

## PAPER 3

# APPROACHES TO INFORMAL SETTLEMENTS UPGRADING AND AFFORDABLE HOUSING DEVELOPMENT: HOW SOUTH AFRICA COMPARES TO BRAZIL AND INDIA

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## 1. ABSTRACT

Informal settlements (IS) are a global urban phenomenon in developing countries, of the Global South. In South Africa, there are IS around all major cities and towns. These settlements are often characterised by inadequate housing, recreational spaces, and health and education facilities; poor access to electricity, water, and sanitation services; uncontrolled and unhealthy population densities; and ineffective administration by municipalities. The 2004 declaration of the Comprehensive Housing Plan for the Development of Integrated Sustainable Human Settlements made informal settlements upgrading (ISU) and developing affordable housing the cornerstone of South Africa's approach to ensuring dignified housing for all. Twenty years later, South Africa has over 4,300 IS, home to more than 2,000,000 households mostly living in dire conditions.

This study assessed the effectiveness of the interventions adopted for ISU and developing affordable housing in South Africa, compared to strategies used in Brazil and India. The study used mixed methods. A systematic literature review was used to identify ISU and affordable housing development strategies adopted in Brazil and India, unearth major recurring themes in these two contexts, and determine the effectiveness of the adopted strategies. Semi-structured interviews with professionals and a transect visit to Mahlakong informal settlement, in Lephalale, were conducted to make sense of the South African approach. The interviews were designed around the major recurring themes, identified from the literature, to understand better how South African institutions approach ISU and the effectiveness of their approaches.

In-situ ISU was found to be the best way to deliver dignified housing affordably in all three countries although implementation strategies vary. Several aspects of in-situ ISU interventions practiced in South Africa are in line with international best practices. These include incremental tenure arrangements, enabling IS residents to gain recognition that allows them to interact with formal institutions while awaiting permanent tenure arrangements, and the incremental upgrading of basic infrastructure and services. Still, there are several areas of potential improvement. For starters, South Africa could recognise illegally occupied multistorey structures as IS, so interventions targeting these types of settlements can be funded from national ISU grants, as has been successfully done in Brazil. Currently, plans for addressing these types of settlements are developed at the municipal level, and therefore cannot be financed from national ISU grants. South Africa could also better incentivise private sector involvement in ISU and affordable housing development, as India does, to increase the funding available for improving the country's housing stock.

## 2. INTRODUCTION

Informal settlements and slums, though now a globally occurring urban phenomenon, are more prevalent in cities and towns in developing countries of the Global South. The United Nations (UN) defines IS as human settlements where residents lack tenure security, basic services, and infrastructure and are often comprised of dwelling structures that do not conform to local building regulations (UN-Habitat, Habitat III Issue Paper on Informal Settlements, 2015). In 2015, the United Nations adopted 17 Sustainable Development Goals, with Goal 11 aimed at "making cities and human settlements inclusive, safe, resilient and sustainable" (UN, Sustainable Development Goals, 2015). To date, things have either stagnated or regressed from the baseline in so far as access to safe and affordable housing and basic services are concerned, i.e., the global target will likely not be achieved by 2030 (UN, Progress Chart-SGD Indicators, 2023).

South Africa has long been plagued by IS jointly fuelled by people migrating from rural areas to major urban centres, in search of better socio-economic conditions, as well as immigrants fleeing wars, political instability, and harsh economic realities, from other countries. In 2004, the Department of Human Settlements introduced the Comprehensive Housing Plan for the Development of Integrated Sustainable Human Settlements, also known as "Breaking New Ground", which promotes the strategy of upgrading IS over relocating communities (DHS, Breaking New Ground, 2004). Despite the BNG and other policies and interventions, the country has seen the continued development of new IS, and there has not been much improvement in many long-established IS (Huchzermeyer, et al., 2014). Furthermore, with the continued growth of previously existing IS, and the minimal maintenance of the existing infrastructure already provided, these interventions have not resulted in any long-term upgrading of IS (Bradlow, et al., 2011), partly because of the complexity of integrating multiple facets of development, requiring coordination of specialist input from many disciplines, when upgrading IS.

This study investigated policies and strategies that are applied to address IS and affordable housing development in two countries from the Global South, Brazil and India but are not currently being practiced in South Africa. The study did not only focus on legislation and policies but also explored strategies that the Brazilian and Indian governments have employed to fund ISU and affordable housing development. The study also sought to develop a deeper understanding of how South Africa currently deals with IS, to make recommendations on how the country might adopt some of the strategies currently used in Brazil and India, modified as necessary, to better address IS in the future. Brazil and India were selected, rather than fellow African countries, to enable the examination of issues from various parts of the world while keeping the focus on the Global South. Both countries are also generally seen as South Africa's economic peers.

### 3. SYSTEMATIC LITERATURE REVIEW

#### 3.1. International policy recommendations

The World Bank (WB) has two central convictions when it comes to ISU. One, due to potential disruptions to economic and social networks, that IS communities might face when relocated, the WB considers it better to upgrade IS in situ than to relocate them. Two, the WB believes that governments should create an enabling environment for households to incrementally develop their housing, by providing essential infrastructure (World Bank, An Evidence Informed Response to Slum Settlements: A Learning Note, 2011). In a report that probed ways to assess housing affordability, Litman (2022) concluded that a low-cost house is not affordable if its location results in higher transportation costs for access to work and services. The report then identified multiple strategies for increasing a city's affordable housing stock. These strategies were then categorised as follows: **Ineffective and sometimes harmful strategies**, exemplified by urban blight and urban fringe housing. The former occurs when older buildings in undesirable Neighbourhoods are used for low-cost housing. While the housing units may be affordable, utility and maintenance costs are often high. The latter occurs when affordable housing units are constructed on urban peripheries, as was standard in apartheid South Africa. This limits Neighbourhood integration, increases the cost of accessing economic opportunities and increases infrastructure development fees to connect households in the fringe to infrastructure and services. **Effective yet often costly strategies**, exemplified by using volunteer construction to build social housing. This is often unsuitable for modern urban buildings and may produce defective and inferior housing, with reduced durability of housing and low resale value. **Most economic and beneficial strategies**, exemplified by increasing permissible densities and building heights, which may result in increased infill development and reduces barriers to the development of affordable accessible housing by identifying and reducing policies and practices that add costs, delays, and uncertainty to the development of affordable housing (Litman, 2022).

