2016 National Human Settlements Conference Proceedings

Editorial Committee | *Prof Amira Osman | Prof Sijekula Mbanga | Mr Brendan Boyce | Prof Brink Botha*

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Address by the Minister for Human Settlements

LN Sisulu, MP

Minister for Human Settlements during the National Human Settlements Conference 2016 , 6 October 2016, Nelson Mandela Metropolitan University, Port Elizabeth 6031, Republic of South Africa.

The Eastern Cape Premier, Mr Phumulo Masualle, Members of the Executive Councils for Human Settlements, the Executive Mayor of the Nelson Mandela Metro, Mr Athol Trollip, Dr Sibongile Muthwa, Acting Vice-Chancellor of the Nelson Mandela Metropolitan University, Mayors and Councilors present, Senior Government Officials, International Guests, Ladies and Gentlemen. All protocol observed.

As we gather here today, the higher education landscape in South Africa is the subject of much animated and concerned discussion, debate and mobilisation. This conference takes place at a time of the heightened struggles of students for free education. Most institutions of higher learning have been closed for two weeks now, and a recently held education Imbizo has emerged with proposals for a solution. The role of the private sector has been solicited in the endeavour to find a lasting solution. These events have impressed upon us the importance of access to higher education opportunities.

As the debate rages on, we would like to borrow from our own experience, some of the concepts that we in human settlements have adopted in order to deal with our housing matters. These are the concept of:

▪ Qualifying criteria

▪ Progressive realisation of a goal

▪ Respect for the rights of others

It is necessary for me to contextualize this conference against the backdrop of education because we are gathered here in the pursuit of knowledge. The determination to professionalise this sector was sown at about the time we ourselves were busy with reconceptualising our own position in 2004, shifting our paradigm from housing to integrated settlements. We struggled to find the academic support to take us to where we needed to be. We were carried through by the town planning discipline which, as you will know, was not human settlements. But as we forged ahead, we found that it was necessary that we create this new discipline if we are to sustain ourselves and grow.

We sold this new idea to several universities, and I will never know what was more attractive: the idea itself or the money that it brought with it. Whatever it was, we are the winners in these partnerships. With a view to creating and strengthening our professional crop of staff in the housing sector, we have partnered with various universities with the view to produce these professionals. The Nelson Mandela Metropolitan University has produced a four year curriculum in the field of Human Settlement Studies. The university will also host the Chair for Human Settlements in the discipline of Education. The University of Fort Hare established a new Bachelor of Social Science in Human Settlement for the first time in 2015. The University of Witwatersrand is offering a course that will lead to a Master of Built Environment degree. The Human Settlement Post Graduate Certificate that is offered at Wits is accredited at NQF Level 7. This course has been enrolled by 350 officials from all three spheres of government.

The University of South Africa is offering a degree of Bachelor of Human Settlement in Public Administration. The method of tuition in the course is distance learning that will entail online learning. This course has the capacity to train about 1 000 officials who started in January 2016. The University of Stellenbosch is offering a Human Settlement Post Graduate Diploma which is pitched at SAQO level 8. The Mangosuthu University of Technology established a Research Chair that is promoting research in the housing studies.

At these universities our pioneering new discipline, we hope, will create a cadre of globally competitive, socially conscious, technically competent and knowledgeable graduates to help us address the complex challenges that will continue to face us for the better part of this century. These degree programmes must therefore continue to be supported so that the art and science of human settlements education is proliferated in a consistent academically taught body of knowledge

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with consistency of standards being paramount.

The global crisis on housing continues with the issue of shortage of housing, especially affordable housing, seeming to have been the main platform on which election of the Mayor of London was contested in 2016.

That London, being one of the oldest cities in the modern world, is still in the grip of a housing crisis and when considering that housing remains a global crisis, then you will understand the enormity of the problem still ahead of us. And the need for well thought through solutions, scientifically tested and executed by competent people.

However, on a global scale, the African continent is very determined to find solutions specific to them. This is the reason that we as South Africa hosted the Habitat III Thematic Meeting on Informal Settlements in April 2016 to consolidate the African solution, specifically for informal shelter, to ensure that the world does not lose focus on our specific problem. We adopted the Pretoria Declaration and we need the intellectual rigour that we find at universities to test and research our position.

The degree programmes must therefore be supported in their interdisciplinary approach so that the art and science of Human Settlements education is proliferated as a consistent academic body of knowledge. It is through these institutions that we will continue to refine our thinking and infuse new thinking into an otherwise rigid public service. Doing the same thing day in and day out is the surest way of killing creativity and innovation. These short courses offered by some of our partner universities will help us ensure that our methods and solutions are continuously sharpened.

This is where, together with the

CSIR and in collaboration with other departments, we can find solutions to our problems around the, for instance, escalating costs of building, using traditional methods. This will be where we can test the viability of our catalytic projects methods, conduct studies of new methods of dealing with old problems of how do we plan for an increasingly urbanising future. The list of possibilities is endless. We would also want to ensure that anyone wishing to do their postgraduate studies in Human Settlements can find a home here. Perhaps even invite visiting scholars to share ideas.

A few years ago a colleague of mine with whom I served on the UN Eminent Persons Panel, The Commission on Legal Empowerment of the Poor, Hernando De Soto, came to South Africa as a visiting scholar and because his ideas were so unorthodox for South African scholarship, he was not warmly received, and he went away somewhat deflated. Today he will find a place to discuss his ideas, however violently we may disagree with them. He can only leave us richer for having debated them.

The possibilities are endless and I look forward to a time when South Africa can be an oasis of knowledge in this sector. I may go on to brag at this point that we are indeed at the cutting edge of this area in the developing world. We have played a leading role in the crafting of the African Position for Habitat III and we regard ourselves as thought leaders in this area. But what do we do with all that knowledge? Now we can stop wondering. We have institutions of higher learning to impart that knowledge to.

I was invited some years ago to India as chairperson of the Fund for the International Slum Dwellers, an organisation I have great admiration for. And I would sit and chair this organisation of Slum Dwellers and be amazed at the depth of analysis

and understanding, supported by serious intellectual rigor, and I knew with every passing hour that I would need to sharpen my own analysis and understanding because I literally drowned in the depth of knowledge of the slum dwellers.

