Exploring the approaches and strategies of Upgrading Informal Settlements: Learning from Policy and Practice in the City of Ekurhuleni, Gauteng Province

Lungani Makhaye, Trynos Gumbo, Eric Makoni and Nischolan Pillay
Department of Town and Regional Planning
University of Johannesburg
Office 6202, 6th Floor
John Orr Building
lunganmckay@gmail.com, tgumbo@uj.ac.za, emakoni@uj.ac.za, npillay@uj.ac.za

Abstract

Access to adequate housing remains a big challenge in South Africa, despite efforts since 1994 to deliver affordable housing to about 2.3 million poor households through project-linked housing subsidy schemes. The current housing backlog in South Africa stands at 2.1 million households, and approximately 1.2 million of these families live in informal settlements under conditions which pose serious threats to their health, safety and security. Against this backdrop, the government introduced ground-breaking housing policy reforms in 2004, which included a programme devoted to the upgrading of informal settlements. The new initiative, crowned as the “Upgrading of Informal Settlements Programme” (UISP), had the objectives to “eradicate” all informal settlements by 2014. With increased urbanisation, cities become more challenged by the influx of people, which puts pressure on service delivery and infrastructure. Chapter 2 of the bill of rights section 24 states that; “everyone has a right to the environment that is not harmful to their health or well-being and to have their environment protected for the benefits of the present and future generations” (Republic of South Africa Constitution, 1996). Consequently, this study aims to explore the approaches and strategies of upgrading informal settlements: learning from policy and practice in the City of Ekurhuleni. It seeks to identify and flesh out the key policy gaps, in order to inform further policy learning. This study adopts relevant information from the qualitative and quantitative research approach. It applies a case study research design, using information from books, journal articles, national policy documents, publications and news reports, as well as internet sources. Data were collected through questionnaires (City Officials responsible for the UISP and policy implementation, and NGOs personnel assisting within the UISP in the City of Ekurhuleni), structured in-depth interviews, with key informants from the City of Ekurhuleni (town planners and NGOs officials responsible for UISP) together with observations, map surveys and photographic surveys of the upgraded settlements. The findings pinpoint the existence of comprehensive national legislative and policy frameworks in support of the slum upgrading initiative. However, the evidence suggests that the goal of slum eradication is still farfetched, due to several problems and challenges. The identified an apparent gap between the policy rhetoric, and the reality of implementation, which is characterised by notable inconsistencies, tensions, and problems. These have hindered the programme’s ability to make realistic improvements in the lives of slum dwellers.

Keywords: Upgrading Informal Settlements Programme, Community-Based Organisation

1. Introduction

The provision of affordable and adequate housing has been one of the great challenges faced by the South African government. Housing is one of the most important basic needs for human beings. The country is experiencing some of the fastest growth rates in the world, and the demand for formal houses is prolific (Gunter and Manuel, 2016). Looking at the general situation of UISP in the three worlds; (developing, developed and transitional) rapid population growth is one of the biggest obstacles for development. This, together with continuing poverty and lack of basic needs for an acceptable life poses a great challenge for sustainable development (Metternicht, 2018). Informal settlements are neglected parts of cities, where housing and living conditions are appallingly lacking. Informal settlements range from high density, squalid central city tenements to spontaneous squatter settlements without legal recognition or rights, sprawling at the edge of cities. Some are more than fifty years old while others are land invasions just underway. Slums may be called by various names, Favelas, Kampungs, Tugurios, yet share the same miserable living conditions. Informal and squatter settlements are growing at alarming rates. They are the products of failed policies, bad governance, corruption, inappropriate regulation, dysfunctional land markets, unresponsive financial systems, and a fundamental lack of
political will. Each of these failures adds to the toll on people already deeply burdened by poverty and constrains the enormous potential for human development that urban life offers. This work focuses on exploring the approaches and strategies of Upgrading Informal Settlements: learning from policy and practice in the City of Ekurhuleni. It starts by introduction and background whereby it’s present general situation of the area of research in three worlds, developing, transitional and developed. It goes on to present the challenges experienced in as far as the phenomenon is concerned, followed by argument on why the cause of concern must be studied, what efforts that have been implemented in three worlds to the study area to try and resolve the problem. The next segment of the section outlines the rational of the study, spatial scope, Conceptual scope, Temporal scope, Research argument, research methodology, findings or results presentations and discussion and finally by Conclusions, recommendations and lesson learnt.

