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# A model for human settlement development and management in the Free State Province, South Africa

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This paper aims to uncover the factors that influence the formulation of informal settlements upgrading programmes in the Free State Province of South Africa, from an institutional point of view. The paper subsequently yields a transformative and multi-faceted model for human settlement development and management from a combined institutional and systems theoretical perspective. The study is situated within the critical pragmatism knowledge paradigm, applying a mixed methods exploratory research design and inclined to research procedures that include the qualitative inductive content analysis method, case study method and the semi-structured survey questionnaire method. The sample selection is comprised of the non-probability sampling method, which is purposive and deliberate in nature. The data collection processes included document reviews, field observations and online surveys. The data analysis involved the abstraction and mapping of categories for the reviewed documents, descriptive analysis such as photos, written notes, and discussions with municipal officials for the field observations, and the software QuestionPro to analyze the collected data through online surveys. The research findings of the study revealed significant shortcomings related to policy design and implementation, stakeholder engagement practices, competencies of housing and human settlement practitioners, corrupt activities in the provision of adequate housing, disconnect in theory and practices during identification and definition of informal settlements, and the influence of illegal immigration on increasing housing need in South Africa. The study's findings form the foundation of the proposed model in this paper. They may assist human settlement practitioners in both the public and private sectors in developing and managing sustainable human settlements in the forthcoming decades.

## KEYWORDS

informal, upgrading, settlement, planning, urbanisation

## 1 Introduction

Over the past few years, there has been a prominent international change toward rapid urbanisation. According to the United Nations Human Settlements Programme ([Chaudhuri et al., 2017](#)), nearly 1 billion people live in slums worldwide. By 2030, almost 3 billion people occupying slums will need access to affordable housing globally. This indicates that unplanned urbanisation has influenced the rise in informal settlements in urban cities, while inequality continues to be a global problem. These challenges, influenced by growing urbanisation, remain a huge challenge for the South Africa government to effectively manage and ensure the development of sustainable human settlements in the Free State Province ([Crankshaw and Parnell, 1996](#)). The main argument of the study is that a new approach to human settlement

development and management is essential for the country and the province, to deal with increasing urbanisation.

## 2 Literature review

This section of the paper first discusses the notion of urbanisation and how it influences immigration and migration, internationally and in South Africa. Second, the new idea of sustainable human settlements is discussed briefly in terms of their history and characteristics.

### 2.1 Urbanisation

The manifestation of globalisation continues to influence spatial dynamics in the revolution and legal parameters of urban systems. At the same time, they feature in the growth of international monetary flow, ideas, and cultures (Dintsi, 2022). Urbanisation can, therefore, be defined as the advancement of cities primarily due to economic and technological enhancements, causing the mass movement of migrants from rural areas to urban areas (Duneier et al., 1999). Although urbanisation has continued to grow over the past decade in regions of the global West such as Europe, this has also recently become widespread in the global South, especially in African and Asian nations (Dintsi, 2022; Kennedy and Zerah, 2008). Scholars have, however, contested that it has been difficult to define the actual rate at which human populations are increasing in global cities. Extremely high fertility rates and minimally updated census information further complicate measuring urbanisation (Marais and Ntema, 2013). In South Africa, as urban populations grow, informal settlements mushroom because the government has been unable to provide adequate housing for poor people experiencing poverty, although housing supply should arguably no longer be the key mandate for the state (Maxwell, 2012).

### 2.2 Sustainable human settlements

There has been a recent global paradigm shift from 'housing' to 'sustainable human settlements', and the Breaking New Ground strategy states that this shift has presented an essential change in policy (Ntema et al., 2018). While the South African housing policy is currently being transformed into a sustainable human settlements policy, this process has encountered important implications for the upgrading informal settlements. Usually implemented in local contexts, area-based development has been the most fundamental implication in upgrading. But the extent of the shift in upgrading within urban areas in the Free State remains unclear (Osman et al., 2016). The sustainable human settlements plan emphasises the prominence of spatial transformation to realize sustainability where people reside. The concept of sustainability is therefore crucial in the development of international human settlements, as promoted through the Millennium Development Goals. Both the BNG and the MDGs endorse similar ideas to ensure the creation of sustainable living environments (Ntema et al., 2018; Parnell et al., 2009).