This inaugural 2016 National Human Settlements Conference represents another step forward in our journey to professionalise and elevate the human settlements research, education and practice. The Conference theme is an interdisciplinary effort that is investigating antecedents for transformation towards sustainable and environmentally-friendly cities and neighbourhoods. It straddles across the social, economic, built and natural environments, calling for immediate action by all role-players in providing tangible solutions to pressing questions that face all government spheres, cities and neighbourhoods.

The Conference will, also, explore research capacity opportunities that remain untapped. These include the local and international resources for augmenting institutional research capacity that requires collaboration across and between sectors and countries.

This Conference is therefore expected to:

1. Generate pragmatic solutions to challenges facing human settlements in both urban and rural settings.

2. Demonstrate best practice science, technology and building innovations to expedite housing delivery and sustainable human settlements development.

3. Consolidate the key priority research areas for the human settlements sector that should be pursued by all the role-players.

4. Foster inter-sectoral and inter-disciplinary strategic partner-

ships in pursuit of sustainable human settlements development across all scales.

This Conference therefore is intended to be a catalyst in the realisation of the country's ambitious vision of the development of a capable state. In this respect, the capacity of the state will require to be enhanced at individual, institutional and intra-organizational level. This is central to the efficient functioning of the state.

The need to radically scale up and augment the existing capacity of the sector is without question a common focus for partners and stakeholders of the sector. Much of the capacity challenges in South Africa relate to historical underinvestment in education, the lasting impact which the apartheid education has had on the education and economic landscape; and challenges throughout the skills pipeline. It is vital that these challenges are confronted and overcome in the short to medium term. The implications of the current substantial shortage of skilled professionals in the built environment and human settlements sector will severely impede South Africa's ability to plan and deliver infrastructure which will in turn have a constraining influence on economic performance.

The big question that therefore confronts stakeholders active in the human settlements space in South Africa is how do we go about strengthening capacity at a sector wide level? How are these initiatives to be implemented and what role can universities play?

Historically and currently universities play a vital role in any country's development. Universities are key institutions or engines of skills, capacity and knowledge generation.

The change from Housing to Human Settlements demands a systemic response by all actors involved in the sector. The current state of play in South Africa is to

ensure processes are in place to support professionalisation, and that these culminate in the passing of legislation governing and regulating human settlements practice in the country.

Thus, there is also the need to establish professional standards that are globally benchmarked and that have the potential to introduce uniformity in business practices and with it increased investor confidence. This will require the training of professionals to these standards across the range of built environment professions, providing huge potential in Africa in terms of conducting training courses, maintaining and standardizing quality and norms. The academic sector has a crucial role to play in the formal training of students and professionals, as well as increasing the attractiveness of and hence the numbers of professionals involved in the industry. In this regard, there is vast opportunity for the private sector to work alongside academic institutions to ensure that students are being trained to the latest standards and receive mentorship or internship opportunities.

There is a general lack of sufficiently trained and appropriately skilled professionals operating at full capacity in the sector. This is supported by a recent survey that was conducted by the Nelson Mandela Metropolitan University on behalf of my Department, which reveals that there is a serious need for structured Continued Professional Development through short courses. The Department remains committed to facilitating a framework to create opportunities, incentives and rewards for those professionals who attain predefined professional standards.

It is imperative that our end goal is to establish a locally adapted professionalisation process which is interlinked, integrated and harmonised with efforts at attaining

regional and globally benchmarked business practices. Not only will this raise and unify standards, it will increase prestige, mobility and status of human settlements practitioners. This will in turn have the effect of boosting consumer and investor confidence in the state and its functionaries operating in the human settlements sector.

Crucial to any process of meaningful social and economic change is the issue of the scientific basis for action. This refers to the systems of data collection, research methods, techniques of data analysis and dissemination of these results to a wide range of audiences (including audience of peers for scientific review and critique).

This Conference is responding in a practical and meaningful way to the current need for further research into sustainable human settlements development and management.

The selection and configuration of themes and sub-themes all operationalise a multi and trans-disciplinary research agenda. This approach provides opportunities to a number of academic Departments and disciplines to contribute to the creation of knowledge.

This operationalises a core element of the Department of Human Settlements' four-pronged capacity enhancement strategy.

The main elements include:

1. Focused multidisciplinary education in the area of human settlements education

2. Development of a trans disciplinary Research Agenda which responds with an evidence based approach to challenges facing the human settlement sector in South Africa

3. Development of a menu of short courses to support Continued Professional Development of especially mid-career professionals.

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4. Codification and development of the body of knowledge relevant to Human Settlements Development and Management.

To the Nelson Mandela Metropolitan University, thank you for agreeing to this partnership. I offer my service one week of every semester to lecture here at no cost to the University. This will help me to think through some of the impediments as scholarship meets practitionership.

To the delegates, may your deliberations be fruitful. May you feel that you have enriched your knowledge at the end of the Conference. For those engaged in government activities, I wish you come back more energised to tackle the problems we face. To our funders, especially the Nelson Mandela Metro, from where I stand, your invaluable support is an extremely worthwhile investment.

I wish you all a successful inaugural 2016 National Human Settlements Conference. I thank you. ■

Preface

Prof Sijekula Mbanga, PhD
Chair for Education in Human Settlements Development , Nelson Mandela Metropolitan University, Port Elizabeth 6031, Republic of South Africa.

The National Department of Human Settlements, in collaboration with the Nelson Mandela Metropolitan University, the Department of Science and Technology, the Nelson Mandela Bay Municipality, the Estate Agency Affairs Board, the National Home Builders Registration Council, the Housing Development Agency and the Eastern Cape Department of Human Settlements have successfully convened an inaugural 2016 National Human Settlements Conference from 5 – 7 October 2016 at The Boardwalk Conference Centre, Summerstrand, Port Elizabeth, South Africa.

The Conference has been positioned as a Scientific Conference which has attracted some 650 senior leaders in government, human settlements practitioners, business, academics, students, industry experts and key opinion makers from Non-Governmental Organisations. The Conference has been structured in an engaging format offering key role-players a platform to exhibit their work, launch innovative products, host breakaway sessions and share their innovative solutions to housing and human settlement challenges in a wide range of participants.

Furthermore, the Conference has been driven by a formal academic content which has been quality-controlled through a rigorous double blind peer review of abstracts and full conference papers, by a carefully selected Scientific Committee that is comprised of seasoned academics and industry experts. Of importance to recognise has been the contribution of academics from various institutions of higher learning in South Africa such as University of Johannesburg, Witwatersrand University, University of the Western Cape, Central University of Technology, Durban University of Technology, University of KwaZulu-Natal and Mangosuthu University of Technology. In addition, the Potsdam University in Germany, State University of Minnesota in the USA, University of Ibadan, University of Lagos and the Polytechnic University in Nigeria have participated in the scientific process of the Conference.