#### 3.2. South African policy and practices on ISU and affordable housing development

Since the dawn of South Africa's democracy, the government's approach to IS and affordable housing development has been shaped by the Constitution of the Republic of South Africa (1996) and the National Housing Act (1997). Section 26 of the Constitution of the Republic of South Africa (1996) states that "Everyone has the right to have access to adequate housing", and that "The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right". The same Section also protects people from unlawful evictions, through asserting that "No one may be evicted from their home, or have their home demolished, without an order of court made after considering all the relevant circumstances." The National Housing Act (1997) was established to give effect to constitutional rights, and it specifically mandates government to prioritise the needs of the poor when implementing housing development, while making provision for various housing and tenure options.

When it comes to the issue of addressing IS, the most far-reaching policy is the Breaking New Ground (BNG) policy. The BNG policy aims to eradicate IS and create "sustainable settlements", which are "well-managed entities in which economic growth and social development are in balance with the carrying capacity of the natural systems on which they depend for their existence and result in sustainable development, wealth creation, poverty alleviation, and equity". Recognising the many challenges to the

development of adequate housing, the BNG proposes several strategies for developing affordable housing, including supporting the broader property market, developing sustainable human settlements, and incremental upgrading of IS. The BNG also encourages the government to adapt institutional arrangements and build the capacity of municipalities to promote its implementation (DHS, Breaking New Ground, 2004).

##### 3.2.1 Policy interpretation and implementation

In a study of regenerative development, participants from a low-income community were taught to convert their homes into earthships utilising regenerative construction techniques, and some went on to convert their dwellings into earthships following training. Participants reported that indoor temperature regulation was much better in their earthship houses. Participants also noted a reduction in several risks (e.g., fire) and nuisances (e.g., excessive noise during thunderstorms), associated with dwellings built with corrugated iron, due to the use of clay to cover earthship houses. Participants also reported changes in how they viewed waste materials, following participation in the regenerative development study (Venter, et al., 2019). Finally, participants also reported an increase in social cohesion in their communities because of the project (Venter, et al., 2019). Despite all these and other benefits, Venter et al., (2019) found that regenerative development techniques, while similar to indigenous construction techniques adopted in South Africa, have not been adopted and utilised for ISU, despite the BNG promoting the use of alternative construction techniques. Instead, implementation of the BNG remained primarily technical, without much focus on social empowerment or user enjoyment.

In a comparative study that assessed the implementation of the BNG in the City of Cape Town (CoCT) and the City of Johannesburg (CoJ), Klug and Vawda (2009) found only CoCT, which relied on private-public partnerships to implement the livelihoods approach of the BNG, to have executed the BNG with success (Klug & Vawda, 2009). CoJ focused mainly on completing large "greenfields" projects commissioned before the BNG era (Klug and Vawda, 2009). A similar finding was reported by Huchzermeyer et al., (2014), who reported that the greenfields delivery of new housing through the Reconstruction and Development Programme (RDP) was still the most popular approach to addressing IS in Johannesburg (Huchzermeyer, et al., 2014).

##### 3.2.2 Funding strategies for South Africa's approach to addressing IS

The BNG encourages the state to enhance the participation of private entities in the development of affordable housing (DHS, Breaking New Ground, 2004). To date, only state funds are used by the government to fund IS and affordable housing development interventions in South Africa. The most popular affordable housing development strategy, RDP, uses state funds to construct affordable housing. The state also offers subsidies to households and social housing, all of which are funded through state taxes (DHS, Finance Linked Individual Subsidy Projects, 2021). CoJ however is attempting to recruit private developers into the affordable housing development space, through an inclusionary housing policy that obligates all private developers constructing residential housing of 10 units or more to ensure that at least 20% of the units in development are low-income housing units (CoJ, Inclusionary Housing Policy Pamphlet, 2020). It is concerning that, 16 years into the BNG era, this literature review could only identify one policy, in one municipality, that encourages the participation of private developers in affordable housing development. More needs to be done to identify additional mechanisms for funding affordable housing development and ISU in South Africa.

### 3.3. Brazilian policy and practices on ISU and affordable housing development

In Brazil, the national government develops general legislation and policy, while state governments enhance the legislation and take responsibility for its implementation. Article 6 of the Constitution of the Federative Republic of Brazil (1988), establishes the social elements of citizenship, including but not limited to the social rights to housing, social security, and assistance to the destitute. Through the “social function of property” principle, Brazil’s Constitution (1988) obligates private property owners to utilise their property for the benefit of society as a whole (Denaldi & Cardoso, 2021). This principle has been instrumental in helping IS residents obtain tenure security in any land in which their housing is located, upon proving that they have settled on the land for at least 5 years with no complaints from the original owners of the land (Denaldi & Cardoso, 2021).

To understand Brazil’s approach to ISU, this review looked at the Growth Acceleration Programme (PAC), launched by the federal government in 2007, and Sao Paulo’s 2001 municipal master plan. The PAC programme required state governments and municipalities to submit business plans describing the projects they planned to undertake to the federal government. The ISU projects were designed and implemented under the principle of “Integrated Upgrading” which required municipal services and infrastructure, housing development, socio-economic, and environmental factors to be included in the scope of projects. Funds were released directly to the implementing local authorities, and PAC made allowance for various types of IS to be upgraded (Denaldi & Cardoso, 2021). When investigating project outcomes, Cardoso & Denaldi (2021) found that 33% of the projects implemented through the PAC programme had been completed, 43% had adequate progress, 19% of projects required intervention, and 5% of the projects were in a concerning status.

In 2001, the new administration in São Paulo redrafted the municipal master plan, making urban development and housing for lower-income and vulnerable groups a priority. A key feature of Sao Paulo’s 2001 plan was that it targeted the poor in IS as well as all low-income households earning a maximum of sixteen times the minimum wage. The types of settlements targeted were squatter settlements with illegal occupants, illegal land subdivisions, public housing estates constructed by the city, settlements surrounding hydropower generation reservoirs, and illegally occupied inner city buildings. The São Paulo municipality identified tenure legalisation as an important feature for enabling IS residents to access funding for self-sponsored improvement of their housing structures, and they began to reprioritise the municipal land usage plan to favour low-cost housing. Residents who settled on land that was not reserved for the construction of services were given tenure security through the title of a 250m<sup>2</sup> land plot by the city. The municipality also developed three alternatives for low-cost housing development: in-situ renovations, self-funded or municipal subsidised self-contracted construction, and rent-to-buy settlement in low-cost housing high-rise buildings (Budds, et al., 2005).