## 3 Materials and methods

The study investigated the causes of the rising influx of legal and illegal immigrants, and migration, assessed the limitations of non-available formal housing and the lack of alternative housing for inhabitants, examined the challenges of the inadequate results of upgrading and the blossoming number of informal settlements, analyzed the government's plan to overcome the high rate of poverty and high unemployment rate in informal settlements, and proffered a transformative and multi-faceted management model for informal settlements development intervention by the government. The study applied a mixed methods exploratory research design. This research design has allowed for the implementation of research procedures including the qualitative inductive content analysis method, the case study method, and the semi-structured survey questionnaire method (Peberdy, 2013). The data collection methods used comprised of both primary and secondary data (Silvan, 2015). Primary data involved online surveys of deliberately selected research participants and experts in human settlements and upgrading work. Primary data also involved field observations of selected small, medium, and large local municipalities in the Free State. Secondary data comprised an inductive analysis of written sources, containing upgrading policies and plans. The reason for collecting both qualitative and quantitative data is to understand and explain how the formulated upgrading programmes led to their implementation.

### 3.1 Sampling method, size, and response rate

Snowball sampling is non-probabilistic and comprises of research participants who recruit additional potential participants for a study. Snowball sampling is essentially used where it is difficult for the researcher to find participants (Smith, 2014; UN-Habitat, 2018; Van Mol, 2017). This paper has therefore applied the non-probability sampling method, which is purposive, as the respondents, before conducting the online surveys, were intentionally selected as the predetermined population size of 54 units. This means that 54 respondents were expected to respond to the online survey on the QuestionPro platform. The respondents were deliberately chosen as the most appropriate research participants to answer the questions, because they all have a critical role developing and managing sustainable human settlements.

Through the online survey, 54 respondents were targeted during the study, 39 initiated the completion of the questionnaire, and 34 completed it, equating to a response rate of 62.9%. Survey response rates for modern built environment-related studies are generally low in general, and usually below 10% (Peberdy, 2013). Therefore, the response was notable, and given the diverse profile of the participants that responded, the results can be considered representative and reliable.

### 3.2 Data collection

A structured web-based online survey, QuestionPro, was distributed as an accessible link to the respondents from different institutions, including government departments, private companies, and

non-governmental organisations. The first section of the survey drew demographic information about the respondents such as age, ethnicity or race, and gender. The second section elicited socio-economic backgrounds, including the highest educational level, work level, position and main responsibility, years of work experience, and the period occupying the current position. The third section set questions on legal immigration, and migration, and how to respond to them. The fourth section questioned the participants on the challenges of providing formal housing, and recommended housing typologies for urban informal dwellers. The fifth section drew information on the problems facing informal settlements, improved ways to respond to informal settlements, the government's plan to address high poverty and job unemployment rates, and possible policy and plan interventions that the government could consider for informal settlements. The questionnaire surveys had 20 questions with sections ranging from A to E. Each section had questions ranging from A to D, or A to E, and were open-ended to allow the respondents to elaborate on their answers. Furthermore, the study employed a content analysis of five selected upgrading programmes, through the qualitative inductive content analysis method. The method involved two main phases, including the preparation phase and the organisation phase. The organisation phase importantly included processes of open coding, coding sheets, and grouping and creating families. Themes emerged from the content evaluations and were presented in abstracted and mapped main categories, generic categories, and subcategories for each policy and plan analysed. Further discussions were held on the policies and plans in the study. Lastly, field observations were conducted on three deliberately selected informal settlements in the Free State. These informal areas included Kgotsong Informal Settlement in Bloemfontein, Mooidraai Informal Settlement in Sasolburg, and Winnie Mandela Informal Settlement in Parys. Informal discussions with the municipal officials and ward councillors took place on-site. The issues discussed included the history of each settlement, the number of households, the number of illegal immigrants, land ownership, the status of formalisation, funding, infrastructure services including interim, internal, and bulk, and risks and mitigating actions taken by the municipality. The study was administered to the study sample, which included a request to participate in the research study letter, stating the purpose of the study, informed consent declaration, and the guarantee that the information provided by the respondents would be treated confidentially. The respondents were not forced to participate in the research study, and therefore, had the option of withdrawing when uncomfortable.