The 2016 National Human Settlements Conference has been convened under the Theme 'Sustainable Future Cities and Human Settlements Begin Today.' This Theme is an inter-disciplinary effort that investigates antecedents for transformation towards sustainable and environmentally-friendly cities and human settlements. The Theme invites immediate action by all role-players in providing tangible solutions to pressing questions that confront South African cities, towns, villages and neighbourhoods. However, perspectives on new approaches should seek to strike a smooth balance between immediate interventions to human settlements challenges and attainment sustainable development goals across different scales and spaces. In the view of Conference Organisers it cannot be that solutions that are provided to address today human settlements and urban development challenges are a source of chaos and demise for the next generation. In essence, though this Conference, a call has been made for more sustainable solutions to human settlements and urban development challenges.

The Conference Theme has been broken down into seven focus areas that attracted plenary speeches and formal papers, as follows:

SUB-THEME 1:
Architecture and urbanism
(Outcome: An approach to planning and design in the Built Environment allowing for higher-level decision-making and project-level innovations).

SUB-THEME 2:
Human settlements planning, development and maintenance
(Outcome: Increasing efficiency, resilience and beauty of neighbourhoods).

SUB-THEME 3:
Sustainable livelihoods
(Outcome: Revitalising local economic development through housing delivery).

SUB-THEME 4:
Human settlements governance
(Outcome: Managing cities and neighbourhoods through appropriate policies and systems).

SUB-THEME 5:
Science and technology innovations for sustainable human settlements
(Outcome: Adaptation and mitiga-

tion strategies to climate change and poverty).

SUB-THEME 6:
Service delivery improvements and financing models
(Outcome: Changing culture, education practices, community engagement and financing options).

SUB-THEME 7:
Interdisciplinary and multisector approaches
(Outcome: Working across disciplines, professions and sectors for sustainable settlements).

SUB-THEME 8:
Property development, investment and management for sustainable neighbourhoods and cities
(Outcome: Just and equitable property ownership patterns and market behaviour supporting socio-economic transformation).

The Nelson Mandela Metropolitan University would like to extend a word of gratitude to the professionals who served in the Conference Steering Committee (that oversaw the overall conference planning and logistics), the Conference Content Committee (which monitored the inputs of various participants towards the realistion of the selected annual Conference Theme) and the Conference Scientific Committee (that led and managed the conference papers before and after the Conference). Indeed, special thanks go to Prof Amira Osman and Ms Rirhandzu Khoza of the University of Johannesburg who provided tremendous support in the post-Conference scientific process towards the publication of Conference Proceedings.

The inaugural 2016 National Human Settlements Conference has set a solid foundation for future human settlements conferences in South Africa that will draw academia and industry leaders under one roof to find sustainable solutions to pressing development challenges facing the country. ■

Foreword

Dr Phil Mjwara
Director-General of Science and Technology.

It was with excitement and enthusiasm that the Department of Science and Technology participated in the National Human Settlements Conference 2016. The forum gave us an opportunity to share our vision of the role science, technology and innovation (STI) could play in shaping the country to meet the demands of the modern technological age.

The theme of the conference, "Sustainable future cities and human settlements begin today", challenged us to reflect on options and discuss future scenarios for our evolving settlements and cities. The decision makers, planners, human settlements practitioners and researchers attending the conference will act as agents of change and chart new ways to achieve our goals.

The South African government adopted the National Development Plan (NDP), a long-term plan to reduce poverty and inequality by 2030, which recognises the crucial importance of STI in accelerating South Africa's socio-economic development. To make South Africa a more globally competitive economy, both government and industry need to scale up innovation radically.

The NDP acknowledges that advances in technological innovation, the production of new knowledge, research collaboration and the application of knowledge through teaching are vital for a thriving economy.

Similarly, the United Nations adopted the 2030 Agenda for Sustainable Development, titled "Transforming Our World", which also aims to improve the well-being of people. The 2030 Agenda, to which South Africa is a signatory, consists of 17 Sustainable Development Goals (SDGs) and 169 targets. SDG 11 is about making cities and human settlements inclusive, safe, resilient and sustainable.

Both nationally and internationally, there is an increasing recognition of the role of STI in human settlements.

By 2030, countries should substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, adaptation to climate change and resilience to disasters. These outcomes can be achieved only through smart approaches and the use of innovation in the developing human settlements.

The Department of Science and Technology envisages building a South Africa for the future through hubs of innovation. To enable the creation of innovative cities, neighbourhoods and smart human settlements, the Department established a unit for STI for sustainable human settlements. This directorate works in partnership with the national Department of Human Settlements to drive and deliver innovation for the sector. The work of the unit also requires collaboration with a number of public and private-sector stakeholders to support the demonstration of alternative and innovative building systems, water provision and purification technologies, alternative energy solutions and information communication technologies. The unit and its partners are also exploring decision-support tools to expedite the creation of more transformative, self-sustaining, liveable and carbon-neutral neighbourhoods and cities as well as improved service delivery across government in a manner that can support and stimulate economic growth.

With urban growth and the migration of people from rural areas to urban centres, cities have become the pillars for development and economic growth, and increasingly play a pivotal role in the world's achievement of the Sustainable Development Goals.

As we move forward, we need to be aware that sustainable human settlements will have to be digitally, physically and economically smart. They will have to deploy information communication technologies to stimulate citizen action and combat crime. They will have to transform energy infrastructure and employ carbon neutral construction methods. Innovative finance instruments will be needed to enable citizens and business to share assets and resources and create employment.∎

The peer review process

Because of the need to maintain and assure the quality of the conference proceedings, and to comply with the requirements for subsidy of the South African Department of Higher Education and training, a rigorous two-stage peer review process was conducted by two acknowledged experts.

In this context, each abstract received was twice blind reviewed in terms of:

- relevance to conference theme and objectives;
- originality of material;
- academic rigour;
- contribution to knowledge; and
- research methodology.