1.1. Problem Statement
In 1994, the South African Government pledged itself to offering housing subsidies in reaction to the shortage of housing owing to the country's past. The problem of delivering housing in South Africa is attributed to land problems, lack of resources and the capacity to enforce policies. According to Thellane (2008) this include lack of affordability of well-located land for low-cost housing. The considerable pressure on housing problems has resulted in the birth of a number of housing legislation, policies and programmatic interventions in municipalities and city of Ekurhuleni is one of them. The housing problem in Ekurhuleni is most apparent in terms of the proportion of households residing in informal settlements, with over 18 % of households living 119 informal settlements scattered throughout the metro (CoE-SOCA,2019). As a result, the study aims to explore the approaches and strategies of upgrading informal settlements: learning from policy and practice in the City of Ekurhuleni. With the hope of identifying gaps between the policy and practice.

1.2. Objectives
The study has the following objectives;

• To review the policies and legislative framework that inform the upgrading of informal settlements in South Africa
• To examine the procedures and strategies that are employed by the City of Ekurhuleni in upgrading informal settlements.
• To assess the stakeholder’s roles and responsibilities in upgrading informal settlements in the City of Ekurhuleni.
• To formulate a framework for the upgrading of informal settlements in the City of Ekurhuleni.

2. Literature Review
The urban population of developing countries is increasing at an alarming rate. Almost 1 billion, or 32 percent of the world’s urban population, live in informal settlements, the majority of them in the developing world. Moreover, the locus of global poverty is moving to cities, a process now recognised as the ‘urbanisation of poverty’. Without concerted actions on the part of municipal authorities, national governments, civil society actors and the international community, the number of slum dwellers worldwide is projected to rise over the next 30 years to 2 billion (Moore, 2015). The last two decades has seen increasing global attention given to the need to tackle the emergence and growth of slums or informal settlements across the world’s cities. For instance, the second United Nations (UN) Conference in Istanbul, in June 1996 (Habitat II), which gave birth to the Istanbul Declaration on Human Settlements, marked a significant turning point, in the global policy discourse on the need to ensure “adequate shelter for all” (United Nations, 1996). This policy agenda was later given fresh impetus within the framework of the UN Millennium Development Goals (MDGs), which provides under Goal 7 Target 11, to significantly improve the lives of over 100million slum dwellers by the year 2020 (UN Habitat, 2003). In order to localise this global agenda, several countries across the developing world (for example Kenya, India, Brazil, Mexico etc.) have initiated national programmes on the upgrading of slums. It is along this same line, that the South African government, in 2004, revised its housing policy to include a comprehensive national programme, dedicated to the upgrading of informal settlements in the country. The slum upgrading initiative in South Africa, which is titled, the Upgrading of Informal Settlements Programme (UISP) forms the subject matter of this study. The paper focuses on the upgrading of urban slums, which are fast becoming a major human settlement challenge in the country due to the unprecedented rate of urbanisation in recent years (CIA, 2013).

3. Methodology
In pursuing and coming up with a result, the study followed a framework that is shown in table 1 which provided this paper a structure and a guideline to come up and to have a clear idea on how objectives were achieved.

