimensions: firstly, physical, socio-economic, institutional and environmental.

The institutional dimension is the primary cause of social housing deterioration in Malabo (35.6%). In particular, it highlights the absence of a mechanism for producing adequate social housing. This has led to neglect of existing regulations, which are decisive factors in the implementation of a social housing project. This lack of a single entity is reflected in inadequate coordination between the players involved, i.e. the Ministry of Public Works, Housing and Urban Planning (MOPVU), GE-Proyectos, the construction company, ENPIGE and others. Institutional failure not only fosters inefficient design and construction processes, but also creates an environment conducive to inappropriate building practices. This situation can also be explained by the lack of material, financial and human resources to tackle the problem head-on.

The physical dimension was considered by 30.7% of respondents to be the second most important cause of social housing deterioration in Malabo. The main factors identified in this category are defects in housing design and installation. These shortcomings often manifest themselves in the poor orientation of buildings and the use of unconventional construction methods that are unsuited to the environment, which accelerate the ageing of structures and tend to compromise their safety and comfort. On the other hand, professionals admit that these defects are often the result of incomplete planning and inadequate supervision, aggravating the structural condition of homes in the long term.

The environmental dimension is another significant cause of social housing deterioration in Malabo, accounting for 20.6% of respondents. The factors put forward point to the need to take account of climatic and geotechnical conditions specific to the various construction sites. Lack of adaptation to local environmental characteristics, such as resistance to extreme climatic conditions and/or geotechnical stability of the buildings' load-bearing structures, makes them vulnerable to deterioration. For example, the Arab contractors and Malabo II housing estates face the problem of damp rainwater, as do the drinking water supply and flushing systems. There is also the problem of soil compaction facing the abandoned Sipopo housing estate. This area, which was once used as a landfill site, has not been backfilled or compacted in any significant way. This information was verified through field observations.

Finally, only 13.1% of professionals believe that the deterioration of social housing in the city of Malabo is attributable to the socio-economic dimension. In particular, they point to inappropriate use of space by residents, often linked to illegal alterations caused by residents' negligence, and to economic constraints that limit their ability to maintain their homes in good condition. It should be pointed out that over 10% of occupants say that the socio-economic dimension is also at the root of the lack of maintenance in their homes.

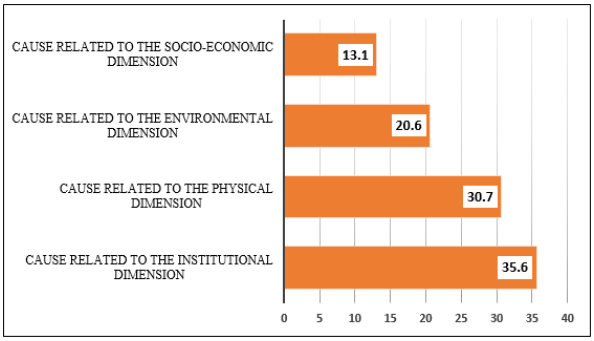



**Figure 3 : Causes of social housing deterioration in Malabo**

**Table 4 : Factors identified in the eight (8) cities studied**

| | **Cities surveyed** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Los Angeles** | **Buena Esperanza** | **San Juan** | **Sipopo** | **Vigatana (A,B,C,D)** | **Arab Contractors** | **Malabo II** | **Paraiso** |
| **Specific factors** | Ageing infrastructures | Lack of safety | Irregularity of basic services | Aggressive soil | Aggressive soil | Weak social ties between residents | Lack of community facilities | Delays in housing allocation |
| **Common factors** | Dilution of responsibilities, design faults (sealing), installation faults, Disengagement of residents, lack of public facilities, inadequate maintenance, weak social ties between residents, irregular basic services, high transport loads, pollution (proliferation of informal dumps), neglected public space | | | | | | | |

Finally, in dwellings showing visible signs of deterioration such as Malabo II and Arab Contractors, residents felt that the quality of workmanship was the main factor in the deterioration of the dwellings, with 71% (Malabo II) and 52.2% (Arab Contractors) of respondents respectively. At Buena Esperanza I, residents have expressed concerns about the comfort of their living environment within the housing estate. In addition, 58.3% of those surveyed said that safety problems were on the increase in the neighborhood. Limited access to urban facilities, basic urban services and lack of maintenance are also significant concerns.