Authors whose abstracts were accepted after the stage one review process was completed were provided with anonymous reviewers' comments and requested to submit their full papers noting and addressing these comments. Evidence was required relative to the action taken by authors regarding the comments received. These resubmitted papers were double blind reviewed again in terms of:

- relevance to conference theme and objectives;
- originality of material;
- academic rigour;
- contribution to knowledge;
- research methodology and robustness of analysis of findings;
- empirical research findings; and
- critical current literature review.

Authors whose papers were accepted after this second review were provided with additional anonymous reviewers' comments and requested to submit their full revised papers. These papers were only included in the proceedings after evidence that reviewer comments were responded to. At no stage was any member of the scientific committee or the editors/editorial board involved in the review process of their own authored or co-authored papers.

The role of the editors was to ensure that the final papers incorporated the reviewers' comments and to arrange the final sequence as captured in the table of contents.

Of the 57 abstracts originally received, 26 full papers were submitted by the authors. Only 19 papers were accepted for inclusion in the proceedings, representing a rejection rate of 27%. While some papers were omitted at review phase, others were excluded during editing. This process was managed by Prof Amira Osman of the Tshwane University of Technology. Any inquiries may be directed to osmanaos@tut.ac.za. ■

Scientific committee

Pauline Adebayo

Dr. Pauline Adebayo holds a BA Land Economics (Hons) and an MA Housing Administration degree from the University of Nairobi, and a PhD in Town Planning from the University of KwaZulu-Natal. She is a senior lecturer in the University of KwaZulu-Natal's School of Built Environment and Development Studies. Her research interests include housing finance and housing policy analysis; urban integration and urban spatial restructuring in South Africa; asset value and value attribution of low income housing; and landlord tenant relationships and legislation. She also works as a housing consultant and serves on housing and physical development dispute-resolution bodies in KwaZulu-Natal Province. ■
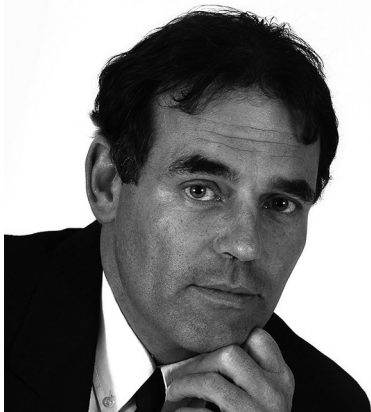
Chris Adendorff

Chris Adendorff is a Professor at the NMMU Business School and MD of various entrepreneurial ventures. He has been a business entrepreneur since 1985 and, along with his architect wife, Gillian, built up a family business to such a degree that they are currently active both nationally and internationally and both owner-manage their own family businesses. Prof. Adendorff holds two doctoral degrees, a PhD he obtained from Rhodes University and a Doctoral in Business Administration and Future Studies from NMMU. He also obtained an M.Commerce from Rhodes University in 2002, and an MPhil (cum laude) in Futures Studies from Stellenbosch University in 2010.

His further qualifications include a Certificate in Family Business Advising from Boston (USA) and an Advanced Diploma in Life Coaching obtained from the Institute for Life Coaching (UK). He has a passion for the management of family-owned businesses and in particular Futures Studies, Scenario and Strategic Planning, Future Governance and Turnaround Strategies. He also lectures and promotes Futures Studies, Family Businesses, Entrepreneurship, Small Business Management and Research Methodology at the NMMU Business School.

To date, Prof. Adendorff has written various books on Governance for Entrepreneurs and published over 100 articles in national and international journals on Family Business, Technological Entrepreneurship, Culture, Governance, Futures Studies, Strategic Management, Demographics, Systems Management and Turnaround Strategies. He further serves on the Editorial Boards of the International Journal of Social Entrepreneurship and Innovation (UK), the International Journal of Social Enterprise and Entrepreneurship (USA), as well as Interscience Publishers Ltd (UK).

Amongst other affiliations, Prof. Adendorff is a member of the Family Firm Institute (USA), a Fellow of FFI (USA), Family Business Network (UK), International Family Enterprise Research Association (IFERA), Development Consultants for Africa, Future Trends Network (USA), Future in Review (UN), Global Foresight (USA), International Association of Advisors in Philanthropy (USA), International Network of Socio-Eco Entrepreneurs (INSE), International Scenario, Future and Strategy Group (USA), Systems Thinking and Systems Dynamics Practitioners Global Network (USA), The Philosophy Network (UK), the world acclaimed Lifeboat Association (USA) and the World Future Society of South Africa. He also served as a committee member on various other non-profit organisations in South Africa, England and Greece. ■
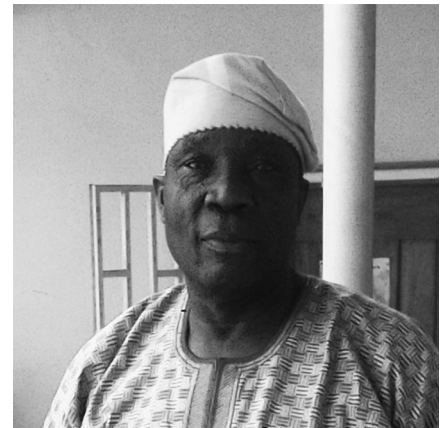
Babatunde Samuel Agbola

Professor Babatunde Samuel Agbola is an Urban and Regional Planner with life long interest in Human Settlement Development and how this has been affected by climate change. He holds a BSc Degree in Economics from the Ahmadu Bello University in Nigeria and an MCP, MA and PhD degrees from the University of Pennsylvania, Philadelphia. He was the Pioneer Director of Physical Planning at the University of Ibadan, Nigeria. He is currently the Chair of the Regional Committee for Africa (RCA) of the International Council for Science (ICSU). He was the immediate past Chair of the Association of African Planning Schools (AAPS), the Chair of the Nigerian Chapter of the Land Use, Land Cover Change Group of the International Geosphere-Biosphere Programme (IGBP). Prof Agbola was one of the Pioneer Members of what is today the Safer Cities Network of the UN-Habitat. He was a Visiting Professor of Planning at the University of Northern Iowa, Cedar Falls. He is the author of fifteen books, sixty four chapters in highly rated books published by reputable international publishers and over forty-six peer reviewed international and local journal articles. Most of these publications are in the area of Human Settlement Development and Management. ■

Clinton O. Aigbavboa

Prof. Aigbavboa Clinton, PhD, is an Associate Professor at the University of Johannesburg, South Africa. His research interests are situated in the fields of sustainable human development, with the focus on sustainable housing regeneration (urban renewal and informal housing), Life Cycle