#### 3.3.1 Policy interpretation and implementation

de Camargo Cavalheiro & Abiko (2015) reported on the relocation of residents from the Bairros-Cota favela. The favela developed in a protected area of the Atlantic Forest, due to the abundance of economic opportunities nearby. The relocation project, funded through the PAC programme, aimed to relocate some of the families in the favela, to the Reubens Lara Condominium Complex, in Cubatão. The complex was built in a central neighbourhood and offered various accommodation types. The complex buildings included solar panels for water heating. Social support for resettled residents was also offered for two years. The study focused on two

areas when assessing changes in the quality of life of the relocated residents: condominium accommodation and social work. Almost half of respondents indicated that they did not want to leave the favela, yet most (97%) said the relocation had positively impacted their quality of life. The availability of job opportunities near the complex and the infrastructure improvements were amongst things that residents claimed made their lives better, while maintenance fees associated with condominium living, the smaller size of housing units, separation from relatives, lack of private leisure spaces, and housing structure defects were listed as negatives of the relocation. Despite the negatives, most residents rated their new housing units positively. When it comes to social work, most residents believed that it did not affect their livelihoods. This was due to the focus on training community leaders for condominium management, so only five percent of the respondents indicated that social work had contributed positively to their livelihoods (de Camargo Cavalheiro & Abiko, 2015).

#### 3.3.2 Funding strategies for Brazil’s approach to addressing IS

Brazil relies on a rich mix of state, private, and other sources of funding to pay for ISU and affordable housing development projects. For example, in 1999, the country took a loan from the Inter-American Development Bank (IDB) to develop a programme for ISU (Cardoso & Denaldi, 2019). The PAC programme was also funded through loans from the IDB, the World Bank, and federal taxes (Denaldi & Cardoso, 2021). Informal settlements upgrading projects undertaken through state agencies, such as the National Housing Fund (FNHIS), are mostly funded through federal taxes (de Camargo Cavalheiro & Abiko, 2015). When Sao Paulo embarked on its grand ISU plan, local authorities devised various schemes to encourage funding from private sector participants such as municipal tax exemption for those investing in affordable housing development projects. The Brazilian government also employs strategies such as building rights vouchers for the acquisition of privately owned land on which informal settlements are located. Landowners can use these to purchase alternative land from the city in which they are issued (Budds, et al., 2005).

### 3.4. Indian policy and practices on ISU and affordable housing development

Before 2007, each state in India formulated its own housing and urban development policy (Burra, 2005). The final, yet oldest, IS redevelopment scheme in India is the 1995 Slum Rehabilitation Scheme (SRS) of Maharashtra state. The SRS scheme relied on private developers constructing multistorey buildings and providing free housing to IS residents, in return for benefits from the state (Mukherjee & Raut, 2017). The eligible IS residents were people who had been residents in the IS by January 1995, per the state’s electoral roll. The scheme was only implemented in settlements in which a minimum of 70% of the residents were eligible to receive housing (Mukherjee & Raut, 2017), although the period for eligibility was progressively updated, and households residing in IS that did not have the 70% minimum included over time.

At the time of establishment of the SRS, developers would submit development plans and to enhance public participation, IS residents would select the preferred developer to construct multistorey housing in their IS. Developments constructed under the SRS had two components, an upgrading or rehabilitation component and a sale component. Units from the rehabilitation component would then be allocated to qualifying households. In addition, developers would give each household eligible for a free housing unit an amount of Rs 20,000, for maintenance of their unit. Beneficiaries could only sell their housing units after a minimum of 10 years (Mukherjee & Raut, 2017). To entice private developers to invest in

the scheme, Maharashtra's government granted them an additional Floor Space Index (FSI) on their developments for each of the free housing units developed. The additional FSI would increase the number of sale units within the development sufficiently enough to ensure that the project would still be profitable for the developer. Where a development required more than the maximum allowable FSI of 2.5, the developer would be issued a Transfer Development Rights (TDR) certificate that could be used to purchase land from the city without the exchange of money. TDRs could also be sold to other developers in the market for money (Burra, 2005).

The 2007 adoption of the National Housing and Habitat Policy of India (2007) has allowed coherency in how the country deals with IS (MoHUA, 2007). The policy promotes the development of affordable housing for urban low-income households by setting aside a percentage of all developments for low-income housing, encouraging private sector participation in low-cost housing development, and developing housing subsidies for low-income households. For already existing IS, the policy emphasises urban renewal and in-situ ISU, as well as the development of basic infrastructure and services to support the development of existing IS.

In 2011, due to the adoption of the National Housing and Habitat Policy of India (2007), the Rajiv Awas Yojana (RAY) scheme was developed (MoHUA, Ray Guidelines, 2013). The scheme encompasses all IS, and it was developed to enhance the development of housing, basic infrastructure, and social services to IS, developing reforms in policy areas that result in the development of IS, promoting the construction of affordable housing and improving the employability and earning ability of IS' residents through skills development.

#### 3.4.1 Policy interpretation and implementation

Since the adoption of a unified national agenda for ISU, the Indian government has undertaken various ISU projects. In a 2017 investigation, Mukherjee and Raut (2017) surveyed 48 people from households that had received apartments through three different projects under the SRS programme. Most (85%) of the households had less than 7 people and monthly incomes below Rs. 20,000. The participants reported receiving sufficient and reliable water and sanitation services in units, the majority (62%) of respondents complained about the increased cost of electricity. Many respondents were greatly dissatisfied with building maintenance costs. This was mainly because the developers had not complied with the requirements of the SRS to provide Rs 20,000 per household towards maintenance fees, which resulted in residents bearing the costs of maintaining their housing before the expiry of the ten years stipulated in the SRS's requirements. SRS beneficiaries also complained about the size of their housing units. This was not helped by the fact that developers had promised some households two apartments, due to the size of their previous housing units, a promise that was rarely kept. Most (92%) beneficiaries were not opposed to living in high-rise units but preferred their previous houses which encouraged interactions with neighbours (Mukherjee & Raut, 2017).