### 3.3 Data analysis

During the study, data analysis was performed using various data processing tools and software such as QuestionPro, which enabled the treatment and sorting of the gathered data. First, primary data collected using online surveys was assessed and presented through a narrative discussion. Frequency and percentage were generated and reported to analyze the respondents' demographic profile. QuestionPro allowed for the creation of thematic sections of the key topics from A to E, as stated above. Second, content analysis was conducted on five main upgrading programmes in the Free State Province of South Africa. The analysis of the various documents has been possible through applying the preparation and organisation phases of the relevant method. Finally, primary data obtained through field observations have been presented

of a descriptive analysis of the captured photos on-site, significant data collected through written notes, and information acquired through informal discussions with the local municipal officials.

### 3.4 Limitations

The study only included informal settlements in the Free State Province. The study concentrated on the professionals and stakeholders responsible for upgrading work within the human settlements environment and other relevant sectors with an important role in upgrading programmes.

### 3.5 Ethics approval statement

The authors would like to thank the research participants for granting us access to interview their workers, and the respondents for consenting to participate in this study. Furthermore, the authors thank Nelson Mandela University for issuing the ethical clearance to conduct this research. There is no potential conflict of interest to report on relative to this study.

## 4 Results and discussion

This section presents the study's key findings, including the study participants' demographic profile, results of the case study, and the results of the semi-structured survey questionnaire study.

### 4.1 Demographic profile of the study participants

All 34 responded to the ethnicity and race question. Seventy-three percent of the respondents were African, 15% white, 15% coloured, and 6% Indian. Thirty-two participants responded to the gender question, with 51% male and 42% female, while 3% preferred not to respond. Of the 34 participants, 3% had matric, 12% had certificates, 18% had diplomas, 27% had degrees, 15% had an honours degree, and 27% had a master's degree and higher. Of the eight respondents that specified their qualifications, 63% had obtained master's degrees in urban and regional planning. Urban planning, housing and human settlement development, and construction management are the key educational backgrounds aligned with the core functions of the human settlements sector. Furthermore, 9% of the participants possessed one to three years' work experience; 42% had four to six years' experience; 12% had seven to ten years' experience; and 39% had 11 years and more experience. Of the 13 respondents with 11 years' experience and above, the average work experience is 29 years, meaning that most participants were knowledgeable in the sector and field.

### 4.2 Qualitative inductive content analysis study

Through applying the qualitative inductive content analysis method, a researcher must ensure that the main category always

derives from the chosen unit of analysis, as previously highlighted in this paper. The findings of the reviewed policies and plans revealed that the main category has emerged as the most significant theme of the analysed documents. The main category has therefore interrogated the formulation process of the upgrading programmes as one key question, which is the unit of analysis. General categories and subcategories that are directly linked to the main category were further revealed as subthemes. The findings included categories, starting with the main category, generic categories, and lastly subcategories. Defensible inferences have been developed from all the main and generic categories, as conclusions for each programme. Different categories and themes of the analysed informal settlement upgrading programmes were created. The main category as the unit of analysis for all the programmes recognises the formulation of the upgrading policies and plans. The generic categories for the analysed documents include institutional challenges, approaches and targets, policy alignment, and institutional support.

The subcategories created for the analysis of the Free State Provincial Informal Settlements Upgrading Strategy of 2019 comprised the lack of relevant institutional capacity leading to inadequate upgrading; illegal land invasions as a challenge for upgrading in municipalities, caused by illegal immigration and migration; the need to revise the upgrading approach in the Free State for improved delivery, because the number of informal settlements is mushrooming; the need to promote more integrated and sustainable human settlements; the National Housing Code of 2009 as a guiding document for the strategy; the Outcome 8 development priorities as part of government's plan for upgrading; land ownership by the government, and emphasis on the importance of regular forums for stakeholders involved in upgrading work, to develop a heterogeneous approach to upgrading.