© IEOM Society International 5771
Table 1: Research Matrix

<table>
<thead>
<tr>
<th>Specific objectives</th>
<th>Specific questions</th>
<th>Data collection tools</th>
<th>Target groups</th>
<th>Analysis and data presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To review the policies and legislative framework that inform the upgrading of</td>
<td>1. What are the policies and legislative framework that inform the upgrading of</td>
<td>Key informant interview Questionnaires</td>
<td>Municipal documents Internet Government documents, Journal articles on informal settlement upgrading</td>
<td>Diagram SPSS Excel</td>
</tr>
<tr>
<td>informal settlements in South Africa</td>
<td>informal settlements in South Africa?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. To examine the procedures and strategies that are employed by the City of</td>
<td>2. What are the procedures and strategies that are employed by the City of</td>
<td>Key informant interview Field Observations Checklist</td>
<td>Municipal documents Spatial maps Literature review Journal articles on informal settlement upgrading</td>
<td>Maps Picture Narrative Analysis Excel</td>
</tr>
<tr>
<td>Ekurhuleni in upgrading informal settlements</td>
<td>Ekurhuleni in upgrading informal settlements?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. To assess the stakeholder's roles and responsibilities in upgrading informal</td>
<td>3. What are the stakeholder’s roles and responsibilities in upgrading informal</td>
<td>Key informant interview Questionnaires</td>
<td>Municipal documents</td>
<td>Framework analysis Content analysis</td>
</tr>
<tr>
<td>settlements the City of Ekurhuleni</td>
<td>settlements the City of Ekurhuleni</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. To formulate a framework for the upgrading of informal settlements in the City</td>
<td>4. Is there a possibility of formulating a framework for the upgrading of informal</td>
<td>Key informant interview Questionnaires</td>
<td>Municipal documents Literature review Journal articles on informal settlement upgrading</td>
<td>Framework analysis Content analysis</td>
</tr>
<tr>
<td>of Ekurhuleni</td>
<td>settlements in the City of Ekurhuleni</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.1. Data Collection

This study focused on exploring the approaches and strategies of upgrading informal settlements: learning from policy and practice in the City of Ekurhuleni. Both primary and secondary data were collected as shown in Figure 1 to provide theory and practice and to extend the debates, discourses and improving the upgrading of informal settlements.

![Figure 1: Methods of data collection](image)

As shown in Figure 1 above, primary data information was collected using interviews, questionnaires and observations. The questionnaires used closed and open-ended systems, so that the respondents would be able to express themselves objectively and not be limited through closed questionnaire (Brace, 2018).

3.1.1. Primary sources of data

Primary data denotes to field data, “a new and for the first time and consequently occur to be original in character,” (Walliman, 2017). This data was collected using various instruments. Questionnaires were distributed within the planning officials in the department of town and regional planning, and policy implementers within the city, and experience surveys were conducted. Due to Covid-19, only visually interviews were conducted as a result more questionnaires were distributed to relevant officials.

3.1.2. Questionnaires

In this study, only officials/NGOs working on Informal settlements upgrading were systematically/Purposeful selected to respond to the questionnaire. The researcher ensured that respondents were 18 years or more, in order to ensure that responses were authentic and valid. The responses were captured on the questionnaires provided, which were designed in a format that would allow the researcher to obtain correct data. These were administered and distributed to city officials and NGOs or CBOs working on informal settlements in the City of Ekurhuleni. This was personally administered to ensure that the questions were correctly answered and returned directly to the researcher. A total of 47 questionnaires were administered and distributed (Figure 2) to the city officials as well as NGOs/CBOs in the city.

Table 2 illustrates specific areas where the questionnaires were distributed to the housing officials and NGOs.

<table>
<thead>
<tr>
<th>City of Ekurhuleni</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locality</td>
</tr>
<tr>
<td>---------</td>
</tr>
</tbody>
</table>

© IEOM Society International 5773
### 3.1.3. Field observations

In this study, site investigation and visual evaluation of interim services provided in the informal settlements were conducted through observations, and photographs were captured for record purpose and formed part of the dissertation findings. Observations included assessing the usage of municipal services provided such as road infrastructure, solid-waste removal, electricity supply, access to water and sanitation. An assessment form was designed in order to capture observable physical characteristics of the existing settlements, and this allowed the researcher to evaluate whether the provision of engineering services had allowed households in the informal settlements to meet their housing needs incrementally.