#### 3.4.2 Funding strategies for India's approach to addressing IS

In 2001, India's government established a housing subsidy scheme for poor households in urban areas, known as Valmiki Ambedkar Awas Yojana (VAMBAY) scheme (Mukherjee & Raut, 2017). The National Slum Development Programme was also established to assist states in providing basic infrastructure in IS through grants. There are also state-subsidised social funding loans established with banking institutions to help the poor generate self-employment opportunities or develop their households. For example, the Housing and Urban Development Corporation is mandated to loan 70% of its funds to low-income groups (Burra, 2005). To fund projects

developed under the RAY policy, a funding strategy was developed which derives funding from the National government, the State government, Local Municipalities, and the project beneficiaries (MoHUA, Ray Guidelines, 2013). The funding required from the various stakeholders is weighted to account for the economic capacity of the various stakeholders on the project.

Another funding strategy used in the Maharashtra State for ISU on privately owned land is the Slum Rehabilitation Scheme (SLS) (Burra, 2005). This is a public-private partnership scheme where the full costs of carrying out the project are borne by the developer (Mukherjee & Raut, 2017). The developer gains ownership of the land on which the settlement is located, and a portion of the land goes to the residents of the settlement, while the remainder may be used to develop properties that the developer can sell. Incentives are given to developers through a relaxation of the Floor Space Index (FSI), the ratio of the total floor area of the building, to the area of land on which it is built. Where a development project requires more than the maximum allowable FSI to remain profitable, the developer can be issued a Transfer Development Rights (TDR) certificate that can be used to purchase land from the state without the exchange of money (Burra, 2005). TDRs can also be sold to other developers in the market for money (Burra, 2005).

The Community-Led Infrastructure Finance Facility (CLIFF) was also set in 2001 to assist NGOs working to implement community-driven infrastructure and housing initiatives. This funding strategy is excellent for pilot community-driven projects that usually have difficulty getting funding due to their explorative nature as it provides credit, guarantees, and technical assistance. CLIFF has been very important in making these projects feasible for government subsidies by funding the processes required for scaling up (Mukherjee & Raut, 2017).

#### 3.5. Common themes in ISU and affordable housing development

The systematic literature review surfaced five common themes that are important for ISU and affordable housing development in South Africa, Brazil, and India. These are public participation, in-situ ISU, tenure legalisation, livelihood development, and private-sector participation. First, South African policies assert that public participation is important in ISU, however, in practice public participation is limited, due to the government's emphasis on developing new housing units through the RDP programme (Klug & Vawda, 2009). Brazil and India also deem public participation important, and this was evident in all the papers cited for this research for these two countries. Second, in-situ ISU is cited as an important strategy for addressing IS across all three countries, as well as in the international literature. South African research indicates an emphasis on constructing new housing units and limited in-situ ISU. Brazil's constitutional prescriptions on land usage created the most conducive environment for incremental in-situ ISU. India has also successfully undertaken in-situ ISU having devised a strategy to incentivise private developers to undertake ISU interventions. Third, tenure legalisation is cited as "achieved in principle" in South African legislation, but it is unclear how this has been achieved. Brazil's Constitution allows tenure legalisation to be granted to IS residents who can prove they have settled on the land for a minimum of 5 years without complaint by the original landowners. The same principle was adopted in India, and it is used to secure tenure for residents of informal settlements. Fourth, the protection of livelihoods is cited as very important in all the literature reviewed in this study. South Africa's emphasis on the RDP programme results in potential disruptions to livelihoods as IS residents are relocated to new housing projects. In Brazil, even though the community from Favela Bairro was involuntarily relocated, the emphasis on livelihood improvement resulted in most of the beneficiaries being satisfied with the move (de Camargo Cavalheiro & Abiko, 2015). In

India, livelihood development is cited as important however the literature found that ISU often resulted in disruptions to livelihoods (Mukherjee & Raut, 2017). Fifth, one of the areas in which India tops both Brazil and South Africa is private sector participation. At the level of policy, all three countries identify private sector participation as important in addressing IS and affordable housing development. However, only India appears to have found innovative ways to incentivise private sector investment in ISU and affordable housing development (Mukherjee & Raut, 2017).

#### 4. INTERVIEWS WITH SOUTH AFRICAN PROFESSIONALS AND TRANSECT VISIT TO MAHLAKONG SETTLEMENT

Following the systematic literature review, the study used semi-structured interviews with professionals employed in agencies involved in ISU and affordable housing development and a transect visit to one IS to better understand South Africa's approach to ISU and affordable housing development, in practice (Creswell, 2013). The interviews with the professionals were designed around the major recurring themes identified from the literature, and interview questions were open-ended. Because the study was going to rely on a small sample size, only professionals identified as likely to be "information rich" were interviewed. Additionally, a transect visit to the Mahlakong informal settlement in Lephalale (Limpopo Province) was undertaken. Apart from a walk-around in which an infrastructure and amenities audit of the settlement was undertaken as well as viewing housing structures, a small number of residents were approached for semi-structured interviews, to collect information on the community's cooperation with authorities, tenure status, and the social dynamics of the community. A thematic analysis (Creswell, 2013), similar to that done in Section 3.5, was used to analyse the findings from interviews and the transect visit and to make recommendations. Comparisons were made between policy prescriptions and the priorities cited by the professionals, to determine alignment or misalignments between the interventions being prioritised for implementation in South Africa and the interventions undertaken in Brazil and India. Where opportunities for improvement in South Africa's response to informal settlements and affordable housing development were noted, these were highlighted.

#### 4.1. Findings from semi-structured interviews with professionals

##### 4.1.1. Informal settlement upgrading

All the professionals interviewed reported that in-situ ISU was looked at favourably in their organisations. The two state-employed interviewees said their organisations preferred in-situ ISU, with one saying that IS often develop for reasons such as ease of access to livelihood opportunities, educational opportunities, transportation, etc. They also highlighted the economic and social disadvantages of settlement relocation. The interviewee from a non-governmental organisation (NGO) indicated that their organisation's purpose was to upgrade IS in situ, and that their organisation was carrying out various projects of this nature in South Africa.