The subcategories created for the National Upgrading Support Programme include the limited information provided to informal dwellers about upgrading projects by municipalities; the lack of community consultations with end beneficiaries, that necessitates the need for improved stakeholder engagement through a multi-branched approach; the need to list, detail and map all informal settlements in the province, to assess formal and alternative housing need for inhabitants; the need for a structured agreement between the municipality and community; a suggestion that the UISP requires a new way of thinking, that is transformative and multi-faceted in nature; the intensions of the UISP to incrementally upgrade; the drive to improve informal settlements to persist, and the need to conduct joint inspections of services to examine the challenges faced by informal dwellers.

The subcategories created for the UISP indicate the fact that the UISP does not apply to unidentified projects for upgrading and backyard dwellings, and the proposed model will not consider backyard dwellings; the need to facilitate structured in-situ upgrading would be catered for by the proposed new model; the need for people to relocate voluntarily and cooperatively to curb any illegal immigration and migration; South Africa adhering to the UN-Habitat programme; the call for municipalities to be assisted with grants in order to carry out upgrading, and the responsibility of provincial departments for implementing the UISP, from an institutional perspective.

The categories created for the analysed Metsimaholo Local Municipality Resettlement Plan comprise the detail that the UISP does

not cater for unrecognised projects for upgrading and informal dwellers, and the new model will not cater for backyard dwellers; the expectation that the plan must provide recommendations for upgrading, in which the proposed model does present possible and practical strategies; the plan provides development cost scenarios; the plan analyses a relevant housing policy and legislative framework dealing with upgrading; the requirement for the municipality to monitor the relocation phase, and the need for stakeholders to play different roles in upgrading projects.

The categories created for the analysed Ngwathe Local Municipality Resettlement Plan contain the point that the UISP does not apply to unidentified projects for upgrading and informal dwellers, and the new model will not cater for backyard dwellers; the expectation that the plan must provide recommendations for upgrading, in which the developed model does propose new ways of addressing informal settlements; the plan provides development costs scenarios; the plan analyses a relevant housing policy and legislative framework on upgrading; the requirement for the municipality to monitor the relocation phase, and the need for stakeholders to play various important roles in upgrading projects.

### 4.3 Case study

Field observations through direct observations were undertaken during the study. No informal interviews were conducted with the residents of the identified informal settlements. As the areas were openly observed in the municipalities, they included the Kgotsong informal settlement in Mangaung Metropolitan Municipality, the Mooidraai Informal Settlement in Metsimaholo, and the Winnie Mandela Informal Settlement in Ngwathe. The observed settlements were all visited on-site by the researchers, municipal officials, and the ward councillors of the areas. Even though there were no planned interviews, brief discussions regarding the background aspects of the settlements involved the history of each settlement, land ownership, number of households, status of formalisation, infrastructure services, including interim, internal, and bulk funding, and the risks associated with the settlement and mitigating actions by the municipality.

Kgotsong informal settlement within the Mangaung Metro was formed more than 15 years ago as there was an influx of people moving into the metro seeking employment opportunities in Bloemfontein. Kgotsong currently has more than 7,500 households in the area and the number is increasing daily. Mangaung is in the process of subdividing gap housing stands on the formalised area of Caleb Motsabi, into single residential land parcels, and a new township establishment of the adjacent farm, Klipfontein, as observed, to cater for new settlers.

The observed Mooidraai Informal Settlement in Metsimaholo was established in 2007, initially by people migrating from Gauteng and those living in Zamdela, which is the largest township in the Metsimaholo Local Municipality. Many of the informal dwellers work at the Sasol industrial city plant in Sasolburg. At present there is a rising amount of 2,980 households living in Mooidraai. Metsimaholo and the Free State Department of Human Settlements were working on a plan to upgrade the area in-situ.

The Winnie Mandela informal settlement within Ngwathe was established eight years ago, mainly by people living in Parys who could not access formalised land parcels. The officials claimed that most of



the informal dwellers in Winnie Mandela are demanding stands more than housing units. The settlement has 370 households, and the province is helping the municipality to relocate the dwellers, as the land is unsuitable for human habitation as observed.