Assessment in the Construction Industry, remanufacturing, leadership in low-income housing, Biomimicry, post occupancy evaluation and green job creation. ∎

Rosemary Awuor-Hayangah

Dr. Rosemary Awuor-Hayangah holds a Ph.D. in Planning (Wales) (UK); MA in Urban & Regional Planning and BSc. (1st Class Hons) Nairobi. She is a Professional Urban and Regional Planner with over 20 years experience in research and planning with skills in management; long term structure/strategic planning and place making. Dr. Hayangah has over 16 years experience teaching at university and supervision of research projects at both undergraduate and postgraduate levels. She is an experienced educator, trainer, leader and organizer. She has been project manager in a Web enabled GIS project and was in charge of IT training programme for staff members in a Town & Regional Planning Department. Dr. Hayangah is a former Head of School of Architecture, Planning and Housing and Senior Lecturer at the University of KwaZulu-Natal. She is currently a Technical Consultant with the Municipal Infrastructure Support Agent (MISA) ∎

Oke Emmanuel Ayodeji

Dr. Oke, Ayodeji Emmanuel is a Quantity Surveyor by training and a PhD holder in the same discipline. He bagged his B.Tech degree in Quantity Surveying from Federal University of Technology, Akure, Nigeria in 2006 with a first class (Hons.). He is a reviewer for various local and international reputable Journals. To his name and in collaboration with academia within and outside Nigeria, he has authored a good number of journal and conference papers both locally and internationally. He has supervised several students at undergraduate and postgraduate level. He has also won several awards, as well as training and fellowship grants. He is a Corporate member of Nigerian Institute of Quantity Surveyors, a registered Quantity Surveyor and a member of Nigerian Institute of Management. He is currently a Post-Doctoral Research Fellow at the Department of Construction Management and Quantity Surveying, University of Johannesburg, South Africa. He is also a Lecturer in Department of Quantity Surveying, Federal University of Technology, Akure, Nigeria. ∎

Brink Botha

Brink Botha is an Associate Professor in the Built Environment and Owner/Managing Director of various entrepreneurial ventures, primarily Built Environment and Real Estate related. Professor Botha shares a passion for property development, a niche discipline in which he is active both as academic and industry practitioner, but also as an entrepreneur, as well as Professional Consultant. He has been involved in Academia and the Built Environment for the past two decades since 1996 with vast experience in the related disciplines.

The author completed a National Diploma in Building (cum laude), two Baccalaureus degrees, respectively in Quantity Surveying and Construction Management (cum laude), an MSc in the Built Environment with specialization in Property Economics and Valuation, as well as a PhD with a thesis titled: "Property development: A Business Process Model".

Professor Botha is currently Head of the Construction Management Department at the Nelson Mandela Metropolitan University and Co-Director of the MSc Built Environment programme jointly hosted by two Built Environment departments. In this capacity, Professor Botha is actively involved in conducting, publishing and promoting Built Environment and Real Estate related research whilst being active in Industry in his capacity as professionally registered Construction Projects Manager with the South African Council for the Construction and Project Management Professions. He is amongst other fulfilling the function of Project Manager of the implementation of various Built Environment related Short Learning Programmes.

Professor Botha is also a Member of the Association of Construction Project

Managers, an Incorporate of the Chartered Institute of Building, a Member of the Ergonomic Society of South Africa and is serving on the respective Councils of the South African Property owners Association, as well as the Association of Schools of Construction of Southern Africa. Professor Botha is passionate about advanced teaching and learning methodology, mentoring and life coaching, as well as community renaissance, hence rendering various pro bono services whilst supporting related non-profitable organizations aligned to the collective objective. ∎

Zodwa Dlamini

Professor Zodwa Dlamini is the Deputy Vice Chancellor: Research, Innovation & Engagements. She also is a Professor of Translational Genomics and Molecular Medicine. Her research interests are the "omics" technologies including the use of bioinformatics to provide unprecedented possibilities to identify the underlying molecular basis of many common diseases including cancer, HIV/AIDS and diseases of lifestyle. She is from the North Coast, District of Mahlabatini, esigodini saseNqulawane, KwaZulu-Natal. Professor Dlamini obtained her BSc (Microbiology and Biochemistry) and BSc. Hons (Biochemistry) from the University of the Western Cape (UWC); MSc (Plant Biotechnology) and PhD (Molecular Medicine) from the University of Natal; Postdoctoral fellow (Functional Genomics) from UWC.

She then worked as a lecturer and a senior lecturer at the University of the Witwatersrand (Wits) and then briefly joined University of Limpopo (UL) as an Associate Professor in Biochemistry. She then joined UNISA as Deputy Executive Dean and full Professor. She holds other appointments as the Vice-Chairperson of the South African Medical Research Council Board. Professor Dlamini represents the Department of Health in the DST Scientific Advisory Committee on Preclinical Drug Development Platform and serves on the National Forensic Oversight and Ethics Board and as Chairperson for Finance and Risk Committee for the same Board. She serves on the Academy of Science of South Africa (ASSAf) Science, Technology, Engineering & Mathematics (STEM) Education Standing Committee. Professor Dlamini also serves on the DST National Genomin and Precision (personalised)

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Medicine Think Tank and she holds an appointment as an honorary research fellow and visiting Professor for the University of Bristol, School of Medical Sciences, UK. ∎

Fidelis Ifeanyi Emoh

Fidelis Ifeanyi Emoh, (Ph.D., M.Sc., B.Sc., MBA, FNIVS, RSV, MNIM), is the former Head of the Department of Estate Management, Nnamdi Azikiwe University, Awka, Nigeria. He has a Ph.D. (Estate Management) from Nnamdi Azikiwe University, Awka, Nigeria and an M.Sc. (Estate Management) from the University of Nigeria, Nsukka, as well as a Masters in Business Administration in Banking and Finance from Nnamdi Azikiwe University, Awka, Nigeria.

Emoh is a Fellow of the Nigerian Institute of Estate Surveyors and Valuers (FNIVS) and a Registered Estate Surveyor and Valuer. He is also a Member of the Nigerian Institute of Estate Surveyors and Valuers (ANIVS) and a Full Member of the Nigerian Institute of Management (MNIM) (Chartered).