## DISCUSSION

The housing shortage in the city of Malabo has led to the launch of several social housing production programs in residential estates. By virtue of their characteristics and location, these housing estates are made up of several dwellings with levels ranging from ground floor to 5-storey. According to H. Mezrag (2015), population growth and the changing housing needs of the population are at the root of the growing demand for housing, which is also partly a consequence of urban sprawl. Furthermore, R. Lina (2017) points out that the high price of real estate in cities has led to the development of social housing production aimed at high-income households in the face of the impoverishment of households on the urban bangs who are

suffering from natural demographic pressure and rural exodus. L. Fouchard's work (2002) has demonstrated the difficulties associated with financing, which makes it impossible to provide the social housing that is in ever-increasing demand in a city like Bobo-Dioulasso. Social housing policies are increasingly being developed in sub-Saharan African countries through various programs. This is the case in Senegal, where the difficulty of housing has forced workers' organizations to set up programs that have built many homes for destitute families (Sané, 2013). According to UN-Habitat (2020), the demographic growth forecasts for African countries will require the majority of their housing stock to house their populations by 2050.

The results of this study reveal that the causes of social housing deterioration in the city of Malabo are linked to four distinct dimensions: institutional, physical, environmental and socio-economic. On the other hand, Barbosa Leticia (2023) identifies five other main causes in her work, in addition to the previous ones. This includes damage caused by planning, design, choice of materials, execution and operation. In her work, Natalia Ponce (2023) emphasizes a trilogy of dimensions: physical, legal and social. The phenomenon of deterioration in social housing is the subject of fierce criticism, revealing shortcomings and/or failures in design, but it's up to us to sort things out and analyze the factors that have led to these transformations (H. Mezrag, 2015). Aubertin's work (2020) has shown that the dilapidated state of apartment buildings poses both physical and psychological health risks for residents.

The institutional dimension is the main cause of the deterioration of social housing in Malabo (35.6%), while 30.7% of respondents attributed the physical dimension to the deterioration of social housing. Factors arising from the physical dimension are characterized by defects in design and implementation. This is confirmed by the work of Elisabeth (2021), who shows that the deterioration of social housing estates depends not only on maintenance, but also on physical factors. In addition to maintenance, Mazaleyrat (2018) shows in his work that the deterioration of housing comes not only from physical factors but also from the use of finishing materials, which turn out to be of lower quality. This leads to premature aging of these homes, making them more habitable. A study carried out by Janati (2020) in the city of Fez reveals that the deterioration of buildings is also due to climate change, as they have a low degree of resistance to variations in temperature and humidity, which affect the soil and damage the walls, a fundamental aspect to be considered in the current state of deterioration of social housing in Malabo (see the moulds due to humidity visible on photographic plate 2).

Field results show that 58.3% of residents surveyed identified the problem of public safety in the various housing estates, limited access to basic facilities and services, and the lack of maintenance of living areas and street furniture. According to Kharmich (2023), the lack of regular maintenance is leading to signs of deterioration, with crumbling plaster and paint in buildings at the entrances to buildings and parking spaces. Adeleye's (1988) work on Abeokuta showed that strong demographic growth led to overuse of community facilities located in the vicinity of social housing. This has been proven and demonstrated both by various research studies and by data illustrating the high densities that justify the overcrowding of these social housing estates beyond what was planned by the developers. Observations in the field revealed a proliferation of informal economic activities around certain cites. According to Abeto et al. (2020), informal economic activities, which do not comply with current legal, economic and environmental principles, pose huge problems in terms of insalubrity and spatial disorder. Lastly, this situation also contributes to environmental pollution, as these facilities are often not provided for in the initial development plan for the design and implementation of social housing production programs (Dakouri et al., 2023).

## CONCLUSION

This study, carried out in the city of Malabo, identified the factors leading to the deterioration of social housing. The results showed that these housing estates, which are supposed to have an average lifespan of fifty (50) years, suddenly fell into disrepair in less than five (5) years after occupation, for the most part without the final acceptance of the developers (95%). These cottages present various structural defects linked to hidden construction defects and misuse by the occupants. The main factors in the deterioration of

social housing are institutional (35.6%), physical (30.7%) and environmental (20.6%). Lack of adaptation to local environmental characteristics such as resistance to the extreme climatic conditions of the Gulf of Guinea or geotechnical stability makes buildings vulnerable. This in-depth analysis of the state of degradation, including its causes and impacts, has demonstrated the need to guarantee the effectiveness of the actions to be taken. It would have been better if the study had taken into account the phenomenon of urban renewal, and variations in household income and size, as well as in the way people and professionals choose and use building materials. Future studies could therefore focus on identifying potential sites for the development of social housing and developing tools to assist in the rehabilitation of social housing that take into account both the aspirations of the beneficiaries and the political will to build an inclusive and sustainable city.

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