#### 4.4 Semi-structured survey questionnaire study

Twenty-seven percent of the participants were of the view that legal and illegal immigration and migration are caused by underprivileged standards of living where people reside, causing them to relocate to other countries, cities and towns that have improved economic prospects, including jobs. As a response to immigration and migration, 11 respondents proposed that South Africa intensified border security, especially between the neighbouring countries such as Botswana, Lesotho, Mozambique, and Zimbabwe. Most illegal and legal immigrants emerge from these nations and when they cannot afford rental housing in South Africa, they illegally invade land and develop informal settlements. Additionally, 45% of the respondents recommend that the government prioritise increased economic opportunities for the poor.

Thirty-three percent of the respondents of the surveyed 33 participants maintained that the fast-growing urbanisation causes the lack of provision of formal state housing for the poor. Eighteen percent of the respondents believed that the government did not have adequate funds. Twenty-one percent of the respondents stated that housing delivery systems were ineffective. Fifty-four respondents stated that there is a lack of suitable urban land. However, 21% of the respondents suggested that temporary housing be prioritised. A total of 18% of the respondents strongly maintained that the South African government should not deliver low-income housing for the poor.

Fifteen percent of the respondents argued that the increase in informal settlements is caused by a lack of policy direction. Thirty percent of the respondents stated that uncontrolled immigration and migration continue to influence the growth of informal settlements. One respondent outlined that the government does not have a concrete plan to implement its upgrading policies.

Twenty-seven respondents suggested that experts could reshape upgrading policy. Six percent of the respondents stated that consumer education could be improved. Twenty-seven percent of the respondents were of the view that human settlement practitioners could lead to the socio-economic development agenda. Twelve percent of the twenty-seven respondents stated that the eradication of informal settlements was the solution. Thirty-nine percent of the respondents suggested enhanced in-situ upgrading. Nine percent of the respondents maintained that improved relocation is key. Twenty-seven percent of the respondents suggested increased provision of basic services. One respondent suggested that there should be a permanent paradigm shift from 'upgrading' to the 'provision of serviced sites'. Table 1 presents the target population of this study.

### 5 Proposed human settlement development and management model

As an initial step to initiate effective and proactive strategies for informal settlements in the Free State, from an institutional viewpoint, the formulated upgrading programmes must be reviewed and redesigned to be well-timed with implementation plans. This is important considering that municipalities guided by the NUSP and the UISP, as discussed in the literature view, are encouraged to constantly review human settlement policy. The human settlement development model should foster a closer relationship to manage immigration and migration with other

TABLE 1 Target population.

Study participants	Total number selected	Targeted response (%)
<b>Participants of semi-structured online surveys</b>		
6 x National Department of Human Settlements	1 x NDHS = 100% Representation of National Department	54 x study participants = 100% Representation of selected number
2 x National Housing Development Agency	1 x National HDA = 100% Representation of National Agency	
4 x Free State Department of Human Settlements	1 x FSHS = 100% Representation of Provincial Department	
2 x Free State Housing Development Agency	1 x Free State HDA = 100% Representation of Provincial Agency	
4 x Mangaung Metropolitan Municipality	1 x MMM = 100% Representation of Metropolis	
4 x Metsimaholo Local Municipality (Medium)	1 x MLM = 68% Representation of Medium Local Municipalities	
4 x Ngwathe Local Municipality (Small)	1 x NLM = 32% Representation of Small Local Municipalities	
2 x YB Mashalaba and Associates Consultants (Free State)	1 x YB MAC = 13% of Provincial Service Providers	
1 x Dipabala Consulting Engineers (MMM)	1 x DCE = 3% of Provincial Contractors	
1 x SATCON Developments (Metsimaholo)	1 x SATCON = 3% of Provincial Contractors	
1 x Dipabala Solutions (Metsimaholo)	1 x DS = 3% of Provincial Contractors	