He has extensive administrative experience and has made many contributions to society and in terms of academic leadership. He has over 30 published works in peer reviewed journals, locally and internationally and has published three standard professional books. He has received numerous rewards and recognition for his professional roles. ∎

Fidelis A. Emuze

Fidelis A. Emuze PhD, is Associate Professor and Head of the Department of Built Environment, and Head of the Unit for Lean Construction and Sustainability at the Central University of Technology, Free State, South Africa. Construction research in lean construction, health and safety, supply chain management, and sustainability constitutes the main research inter-

est of Dr Emuze, who is a member of the Association of Researchers in Construction Management and the Lean Construction Institute.

Affiliation: Central University of Technology, Free State, Bloemfontein, South Africa. ∎

Franco Geminiani

Dr. Franco Geminiani is a Senior Lecturer at the Nelson Mandela Metropolitan University (NMMU) in the School of the Built Environment, and currently the Head of Department of Building and Human Settlement Development. Dr. Geminiani completed his matric at Marist Brothers College Port Elizabeth in 1974, and later his military commitments in 1995/1996. He started off his career in 1977 as an Apprentice Carpenter with Murray and Roberts Construction (East Cape).

He later joined LTA construction in 1986 as a Contracts Manager and was involved in various projects in the Eastern Cape. He later joined the Port Elizabeth Technical College as a Lecturer in the Building Department, teaching Technical Vocational subjects related to the Built Environment. He was offered a post and joined the NMMU in 1990 as a Lecturer in the Department of Building, and was later appointed in 1998 as a Senior Lecturer in the former Department of Building and Quantity Surveying.

Dr. Geminiani has been with the NMMU for 27 years and actively involved with Teaching and Learning, Research activities, Industry related engagements, as well as related community activities. Many top successful students who have become CEOs, Directors, Entrepreneurs, etc. have passed through his hands of the past 27 years. He was appointed as HOD in 2012 in a managerial position up to the present time.

Dr. Geminiani obtained his National Diploma: Building in 1983, Higher National Diploma in 1984, as well as a Diploma: Higher Education (Technical) through UNISA. In 1989 obtained the Masters in Construction Management at the NMMU (former PE Technikon), and graduated in 1998 with a Doctorate in Technology in Construction Management at the NMMU, entitled "An Investigation of the Department of Labour Occupational Health and Safety Inspectorate Relative to Construction".

Dr. Geminiani is a Construction Manager by profession and is involved with various committees such as the South African Council for Project and Construction Management Professions (SACPCMP) on the Accreditation Panel, and a member of the Institute of Safety management (IoSM). He is also involved with the South African National Accreditation System (SANAS) as a technical expert relative to SANS 613 Fenestration Systems. He is also the Testing Officer for the Association of Architectural Aluminium Manufacturers (AAAMSA) relative to 'Window Testing' in the Eastern Cape.

Dr. Geminiani is also part of the Managerial Steering Committee NMMU / National Department of Human Settlements. ∎
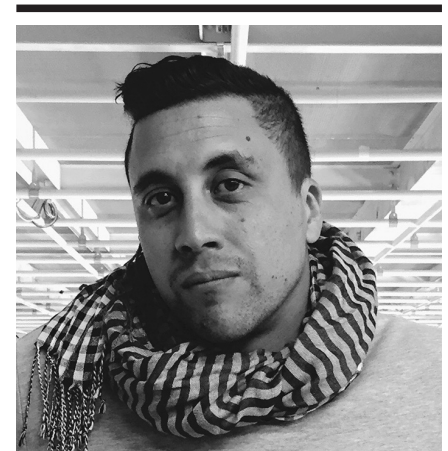
Denver Hendricks

Denver Hendricks is the Head of Department of Architecture at the University of Johannesburg. He is an active young 'black' researcher and a practising registered architect originally from Cape Town.

He studied architectural technology at the Cape Peninsula University of Technology (CPUT), before going on to complete his BArch at UCT, where he focused on housing and public infrastructure projects under the supervision of Jo Noero in his thesis year. He won both the Housing Development Agency and PG Bison Awards during his final year of studies.

He served on the voluntary bodies of the South African Black Technical and Allied Careers Organisation in the Western Cape and the Gauteng Institute of Architects (GIFA) on the Education Portfolio while he was employed in practices in Cape Town and Johannesburg as a senior and partner. He focused on both public and private architecture before specialising in public projects. He managed teams and offices on medium and large scale projects. He

co-directed Urbansoup Architects who designed a R350m transport orientated development for the City of Johannesburg. His work is noteworthy and reflective because critically publishes both public and conference papers of his work as a mode of practice. He presented a TED Talk on an energy efficiency homes and was invited to talk at tertiary intuitions in Leicester, New York and Port Elizabeth about his work.

He has written on themes of community design, socio-economic effects of apartheid spatial planning, design and education and decolonisation. His latest series of practicing and publication works includes extensive community design participation projects called My City Futures and the Melville Precinct Plan. He is currently completing a Masters in Urban Studies at the University of Witwatersrand and writing a proposal for his PHD around the themes of Brown People and the socio-economic impact of space production on the Cape Flats in Cape Town. ■

Marie Huchzermeyer
Prof. Marie Huchzermeyer is a Professor in the School of Architecture and Planning where she has convened the masters degree in housing over the past 15 years. Her research has focussed on comparative housing policy with a particular interest in informal settlements and unregulated private rental housing across the contexts of South Africa, Brazil and Kenya, and resulting in several books. ■

Kahilu Kajimo-Shakantu
Prof. Kahilu Kajimo-Shakantu holds a PhD in Construction Economics and Management from the University of Cape Town, a Masters in Property Studies and a BSc (hons) in Land Economy. She is currently the Head at the Department of Quantity Surveying and Construction Management at the University of the Free State. Kahilu has been involved in research and consultancy in the areas of procurement, human settlement and construction industry development. She is most passionate about their sustainability and has presented many papers at international and national conferences. ■

Geci Karuri-Sebina
*Dr. Geci Karuri-Sebina is Executive Manager for programmes at **South African Cities Network**, an urban research and learning network. Her interests span a range of development foresight, policy, planning and practice topics, particularly relating to urban governance, the built environment, innovation systems, and local development. She has two decades' experience working and publishing in these fields. Her most recent publication is the book **Innovation Africa** (Emerald Books, 2016).*