##### 4.1.2 Recognition of different types of informal settlements

Illegally occupied multistorey buildings, common in inner city areas, remain a challenge for many South African metropolitan municipalities (Strydom & Viljoen, 2017). The state-employed interviewees reported that current legislation only recognises IS characterised by shack structures as IS, and not illegally occupied multistorey buildings. Because of this, the latter are not treated as IS, but there are strategies state institutions have developed to address such buildings. The legislated classification system looks at the vulnerability of the settlement, the tenure status of residents of the settlement, and the stage of development.

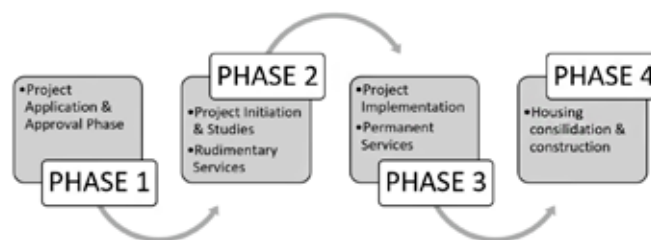


FIGURE 1: The NHC phases of an informal settlement upgrading project.

##### 4.1.3 Prioritisation of informal settlements

State agencies use a four-stage process to prioritise IS for interventions. Figure 1 below shows the four phases of a settlement upgrading project as described in the National Housing Code of 2009, NHC, (DHS, National Housing Code, Volume 4, Part 3: Upgrading Informal Settlements, 2009). One of the state-employed interviewees reported that a single project manager decides which IS to prioritise and determines the ones in need of urgent interventions, although certain circumstances may arise with time (e.g., land invasions and emergencies such as fires), and affect the prioritisation of settlements after it has been settled. This interviewee also highlighted that things such as a proposed project's likelihood to succeed, source of funding, and conditions associated with the funding, can all sway a project manager to prioritise or deprioritise a project. Notably, this interviewee did not refer to an organization-wide model for ISU project prioritisation.

##### 4.1.4 Infrastructure and services provision

Phase 2 of the upgrading process laid out in the NHC empowers the municipality to construct interim or basic infrastructure and provide basic services to IS. All ISU projects reach this stage, even for IS likely to be relocated, because this is the stage at which land ownership and suitability for long-term settlement is determined. The incremental nature of the legislation allows government institutions to deliver infrastructure and services in settlements that may ultimately not be upgraded. All interviewees in this study noted that basic services are implemented incrementally, something the evidence of which was seen during the transect visit to Mahlakong. Successes made in the provision of water, electricity, and sanitation infrastructure were noted by all interviewees, one of whom noted that 50% of IS households in their jurisdiction have access to water and sanitation within 50 meters of their housing and that they have prepaid electricity and waste collection. The interviewee working for an NGO reported that their organisation did not develop infrastructure, but worked with local authorities to develop infrastructure in communities in which their organisation was involved in ISU. This interviewee said "The mapping would assist with the process of re-blocking, and it also assisted with the identification of the kinds of services and infrastructure that was lacking. In some instances, for example where most of the toilets are near the roads, which makes them not accessible at night for some of the households within the community, these community members are able to use the GIS maps that we would develop for them to motivate for construction of the infrastructure to the authorities. What will happen in these cases is that the City's records will indicate that toilets have been constructed in these communities, so it would not be in the City's radar to build toilets for them. But with the map, the community can approach the city and demonstrate the problem with the location of the available toilets, then to show the city that additional toilets are still required in certain areas." Within this, there is a mutually beneficial relationship between the government and the NGO, which enhances the government's ability to engage in ISU.

#### 4.1.5 Tenure legalisation

When it comes to tenure legalisation and title provision, the state-employed interviewees provided differing opinions, with one saying, *“Our only tenure mechanism is full title deeds at the moment.”*, while the other reported that temporary tenure arrangements are made available to IS residents awaiting full tenure or relocation. The BNG states that “security of tenure has been achieved in principle” and recommends that various title options be investigated and adopted, however, this investigation found no document detailing title options available for ISU interventions as called for by the BNG. All state-employed interviewees said high housing density challenges tenure legalisation in IS, since legislation may prescribe certain minimums, e.g., minimum land size and housing unit size, to guide ISU. In dense settlements, this may limit upgrading. The interviewees said their organisations use some policies to negotiate relaxations to the legislated minimums.

#### 4.1.6 Public participation

Getting community backing is one of the most important requirements for ISU projects. Interviewees described working within “Project Steering Committees”, comprised of community members, project leaders, professionals, and area officials to look after the interest of all the stakeholders in the project. One of the interviewees, when describing the phases of ISU, highlighted the importance of public participation in the process when they remarked, *“And then phase two, then you start doing detailed work. You actually go to the ground, do you test pits, go to the environmental, and do your traffic counts, do the community involvement, do a layout with the community and the community must sign the layout to say that they accepted it. Before you can submit it, the community must have signed it.”* Within these contexts, communities’ demands must always be heard, and the officials take the responsibility of determining if the demands can be met, and where they cannot, advising communities on suitable alternatives. The NGO-employed interviewee also explained that their organisation places a high premium on community engagement and that they assist communities with developing leadership structures that interact with the state and other organisations on behalf of the community.

#### 4.1.7 Innovation

##### 4.1.7.1 Infrastructure and housing innovation

One of the state-employed interviewees highlighted an innovative project pioneered by one municipality, whereby shipping containers are converted into water collection points and communal sanitation facilities. This project was awarded the Stockholm Industry Water Award for “Most Innovative and Progressive Water Utility in Africa” in 2014. However, the interviewee highlighted that the project had not been implemented sustainably and that the ablution facilities’ high capital costs and high maintenance and operating resulted in the project “bankrupting” the municipality’s water and sanitation budget, thus the municipality was investigating alternatives that would be just as effective but less costly. The interviewees also highlighted innovation in the design and layout of housing structures being constructed in IS, with one highlighting the Cornubia human settlements project, which has multistorey and clustered housing as opposed to the more commonly built single storey on a single land plot IRDP developments.

##### 4.1.7.2 Policy innovation

When state-employed interviewees were asked if they thought any of the policies unearthed in the literature review could be adopted in South Africa, they both thought that Brazil’s land ownership policy, which grants IS residents’ ownership of the land following five years of settlement on the land without contestation, was at odds with South African legislation. Noting that

South Africa’s Constitution (1996) makes allowance for land expropriation, and that there has been very little appetite by government to implement this intervention, they concluded that South Africa might hesitate to enforce a policy like Brazil’s, even if it was adopted. On questions about strategies that could be adopted to encourage private sector involvement in ISU and affordable housing development, the interviewees believed that a strategy like that used in India, i.e., enticing private developers to construct affordable housing such as additional Floor Area Ratios for affordable housing unit developments and Transferable Development Rights to purchase alternative land parcels from the municipality, the interviewees suggested that such strategies would not be suitable in South Africa.