### 3.1.4. Photographic survey

Photographic surveys were conducted. The researcher visited the city of Ekurhuleni and the neighboring communities upgraded informal settlements and took photographs of existing land uses and activities. When photos were taken, the researcher frequently used the photos straight as data to be analysed. Depending on the theoretic background of the researcher, the photos could be analysed according to the principles of discourse analysis or be content analysed (Hartel and Thomson, 2011). Bateson and Mead (1942) came up with a concept of using photographs as the primary data to create a more ‘precise’ explanation. That is, the use of visual materials aids researchers in creating the basis for a different analysis of existing experience.

### 3.1.5. Secondary sources of data

According to Johnston (2017), this involves the use of data that has been collected by others, although it may not necessarily have been analysed or published. Secondary ‘sources of data were utilised in this research in order to gather the required information and address the research problem. Sources of data included the use of academic research papers, internet, books, international and national literature, theses and journals obtained from the University of Johannesburg (UJ). Additional data was collected from the internet in order to ascertain international experience in the field of study. The sources provided insight into the theories and approaches and explained in greater detail the role of the state in housing provision nationally and internationally. The sources also provided insight into the upgrade of informal settlements and whether such provision stimulates the creation of sustainable human settlements.

### 4. Findings and Discussions

The South Africa government with its housing policy aims to create an enabling environment that provides housing opportunities for poor households residing in informal settlements. The ISUP contained in the Housing Code of 2009 enables governments to stimulate housing developments by facilitating structured in situ upgrading in order to achieve land and housing tenure security for informal settlements. This is achieved by formalising the tenure rights of informal settlement dwellers and ensuring secure living conditions by facilitating the provision of sustainable basic municipal engineering infrastructure (Department of Housing, 2009). The purpose of this part is to provide a summary of findings, conclusions and recommendations of the study. The research questions and sub-questions are revisited and placed within specific themes in order to make informed conclusions which will serve as a guide to evaluate findings of the study.

#### 4.1. Graphical Data presentation

Below graphical presentative summarise response to objective 2: To examine the procedures and strategies that are employed by the City of Ekurhuleni in upgrading informal settlements.

<table>
<thead>
<tr>
<th>City of Ekurhuleni</th>
<th>Number of questionnaires distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Settlements Department</td>
<td>20</td>
</tr>
<tr>
<td>City Planning Department</td>
<td>23</td>
</tr>
<tr>
<td>NGOs/CBOs</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>47</strong></td>
</tr>
</tbody>
</table>

Source: Author, (2020).

Figure 2: The Upgrading of Informal Settlements Program to address the problem of informality in the City of Ekurhuleni

The above Figure 2 shows that 95% of officials agree that the Upgrading of Informal Settlements Programme is a suitable and relevant intervention to address the problem of informality in the City of Ekurhuleni. A total of 5% do not believe that the Upgrading of Informal Settlements Programme is suitable and relevant to address the problem of informality due to its long processes, while informal settlements keep on increasing. Furthermore, it is important to note that the Programme is not implemented only in Ekurhuleni, but in other cities.

Source; Author, 2020

Figure 3: Implementation of the programme
The above illustration shows that 60% of the City officials believes that the plan is not followed as designed, due to lack of funding. Allowances must be made, as very often issues like funding, lack of land, etc have a negative impact. A total of 80% believe that the City has clear programme implementation plans however, it does not happen as fast and as efficiently as one would like. The other 20% believe that the city does not have a clear programme implementation plan. Furthermore, 65% of the city officials said that the programme is implemented as designed; however, the other 35% feel that it is not implemented as designed due to a lack of funding and budget cuts.

The above figure 4 graph shows that 85% of the people being interviewed believe that the upgraded settlements meet the needs of the residents furthermore, the findings revealed that the informal settlements upgrade strategy is a good tool in speeding up economic and social development activities at the local level. It also generates a balance in socio-economic development in the area where it is located; it remains to be an effective and applicable approach that has continually been applied for micro level planning in both international and local communities.

Below illustration (Figure 5) figure demonstrate how Objective 3 of the paper has been achieved: To assess the stakeholder’s roles and responsibilities in upgrading informal settlements the City of Ekurhuleni

Source; Author, 2020.