*Geci is a Council Member on the **South African Council of Planners**, and an*

*Associate Research Fellow of the **Institute for Economic Research on Innovation (IERI)** and the National Research **Foundation's South African Research Chair on Innovation and Development.** She is also a founding director of the **Southern African Node of the Millennium Project**, co-founder of **ForesightForDevelopment. org**, an Associate Editor for the **African Journal for Science, Technology, Innovation and Development** (Taylor & Francis), and Africa Regional Editor for **Foresight: The journal of future studies, strategic thinking and policy** (Emerald).*

Geci holds Master's degrees in Urban Planning and in Architecture & Urban Design, both from the University of California Los Angeles (UCLA), and a PhD from the University of Witwatersrand in Johannesburg (planning and innovation systems). She is also a Fellow of the Archbishop Tutu Leadership Programme (of the Africa Leadership Institute and University of Oxford) and an alumnus of the Urban Innovation Leadership Lab (of the Global Leadership Academy). ■

Prudence Khumalo
Prudence Khumalo is an Associate Professor in the department of Public Administration and Management at the University of South Africa. He has published on Public Policy and Development, Leadership, Environmental Governance, Poverty and Local Economic Development. He has presented papers at both local and international conferences. Prudence currently serves as the chair for the research committee in the department of Public Administration, as well as a committee member of the Human Settlements Cluster in the same department.

Prudence holds a Doctorate Degree in Public Administration, University of Fort Hare 2011, Master of Public Administra-

tion, University of Fort Hare 2009, and a Bsc Honours in Human Resource Management, Midlands State University 2005. He had a stint with the University of Fort Hare as a Postdoctoral Fellow in 2011 and later on joined UNISA in a similar capacity under the Poverty Alleviation Field within the Department of Development Studies in the College of Human Sciences prior to assuming his current position. Prudence has also worked as a Human Resource Practitioner for Dunlop Tyres, a position he held till 2007 and resigned from it to pursue further studies. ∎

Taibat Lawanson

Taibat Lawanson is an Associate Professor in the Department of Urban and Regional Planning at the University of Lagos, Nigeria. She holds a PhD in Urban and Regional Planning from the Federal University of Technology, Akure, Nigeria. She has conducted extensive research on issues relating to urban informality, livability, environmental justice and pro-poor development. She is interested in how formal and informal systems can synthesize in the emerging African city, and written or co-authored over 50 articles in peer-reviewed journals, books and conference proceedings. She is a member of the editorial advisory board of Area Development and Policy Journal of the Regional Studies Association and represents the Association of African Planning Schools on the International editorial board of the Global Planning Educators Association. She is also a United Nations Policy Expert on Urban Governance, Institutional and Capacity Development.
She is a registered town planner and a member of the Hunan Capacity Development Association, Urban Affairs Association and International Society of City and Regional Planners among others. Taibat recently completed the

prestigious Rockefeller Foundation Bellagio Academic Residency and is a 2013 World Social Science Fellow of the International Social Science Council. ∎

Alan Mabin

Professor Alan Mabin was born in Johannesburg and studied at Wits University, Ohio State University, USA, and Simon Fraser University, Canada. He is a Corporate Member of the South African Planning Institute. He taught at Wits from October 1981, and from 2005 to 2010 headed the School of Architecture and Planning at Wits. In 2014-15 he was Research Fellow at the University of Pretoria leading the programme 'Capital cities—space, justice and belonging'. Alan is now Emeritus Professor associated with the Wits City Institute. He is a member of the Council of the International Planning History Society and of the Board of RC21—Research Committee on Urban and Regional Research, International Sociological Association.

Alan has held visiting positions at Yale (USA); Queen's (Canada); Université de Paris Ouest [X]-Nanterre-La Défense, Laboratoire Architecture Ville Urbanisme Environnement, and Sciences Po in Paris, France; and Universidade de São Paulo in Brasil. He holds visiting appointments at the Universities of Pennsylvania and Stellenbosch. His urban development experience includes being founding chairperson of Planact in Johannesburg, 1985, an urban development NGO with which he has been linked for 30+ years. He has worked with numerous departments of national, provincial and local government in South Africa and with multilateral organisations. His publications include 3 edited books and over 100 research articles and chapters. ∎

Jeffrey Mahachi

Dr. Jeffrey Mahachi is a registered professional engineer and a registered construction project manager, and is a Fellow of the South African Institution of Civil Engineering. Jeffrey holds a PhD in structural engineering from the University of the Witwatersrand, a Masters degree in structural engineering from Surrey University (UK), a Masters degree in Information Technology from the University of Pretoria, and a BSc Civil Engineering (Hons) degree from the University of Zimbabwe. Jeffrey has worked as a an Executive Manager at the National Home Builders Registration Council (NHBRC), project manager and research engineer at CSIR Building Technology, lectured at the University of the Witwatersrand and has done consulting work in civil and structural engineering. He has also written two books on structural engineering and presented several papers at international and local conferences and seminars. He is currently serving as a board member of the Engineering Council of South Africa and Agrèment South Africa and is a Director of SSP Multiconsult (Consulting Civil and Structural Engineers). ∎

Thozama Majila

Dr. Thozama Majila is Director: Research and Policy Development in the Eastern

Cape Departments of Human Settlements. Out of her 30 years of experience as a public service practitioner, 9 years of practice have been in the housing/human settlements sector. She has delivered conference papers and published on issues that threaten service delivery. Her research interests are focusing on ethics, gender equality, corruption, equity and organisational learning.

Her significant areas of expertise include Public Policy Analysis and Development, Strategic Planning, Performance Monitoring, Evaluation and Reporting; and Knowledge Management. She served as a Policy Researcher in the Eastern Cape Department of Public Works; Manager: Strategic Support in the Eastern Cape Department of Health (office of the Chief Operations Officer); Manager: Policy Development in the Eastern Cape Department of Housing/ Human Settlements.