#### 4.1.8 Community organisation

All interviewees said that having an organized community was important for ISU processes. One of the interviewees observed that IS communities are becoming more organized; developing their leadership structures, their neighbourhood maps, naming streets, and developing recreational and shopping facilities within their settlement, all things the interviewee described as positive, and went on to state that when the community has one leadership structure, this can assist with interventions for ISU.

#### 4.2. Findings from the transect visit to the Mahlakong settlement

Mahlakong is a 10-hectare, high-density informal settlement, which developed in 2014 on land owned by a private company. The settlement is centrally located within the town of Lephalale, and it is within walking distance of a shopping centre, a government hospital, a primary school, and a TVET college. Home to two coal-fired power stations and South Africa’s largest coal mine, Lephalale attracts a lot of migrant labourers seeking work opportunities.

##### 4.2.1 Infrastructure and services provision

The municipality has put three drinking water standpipes (see Figure 2), within the 200m stipulated by DHS (DHS, The Neighbourhood Planning and Design Guide, Section J: Water Supply, 2019), within the settlement. The water supply per capita could not be determined, but residents reported that the water supply is reliable, and the municipality warns them before planned interruptions. There are also solar-powered floodlights around the settlement (see Figure 2). The residents informed that the municipality regularly collects refuse, although this service is sometimes interrupted. When this happens, community leaders contact the municipality, to request the collection of the refuse, and if these attempts fail, the refuse is burnt within the settlement.

There is no municipality-provided infrastructure for household electrification and sanitation, so residents have constructed pit latrines, and they use solar panels and batteries for household electrification (see Figure 2). One of the residents stated that they prefer solar power, due to the fire risks posed by using candles and other fire-based fuel and lighting instruments, and that the community has no illegal electricity connections due to safety risks. Pit latrines are shared by household clusters, and they are kept locked, which creates a sense of ownership. It was noted that multiple pit latrines were built in a cluster, indicating some form of “settlement planning” process by the residents through having a communal area for sanitation.

##### 4.2.2 Tenure regularisation

It was noted that most houses had numbers spray-painted near their doorways. Residents reported that the numbers are spray-painted by the municipality and that they can use the house numbers to obtain



**FIGURE 2:** Some of the infrastructure available at the Mahlokong informal settlement. The picture on the left shows a communal standpipe (L) and a solar-powered flood light (R) while the picture on the right shows community-built pit latrine toilets (L) and solar panels (R).

municipality-issued letters confirming residency, which in turn can be used for formal trading such as opening a bank account. The process of obtaining a house number starts with land transfer, which can be due to gifting or an unofficial sale by one of the residents and construction of a new dwelling. The residents indicated that land plots can be purchased from R300.00, and upon purchase, one goes to the municipality to request allocation of a house number. The municipality requires a payment of R10.00, a South African ID and consent from the owners of the shack for a “stand number” to be allocated to the new dwelling. The residents called the inscription a “stand number” because the municipality has promised that each dwelling with a number would be allocated a stand when the settlement is upgraded. Residents also reported that the municipality has granted them temporary tenure within the settlement, with one resident saying, “After you have built your shack, you can go to the municipality and for R10.00 they charge you, they come, and they give you a number for your shack. To get a number for the shack, you need to show the municipality your ID that you are a citizen and then the municipality sprays on your shack the stand number. Getting a stand number is very helpful because you can go with that letter to the police and get an affidavit, then you can open a bank account.”

#### 4.2.3 Community Cooperation

It was clear from interviews that the residents understand common risks such as fires and safety risks from illegal electricity connections. As a result, the community prefers using solar power for lighting, and there is a ban on illegal electricity connections. The residents reported that leaders interact with the municipality on behalf of residents, for example, to request refuse collection during interruptions, as previously mentioned. In terms of communal amenities, the Mahlakong community has a soccer field. There is also a small “convenience” shop from which community members can buy limited grocery supplies.

#### 4.2.4 Community ingenuity and innovation

At the time of the transect visit, the community of Mahlakong showed strong signs of ingenuity when it came to addressing outstanding infrastructure and services. As previously stated, community members preferred using solar panels and batteries to electrify their dwellings. One of the residents said, “I have a 12 watts battery; it is used for lights, and I use it to watch TV as well. The electricity is enough, even for cooking I can use a gas bottle or four-plate stove. [...] I buy it from a wholesale downtown. It's affordable”

## 5. ANALYSIS OF FINDINGS

### 5.1. Strong points in South Africa's response to informal settlements

#### 5.1.1 Preference for in-situ upgrading and incremental development

The state-employed interviewees both confirmed that within their organisations ISU is the preferred way of dealing with IS, noting that while relocations still occur, these are only undertaken when tenure security cannot be granted. The results also showed that the process followed for ISU is as described in the NHC (DHS, National Housing Code, 2009) which lends itself to incremental development. Tenure security and the development of services infrastructure for the settlement are prioritised and undertaken before the construction of housing. Tenure security enables residents to invest in the site and over time improve the quality of their housing unit (Turner, 1976). This policy position aligns with WB policy, which advocates for in-situ ISU and incremental housing (World Bank, 2011). Brazil and India were also shown to have a preference of preference for in-situ ISU, although methods adopted for the implementation of the policy differ.

#### 5.1.2 Incremental tenure arrangements

The literature review identified tenure security as one of the main issues affecting IS residents, globally. In South Africa, tenure security is never an issue for IS residents as households are given full title ownership during the upgrading process. Two of the professional interviewees spoke of the existence of temporary tenure arrangements, for IS residents in South Africa. This was corroborated by one of the residents of Mahlakong. Such arrangements are available to households in IS that are either in the early stages of upgrading or are unlikely to be upgraded. The temporal tenure arrangements enable residents from such household's recognition within their communities and enable them to interact with formal institutions to improve their livelihoods.