Figure 4: Upgraded settlements if meets the needs of the residents

The above figure 4 graph shows that 85% of the people being interviewed believe that the upgraded settlements meet the needs of the residents furthermore, the findings revealed that the informal settlements upgrade strategy is a good tool in speeding up economic and social development activities at the local level. It also generates a balance in socio-economic development in the area where it is located; it remains to be an effective and applicable approach that has continually been applied for micro level planning in both international and local communities.

Below illustration (Figure 5) figure demonstrate how Objective 3 of the paper has been achieved: To assess the stakeholder’s roles and responsibilities in upgrading informal settlements the City of Ekurhuleni
4.2. Field Observation Data presentation

Over the years it has become apparent that the growth of the informal settlements clearly outstrips the delivery. At the current rate, the informal settlements will not be formalised in the near future. This is the reason why the provision of basic services has been given to all informal settlements, so that UISP will continue as resources become available. The Plates below (Figure 6 and Figure 7) give examples of settlements in the City of Ekurhuleni before and after the upgrades:

Source: Author site visit, (2016).

Figure 6: Demonstration of informal settlements before upgrade

Source: Author site visit, (2016).
The above pictures were taken in the field before the upgrading, where power cables were supported by an unbalanced rod, which posed a dangerous fire hazard for the community. Furthermore, pictures after improvements demonstrate that conditions within the settlements fostered social interactions by making them more viable and accessible. The department of Human Settlements has therefore tried to improve the living conditions of informal settlements within Ekurhuleni informal settlements. Upgrading seems like a strategy to improve services in the informal settlements, without disruption of social and economic networks which happens when people are evicted or relocated.

4.3. Policy and legislative framework data presentation
To reach to objective 1: to review the policies and legislative framework that inform the upgrading of informal settlements in South Africa below table summarise the results obtained.

<table>
<thead>
<tr>
<th>Specific research question</th>
<th>Policies and legislative framework</th>
<th>Sphere of government</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the policies and legislative framework that inform the upgrading of informal settlements in South Africa?</td>
<td>The Constitution of the Republic of South Africa</td>
<td>National Sphere of Government</td>
</tr>
<tr>
<td></td>
<td>The Breaking New Ground (BNG) development plan of 2004</td>
<td>National Sphere of Government</td>
</tr>
<tr>
<td></td>
<td>The Upgrading of Informal Settlements Program</td>
<td>Provincial sphere of Government</td>
</tr>
<tr>
<td></td>
<td>The Municipal Systems Act 32 of 2000</td>
<td>Local sphere of Government</td>
</tr>
<tr>
<td></td>
<td>Integrated Development Planning (IDP)</td>
<td>Local sphere of Government</td>
</tr>
</tbody>
</table>


Findings showed that the problem of delivering housing in South Africa is attributed to land problems, lack of resources and the poor capacity to enforce policies. According to Thellane (2008), this includes a lack of
affordability of well-located land for low-cost housing. The considerable pressure on housing problems has resulted in a number of housing legislation, policies and programmatic interventions in municipalities of which the city of Ekurhuleni is one. The housing problem in Ekurhuleni is most apparent in terms of the proportion of households residing in informal settlements. When the country became a democratic state, the new government’s focus shifted to improved service delivery through the introduction of Integrated Development Plans (IDPs) to enable local government to deal with service delivery programmes. This is based on Section 26 of the Constitution of the Republic of South Africa, which mandates the State to adopt reasonable legislative and other measures within its available resources to achieve the progressive realisation of the right to adequate housing.

In general, while the findings pinpoint the existence of comprehensive national legislative and policy frameworks in support of the slum upgrading initiatives, the evidence suggests that the goal of slum eradication still has several problems and challenges. The study found an apparent gap between the policy rhetoric, and the reality of implementation, which is characterised by notable inconsistencies, tensions, and problems. These have so far hindered the programme’s ability to make realistic improvements in the lives of slum dwellers.