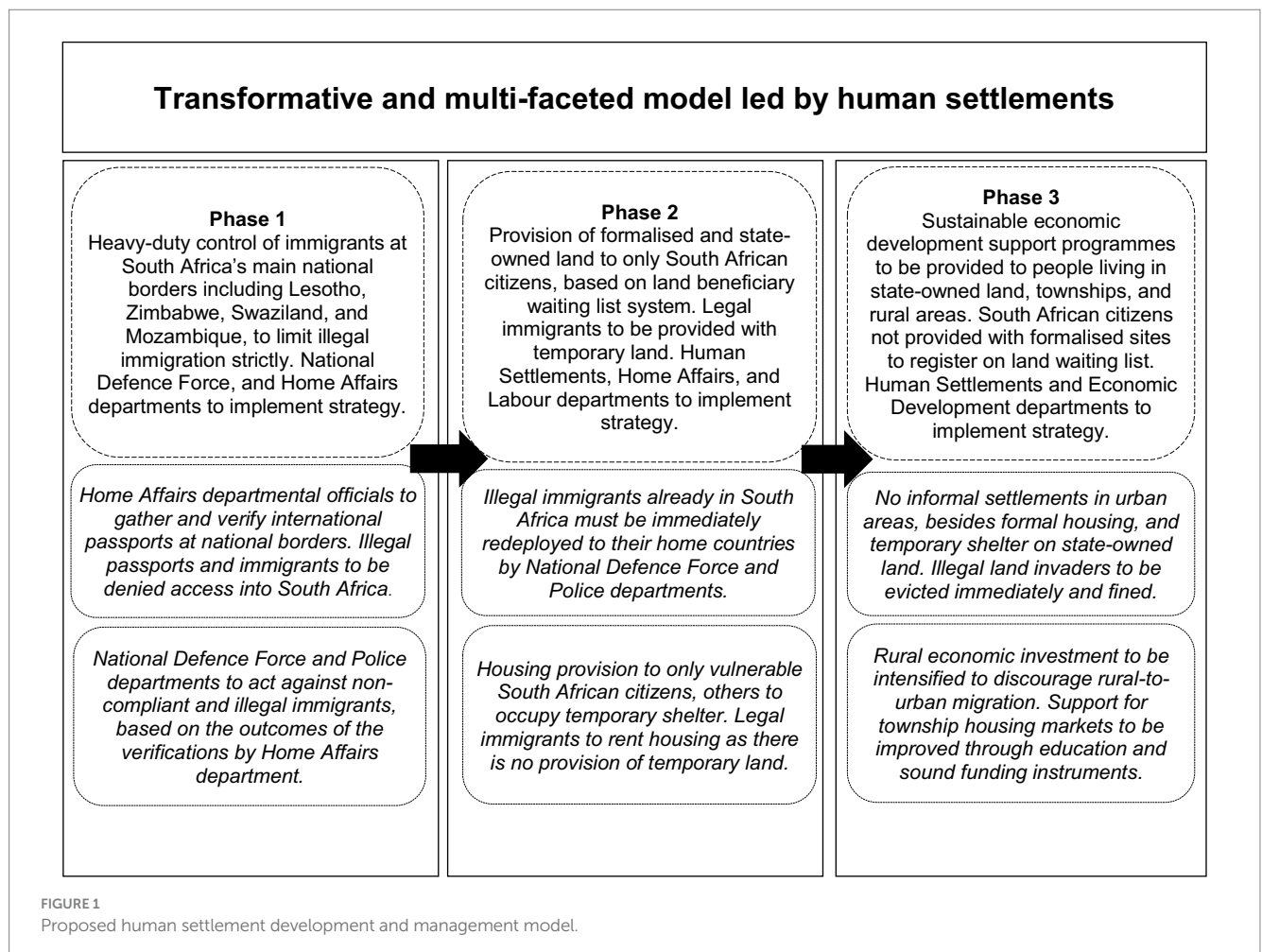
sectoral departments, especially the South African National Defence Force, the South African Police Service, and the Home Affairs and Labour departments. However, literature has not widely covered the relationship between law enforcement institutions and human settlements, particularly on the control of illegal migration resulting in the escalation of informal settlements in South Africa. The movement of people is one of the main causes of the rising number of informal settlements, particularly by illegal immigrants moving into the country and people relocating from rural areas to urban areas. The above-mentioned departments must be vigorous in the implementation of pre-emptive and practical approaches. Illegal immigrants should not be permitted into South Africa and only a limited number of them must be allowed to relocate into the country, depending on the number of people government is able to house. Migrants moving from rural areas to urban areas should be able to justify their relocation, by providing written evidence of employment and where they will be living during this period. Controlled immigration and migration are necessary because infrastructure in settlements continues to be under pressure because of the high populations in cities. Literature is unclear how the South African government will manage human settlements in future considering the uncontrolled immigration and migration. This is because government has been responsive rather than being proactive on unplanned human