#### 5.1.3 Provision of basic infrastructure and services

Both state-employed interviewees said there is significant success in the provision of basic infrastructure and services to IS. During the transect visit, it was observed that infrastructure and services are provided even to IS whose likelihood for upgrading in the long term is unknown. The process prescribed in the NHC (DHS, National Housing Code, 2009) empowers municipalities to develop infrastructure and basic services while

processes to determine the long-term suitability of the settlement for upgrading are underway. The provision of basic services can significantly improve the livelihoods of IS residents (World Bank, 2011). This is one area

in which the preference for in-situ ISU as described by the professional interviewees has been greatly successful. The interviewees also highlighted innovative interventions that are being used to improve the provision of basic infrastructure and services. Award winning projects, such as the communal ablution blocks constructed by one of the municipalities, prove that authorities genuinely desire provide and improve services for IS residents. Sometimes such facilities are constructed in IS that may not be upgraded in the long term, revealing a holistic approach to the provision of basic infrastructure and services for all IS. For settlements likely to be upgraded in the long term, increased levels of services as described in the Neighbourhood Planning and Design guide (DHS, 2019) such as a standpipe in each household, or water in the house may be constructed.

**5.1.4 Community Engagement**

This investigation showed that the process prescribed for in-situ ISU in South Africa requires strong community engagement. The NHC articulates that community buy-in and continuous engagement are central to the completion of in-situ ISU projects. One of the interviewees reflected on how beneficiary communities are the most important stakeholder, and government officials have a responsibility to hear their requirements, try to fulfil them and where it is impossible to deliver on them, advise on suitable workable alternatives. This is in line with the best practice as prescribed by the World Bank and UN-Habitat. The literature review revealed that community engagement is also encouraged Brazil's and India's ISU and affordable housing development policies, and the results reveal that South Africa leads in centring communities, especially compared to India where community demands can be ignored in private developer-funded projects (Burra, 2005).

**5.2. Areas where South Africa can improve its response to informal settlements**

**5.2.1 Adopting an expanded definition of informal settlements**

Not recognising illegally or informally occupied multistorey buildings as IS limits the government's ability to deal with these types of settlements. There are many parallels between IS on illegally occupied land and illegally occupied multistorey buildings, pointing to both being types of IS. First, in both instances, the illegal occupation (of land or a building) results in the state intervening to move the settlement to legality. **Second**, both may involve "landlords" who collect rent without providing services. Third, often lack basic infrastructure and services, and this lack usually continues unless the state intervenes. The only notable difference between the two types of settlements is the type of title that must be issued to residents upon formalisation of the settlement. Budds et al., (2005), point out that the new Sao Paulo policies for addressing IS include illegally occupied inner city buildings. Several opportunities may become available for addressing IS in South Africa with the inclusion of illegally occupied multistorey buildings. First, metropolitan municipalities, that often struggle with illegally occupied buildings in the CDBs, may gain access to national grants meant for ISU interventions, and use these funds to address illegally occupied multistorey buildings. Second, cities will be able to house more people in limited spaces even in the informal sector. **Third**, using dilapidated inner-city buildings to provide affordable housing can help counter apartheid spatial planning which settled low-income households on the urban periphery. Fourth, the formalization of illegally occupied inner city buildings may reduce crime (often enhanced by illegal occupations). The only notable disadvantage of rehabilitating multistorey buildings and providing full title to beneficiaries is that the title arrangement would require a "sectional title" due to the need to develop common areas. Brazil and India both provide lesson for how the

challenge of sectional titles might manifest as well as some ideas on how such challenges might be overcome.

**5.2.2 Expand Tenure Legalisation Options**

This investigation shows a likely link between not recognising illegally occupied multistorey buildings as IS and restrictions in the type of title ownership currently being issued to beneficiaries of state-funded in-situ ISU interventions. Upgrading multistorey buildings would require sectional titles due to common areas. Sectional titles require body corporates and the collection of levies for the upkeep of common areas. One of the state-employed interviewees had concerns about the ability of poor communities to organize themselves and pay levies. This concern was not shared by other professional interviewees. Also, during the transect visit, it was clear that residents of IS are capable of organizing themselves and developing leadership structures. While body corporates are more intricately organized, it is not unreasonable to believe that with sufficient support, IS residents could form body corporates for the management of their upgraded settlement. More research is needed to understand how multistorey sectional titles can be implemented in ISU in South Africa. With regards to the collection of levies, this investigation found two possibilities: using municipal funds for building levies, mentioned by one of the interviewees as being piloted in one South African municipality and creating a community fund to cover levies, as is done in India for projects done through the RAY policy. A proportion of the funding for the maintenance of common areas could be derived from the beneficiaries of the projects themselves, with beneficiaries who fail to contribute fees being allowed to pay with "sweat equity".

**5.2.3 Increasing private sector participation in affordable housing development**

There is very little participation by private developers in ISU and low participation in affordable housing development and South Africa could do more to encourage private developer participation. Additional incentives and interventions that can be investigated include the selling of Transferrable Development Rights to trade land with the city for the development of affordable human settlements, as done in India, and implementing quotas for developers requiring proportions of housing developed to adhere to certain affordability criteria. This strategy requires private developers to construct a certain amount of affordable housing units for each expensive development they undertake, and the units meant for affordable housing do not have to be on the same building site as the more expensive units. South Africa can adopt this policy and percentages of these quotas could be designed with the income demographics across the local municipality in mind. Developers wishing to waive these quotas would be required to contribute towards housing development for low-income groups. While this policy may not lead to a direct intervention in ISU by private developers, it will increase the supply of affordable housing, which can reduce the number of households living in IS. This policy may also reduce the burden on the state to provide housing for lower income groups and unlock funding that can be redirected towards the most indigent households in the city, which is likely IS residents.

South Africa could also incentivise private developers to undertake low-income housing developments. Incentives may be monetary or use another municipality-recognised value system, like the ones used in India. Other incentives include reduced municipal fees for affordable housing development, tax incentives, and land sharing. Another strategy that could be adopted to generate income from IS interventions is the construction of additional units that could be sold to generate income and fund a portion



of the project. CoJ's 2018 inclusionary housing strategy encourages private developers to support inclusionary housing by construction affordable units within development, but the city itself as well as other authorities in South Africa could also adopt this policy in ISU interventions and construct for-profit units which can be sold to generate income during ISU interventions. Finally, the private sector can be enticed to contribute to community funds. As is the case with India's RAY scheme, community contributions could partially fund the project. Community contributions encourage buy-in and give agency to communities in the ISU projects (Burra et al., 2005).