The RDP housing program has focused on the lowest and most disadvantaged households (Gorgens, and van Donk, 2012). It planned to resolve the issues of poverty and gross injustice that are visible in almost every area of South Africa. This programme was not implemented successfully in COE due several complaints about the quality of houses and stand size, and political expectations to mention only a few issues. In addressing the RDP challenges, the BNG was introduced in 2004 by Department of Human settlements. The BNG promoted collaboration between the government and the private sector, in particular with regard to the provision of housing financing and an improvement in the building ability of historically disadvantaged communities (Department of Housing, 2004).

Despite the implementation of the policies mentioned above (COE-SOCA, 2020), the gap of housing shortages and backlogs continues to grow. Therefore, to address the said challenges, the city has introduced the Re-blocking of informal settlements program as an intervention, since local government is known to be influential in fostering the general well-being of citizens through the collective organisation of communities (Marx, 2003).

4.4. Proposed Improvements

The local municipalities such as Ekurhuleni are responsible of service delivery, job creation and implementing projects. Ekurhuleni municipality has to ensure that people are staying and working in an environment that is attractive, clean and healthy, yet the budget they receive is not enough to provide for the demanding population. The municipality needs to petition for financial support from appropriate institutions and agencies to ensure that the informal settlements are provided with adequate infrastructures and service delivery.

Government intervention is needed through the Department of Human Settlements, working in conjunction with non-governmental and community-based organisations to deliver both adequate housing and poverty-alleviation assistance such as helping residents with skills development. Informal settlement residents are still suffering after 26 years of democracy; therefore, poor people must be included in policy formation so that their needs can be heard. The Department of Human Settlement needs to communicate with the community to identify and target the problems that the residents experience in order to ensure that poor people live adequately with access to basic services. The underlying governance challenges deserve to be looked at with urgency and commitment by policy makers. These include the partial adherence to the principles of in situ upgrading, nominal or lack of community involvement in the upgrading process, and the lack of clarity in the criteria for including settlements in municipal Integrated Development Plans (IDPs). As the chapter 3, literature review of this paper has revealed, many programs and planning policies have been put in place to create sustainable development within housing and improve informal settlements, but there are still social and economic issues associated with informal settlements. The Department of Human Settlement must therefore create a welcoming environment for NGOs and CBOs to intervene where appropriate on issues of inadequate housing and access to basic services. Non-government organisations need to arrange meetings with the community where they can discuss issues concerning the inadequacy of informal settlements and find solutions to improve their well-being. CBOs and NGOs need to work in conjunction with the municipality to meet community’s needs.

5. Conclusions and Recommendations

Challenges exist regarding the informal settlements strategies and approaches to sustainable development process from policy implementation at the local government sphere. These show that policy doesn’t automatically lead to successful implementation, but amended skills levels are needed, and funding shortages need to be resolved. In
spite of the clear legislative and policy guidelines on the Upgrading of Informal Settlements Programme (UISP) in South Africa, the implementation process is often marked by contradictions and inconsistencies. There is a gap on the one hand, between the legally prescribed indirect approach which seeks to address the structural causes of slum formation, and the political rhetoric, which endorses direct and sometimes repressive approaches to get rid of informal settlements. The researcher argues that housing policies should reflect the impacts of development on informal settlements. South Africa can learn from international case studies on the in-situ upgrading of informal settlements which have been cited in this dissertation. Not much has been done to address these challenges associated with informal settlements, however the conclusion gives guidelines on what can be done to address the prevailing challenges. The conclusion of this chapter sums up all necessary guidelines that can assist the study to achieve its objectives. Even though the three spheres of government work together for the general wellbeing of the people, there is still a gap between the ways these operate.

REFERENCES


Bhattacherjee, A. Social Science Research: Principles, Methods, and Practices. USF Tampa Bay Open Access Textbooks Collection, 2012.