settlements growth such as informal settlements. **Figure 1** presents a proposed model for developing and managing human settlements that are purely reconstructive and multi-branched.

## 6 Recommendations

The following are the recommended practical strategies and possible interventions arising from the study:

- Implement an integrated approach for policy formulation: Upgrading programmes should reflect horizontal sectoral integration, as policies and implementation plans must be developed between various stakeholders, including sector departments, the private sector, and non-governmental organisations focusing on upgrading work. Vertical inter-government integration in policymaking could also be considered between the three spheres of government. Finally, horizontal and vertical integrations must be combined to ensure an operational and democratic process in policy formulation within the human settlements sector;
- Enhance communication technology education: Government officials in the sector must use alternative communication systems. Communication should not only be limited to telephones and emails. Other self-stimulating methods can



be considered, including one-on-one video calling and group conference calls, to make communication more interesting;

- Government to employ upgrading experts: A comprehensive internal skills audit must be performed in the Department of Human Settlements, especially for officials responsible for upgrading work in this context. A practical transference of non-specialising officials who are responsible for upgrading, should be undertaken and they could be shifted to other functions within the department. Most importantly, qualified informal settlement upgrading specialists must be the priority for upgrading functions;
- Manifest a paradigm shift in upgrading policy: The DHS must be clear in its policy that through upgrading, the key mandate is to create integrated and sustainable human settlements and improved quality of life. Policy should not reflect housing as the most significant factor; however, housing should be an integral part of human settlements. Upgrading programmes should emphasise the need for inclusive settlements that address the socio-economic challenges facing the poor, including lack of water and jobs;
- Restructure and capacitate municipalities: Municipalities need to be enhanced with skilled experts for upgrading work. These key professionals include human settlement practitioners, town planners and construction managers. This should assist municipalities to achieve their key performance areas for upgrading as set out by the DHS, and
- Control illegal immigration and discourage migration: The mass movement of illegal immigrants into South Africa must be restricted. The relevant sectoral departments, including Human Settlements, Home Affairs, Labour, the South African National Defence Force, and the South African Police Service should formulate a comprehensive strategy to manage immigration in a robust manner.

## 7 Conclusion

First, immigration and migration continue to influence growth in global cities, and resulting in informal settlements mushrooming in the Free State Province, while existing upgrading policies and plans remain misaligned. Second, communication between the key stakeholders responsible for the upgrading of informal settlements in the province has been poor, as there is limited information sharing among the role players, which is important to advise decision-making in upgrading work. Third, it is apparent that the relevant organisations addressing informal settlements through upgrading, including the DHS, have in the past inadequately valued educated and qualified practitioners who possessed the relevant education and skills to effectively address the challenges threatening informal settlements. Fourth, housing provision failure for all has been the state's downfall, as the set targets for upgrading by the provincial government have not been achieved to date. There continues to be a huge housing backlog in the Free State, with limited access to suitable and well-located land. Fifth, the failure of municipal officials to identify and define informal settlements means that some of them did not have adequate knowledge about informal settlements and the upgrading mandate.

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Lastly, it is evident that illegal immigration is influencing the increase of informal settlements in the province and must be controlled.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving human participants were reviewed and approved by the Nelson Mandela University. The patients/participants provided their written informed consent to participate in this study.

## Author contributions

SD: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. SM: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. JS: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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