## 6. CONCLUSIONS AND RECOMMENDATIONS

This study investigated policies and strategies that are applied to address IS and affordable housing development in Brazil and India but are not currently being practiced in South Africa. The study also sought to better understand how South Africa currently deals with IS, to make recommendations on how the country might adopt some of the strategies currently used in Brazil and India to better address IS. The investigation found in-situ ISU to be the preferred means of ISU and affordable housing delivery, for a variety of state agencies and NGOs in South Africa. In-situ ISU is also recommended by WB and UN-Habitat as a means of addressing IS and developing affordable housing, and has been adopted in both India and Brazil, although its implementation in Brazil, India, and South Africa, differs. Community engagement was identified as critical to the success of ISU projects in South Africa. Despite this being in line with international best practice, and championed in both Brazilian and Indian legislation, community voices are often ignored in India, particularly in private developer-funded projects. The investigation also revealed the existence of incremental tenure arrangements. Finally, the investigation revealed that ISU is done incrementally, with the delivery of basic infrastructure and services preceding housing development. South Africa appears to be doing better in this area than Brazil and India. **It is recommended** that South Africa consider recognising illegally occupied multistorey buildings as IS, as Brazil does. If this is done, South Africa will unlock access to funding grants meant for ISU, for use in developing affordable housing. **Second**, South Africa could expand tenure legalisation options, through implementing multistorey sectional titles for upgraded multistorey buildings. **Third**, South Africa could consider a funding strategy in which households are required to contribute a small portion towards funding the ISU projects. In South Africa, this has only been done in projects run by non-governmental organizations. Having beneficiaries contribute something towards ISU projects does not only give them agency and a sense of ownership projects, it can also be the means to ringfence any jobs emanating from the ISU projects, if households who cannot contribute can be given jobs in the project, and then use the salaries they earn to pay their contributions. Finally, the country could entice private sector participation in ISU and affordable housing development, as a way of improving its overall response to IS. India is a good model for how the private sector could be enticed to participate in ISU and affordable housing development.

## 7. REFERENCES

- Bradlow B, Bolnick J & Shearing J. (2011). Housing, institutions, money: the failures and promise of human settlements policy and practice in South Africa. *Environments and Urbanisation*, 23(1): 267-275.
- Budds J, Teixeira P & SEHAB. (2005). Ensuring the right to the city: pro-poor housing, urban development and tenure legalisation in Sao Paulo, Brazil. *Environment and Urbanization*, 17(1):89-113.
- Burra S. (2005). Towards a pro-poor framework for slum upgrading in Mumbai, India. *Environment&Urbanization*: 67-88.
- Cardoso, A. & Denaldi, R. (2019). *Slum Upgrading in Brazil: A Preliminary Review of the Growth Acceleration Program (PAC)*. s.l., s.n.
- Creswell J W (2013). In: *Qualitative inquiry and research design: choosing among five approaches*. s.l.:Sage Publications: 450.
- de Camargo Cavalheiro D & Abiko A. (2015). Evaluating slum (favela) resettlements: The case of Serra dor Mar Project, Sao Paulo, Brazil. *Habitat International*, 49: 340-348.
- Denaldi R & Cardoso AL 2021. Slum Upgrading beyond incubation: exploring the dilemmas of nation-wide large scale policy interventions in Brazil's growth acceleration programme (PAC). *International Journal of Urban Sustainable Development*, 13(3): 530-545.
- Department of Human Settlements (DHS), (1997). *Housing Act 107 of 1997*. Pretoria: Government of South Africa. [Online].
- Department of Human Settlements (DHS), (2004). *Breaking New Ground: A comprehensive plan for the development of sustainable human settlements*. Pretoria: Government of South Africa. [Online].
- Department of Justice and Correctional Services (DoJ & CJ). (1996). *Constitution of the Republic of South Africa, 1996 - Chapter 2: Bill of Rights*. Pretoria: Government of South Africa, [Online].
- Huchzermeyer M, Karam A & Maina M. (2014). Informal Settlements. In: P. Harrison, G. Gotz, A. Todes & C. Wray, eds. *Changing Space, Changing City, Johannesburg After Apartheid*. Johannesburg: Wits University Press: 154-175.
- Klug N & Vawda S. (2009). Upgrading of Informal Settlements: An Assessment with Reference to the Application of "Breaking New Ground" in Cape Town and Johannesburg. *Town and Regional Planning*, 54(54): 37-49.
- Litman T. (2022). *Affordable-Accessible Housing in a Dynamic City: Why and How to Increase Affordable Housing in Accessible Neighbourhoods*, Victoria: Victoria Transport Policy Institute.
- Marais L, Ntema J, Cloete J and Cloete LM 2018. Informal Settlement Upgrading, assets and poverty alleviation: evidence from longitudinal research in South Africa. *Development Southern Africa*, 35(1):105-125.
- Mukherjee S & Raut O. (2017). Assessment of Slum Rehabilitation Scheme: A case study of Pune, Maharashtra. *Journal of Applied Management*, 9(2): 54 - 66.
- Strydom J & Viljoen S. (2017). Unlawful Occupation of Inner-City Buildings: A Constitutional Analysis of the Rights and Obligations involved. *Potchefstroom Electronic Law Journal*, 17(4): 1206-1261.
- Turner JF 1976. *Housing by People: Towards Autonomy in building environments*. 1 ed. London: Marion Boyars Publishers Ltd.
- UN-Habitat. (2015). *UN-Habitat. Habitat III Issue Paper 22: Informal Settlements*. [Online]
- UN, Sustainable Development Goals. (2015). [Online].
- UN, Progress Chart-SGD Indicators. (2023). [Online].
- Venter A, Marais L & Morgan H 2019. Informal Settlement Upgrading in South Africa: A preliminary Regenerative Perspective. *Sustainability*, 11(9).
- World Bank. (2011). *An evidence-informed response to slum settlement A learning note*. [Online]
- MoHUA. (2007). *National Urban Housing and Habitat Policy*. New Delhi: Government of India. [Online].
- MoHUA. (2013). *Ministry of Housing and Urban Affairs*. New Delhi: Government of India [Online].