Department of Housing, the National Housing Code, Department of Housing, Pretoria, 2009


**Biography**

**Trynos Gumbo** is currently a Senior Lecturer and Head of the Department of Town and Regional Planning within the Faculty of Engineering and the Built Environment in the University of Johannesburg (UJ). He holds a PhD from Stellenbosch University, South Africa as well as masters and honours degrees from the University of Zimbabwe (UZ), Zimbabwe. He has previously worked in the Africa Institute of South Africa of the Human Sciences Research Council as a research specialist and Acting Manager for the sustainable development programme. Dr Gumbo has also worked as an international instructor in the urban management master’s programme within the Ethiopian Civil Service University College (ECSUC) in Addis Ababa in Ethiopia. Before, he had worked as lecturer and Head of Department at the National University of Science and Technology (NUST) in Zimbabwe. Dr Gumbo has attended and presented at several national and international conferences and has published widely on urban development and management. His research interests include urban transportation planning and management, sustainable and smart cities development, housing and economic informality, green economy and renewable energy generation from waste and innovative building technologies and materials. Dr Gumbo has received a Thuthuka funding grant of about R 614 000 for the purposes of supporting and improving my research publications on integrated transport planning and prepare myself for NRF rating. A South Africa and Chinese joint funding was also co-generated to the tune of about R 1 500 000 in 2017 with the assistance of fellow staff members within the department. Through the Centre for Applied Research in the Built Environment (CARINBE), he has also been actively involved in research projects for the Council of the Built Environment, thus assisting towards the generation of funds that amount to about R1 000 000. The projects range from evaluation of existing projects that were implemented by the Council for the Built Environment (CBE), to the development of strategies for the transformation of the built environment professions as well as investigating the state of skills availability and shortages on infrastructure and curriculum redesigning and adjustments to meet the needs of the industry.

**Lungani Makhaye** Development Planner at the city of Ekurhuleni, and Masters Student in sustainable development planning in the University of Johannesburg, he earned Baccalaureus Technologiae (B.TECH) and urban sustainability in Town and Regional Planning from University of Johannesburg, a member of SACPLAN C/9015/2019. He joined the University of Johannesburg in 2014 to do undergraduate studies in Town and Regional Planning.

**Erich Makoni** is a PhD Senior Lecturer at the University of Johannesburg he joined the department in July, 2012. Eric holds a MSc. (Development Planning) and BA (Political Science and Media Studies) degrees from the University of the Witwatersrand, Johannesburg. Between 2006 and 2012, he worked as a development planner and consultant in the public sector, focusing on intergovernmental development planning processes, intergovernmental relations (IGR) and local economic development. Eric continues to advise municipalities, provinces and national departments on the formulation, alignment, implementation and review of intergovernmental planning instruments; i.e. Integrated Development Plans (IDPs), Provincial Growth/Spatial Development Strategies (PG/SDS), and the National Development Plan (NDP). Recently, Eric has provided research support to the National Planning Commission (NPC) in its formulation of the National Development Plan (NDP). His research interests include: African Urbanism, Urban Planning Theory, Intergovernmental Planning Processes, Race, Space and Urban violence, Decolonial and Post-Colonial thinking.

**Nischolus Pillay** is a Lecturer and Academic at the Department of Town and Regional Planning at the University of Johannesburg. Nischolus started his Academic career in 2007 at the Durban University of Technology, where he
Nischolan gained a National Diploma in Architectural Technology, after completion in 2009 he furthered his studies at the University of Kwa-Zulu Natal for a Bachelor of Architectural Studies and completed the degree in 2011. He then completed a one year internship thereafter returning in 2013 to the University of Kwa-Zulu Natal for a Master of Architecture Degree, which he completed in 2013, being in the top 5 in his class. Nischolan received an award, the Corobrik Student of the Year: Best use of Clay Bricks for his final thesis design. After completion of his studies, Nischolan gained experience in practice and registered as a Professional Architect in 2016. In 2017, Nischolan joined the University of Johannesburg's, Department of Town and Regional Planning, where he currently lectures courses in Drawing, Architectural Design, 2D and 3D CAD.

Nischolan's expertise are in Architectural Design, Building Information Modelling and Construction Technology. Further to his teaching and learning activities, Nischolan is an active researcher and has produced a large amount of conference articles in his time at the University and constantly aims for more publications each year. He has travelled to Singapore, Belgium, Hungary and Australia to present on various research topics.