Dr. Majila holds a Bachelor of Administration degree from the University of Fort Hare; Master of Public Administration degree from Nelson Mandela Metropolitan University; Master of Philosophy — Information and Knowledge Management degree from Stellenbosch University; and Doctor of Philosophy — Public Administration degree from Nelson Mandela Metropolitan University. ∎

Jabu Absalom Makhubu
University of Johannesburg

I am a young, black lecturer and emerging researcher in the Department of Architecture, University of Johannesburg. I am interested in the politics of space, reimagining of urban public space in an around Johannesburg. I have recently completed a Masters in Urban Design (MUD) from University of Witwatersrand. I find the often-conflicting relationship between architecture and urbanism both inspiring

and challenging. I am interested in cities, people and politics, especially as it relates to issues around transformation in all its manifestation, including physically (resilience), ecologically (sustainability) and socially. I have been in practice for 4 years, working on projects in and round the city such as Sci-Bono science centre in Newtown, Metro link in Braamfontein, Morris Isaacson Hall in Soweto, Marlboro South research project, and I am currently involved in the community engagement urban design precinct planning of Melville, Johannesburg. ∎
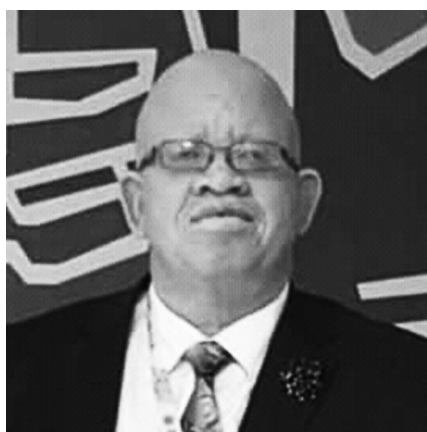
Sijekula Mbanga

Prof. Sijekula Mbanga is an Associate Professor for Buildings and Human Settlements, a Programme Leader for the Bachelor of Human Settlements Development, and the Director of the Chair for Education in Human Settlements at the Nelson Mandela Metropolitan University. He holds a PhD in Public Administration, with his thesis focusing on integrated development planning, obtained from the Nelson Mandela Metropolitan University. This is the same institution where he completed his Masters' degree in Administration (Cum Laude) with distinctions in Advanced Project Management, Advanced Public Policy Analysis and 100% pass in Integrated Development Planning modules. Prof Mbanga is a registered and active member of SAAPAM, SAMEA, GISSA and SAPI.

His research interests are integrated approaches to development management, community based planning and development, sustainable livelihoods, inter-governmental relations, alternative and innovative building systems, public policy development and analysis. Prof Mbanga spans a wealth of industry experience, and has worked in a number of government departments and entities. Before joining the NMMU he has held senior manage-

ment positions including those of Director, Chief Director for Housing Policy Planning and Research and Chief Operations Officer in the Eastern Cape Departments of Roads and Public Works, Office of the Premier, Housing Local Government and Traditional Affairs and Human Settlements where he was responsible for long-term human settlements planning, search and testing of alternative building technologies and programme management of the eight regional housing operations, inter-governmental relations, stakeholder management, policy development and research, municipal support and accreditation. He has on several occasions served as the Acting Head of Department of Housing in the Eastern Cape. He boasts of strong organisational development and change management experience and thrives during organisational transitions, establishment of new entities and transfer of functions between and across different entities. Prof Mbanga is not only an academic, but a purpose-driven community development activist that is critical of societal order where a naturally resourced economy sits side by side with abject poverty. ∎

Aurobindo Ogra

Aurobindo Ogra joined University of Johannesburg in 2009 and lectures at Department of Town and Regional Planning, Faculty of Engineering and the Built Environment. He is a Professional Planner (SACPLAN) and has 16 years of multidisciplinary international professional experience in urban sector from India and South Africa. He holds Bachelor of Construction Technology (2000), MTech in Urban & Regional Planning (2002) and Masters in Business Economics (2009), and is currently finishing his doctoral research in Engineering Management at University of Johannesburg. He is also trained in specialized programmes in urban sector from

leading institutions in areas of: Urban & City Management (World Bank Institute), Strategic Approach to Urban Challenges (Central European University), Smart Cities – Management of Smart Urban Infrastructures (IGLUS, EPFL, Switzerland) and among other specializations. His key expertise and interest areas span across multidisciplinary domains of urban sector: Urban Infrastructure Planning and Development, Urban and Regional Planning, Urban Development and Management, Local Government, Metropolitan and City Regions, E-Governance, Geographic Information Systems, Spatial Analytics, and Smart Cities.

He is a recipient of Local Government & Public Service Reform Initiative (LGI) Fellowship, Open Society Institute, Hungary (2008). He also served as a Technical Task Team Member, Presidential Infrastructure Coordinating Commission (PICC), South Africa to provide strategic inputs in areas of SIP-6: Integrated Municipal Infrastructure Project, SIP 7: Integrated Urban Space and Public Transport Programme, and Innovative Building Technologies (IBT) during 2015-16. He is a member of various national and international professional bodies associated in urban sector and has actively contributed in invited forums, discussions, workshops and other industry engagements. He actively participates and contributes in academic and research engagements at national and international conferences, forums, workshops and regularly publishes in multidisciplinary thematic areas of urban sector. He served as a Scientific Chair for Planning Africa Conference during 2014 and 2016 and spearheaded the process and publication of peer reviewed conference proceedings. He has featured on South African Broadcasting Corporation (SABC News) South Africa, on a conversation on rapid urbanization and challenges in Johannesburg (March and July, 2016).

He is presently the Programme Coordinator for Masters in Sustainable Urban Planning and Development (MSUPD) offered by Department of Town and Regional Planning at University of Johannesburg. His current teaching responsibilities at postgraduate and undergraduate level include:

▪ Postgraduate Level: Sustainable Urban Infrastructure and Smart Cities Development (SUSC019); and Masters

Research Supervision (Cross-Disciplinary Research).

▪ Undergraduate Level: Management for Planners (TPM431); Urban Renewal/Project Work-C (EL3872C) and Planning Design: Introduction to Planning Survey (PLSTRB1); and Undergraduate Research Project Supervision (TRP406)

Current research project engagements: Special Economic Zones (SEZ), Industrial Development Zones (IDZ), Industrial Parks, Urban Infrastructure (Waste Management & Planning), Innovative Building Technologies & Neighbourhood Development. ■

Amira Osman

Amira Omer Siddig Osman is a Sudanese/South African architect/lecturer/researcher. She is currently a professor in architecture at the Tshwane University of Technology.

Amira studied at the University of Khartoum in Sudan in 1988 (B.Sc.) and 1996 (M.Sc.). In between the two she also studied at the Institute for Housing Studies in Rotterdam (IHS) in 1992 where she obtained a post-graduate diploma. She completed her PhD in Architecture at the University of Pretoria in 2004.

She worked as an architect in Khartoum during the period 1988 – 1997 with various practices on small and large projects and was a United Nations Volunteer (UNV) in Maseru, Lesotho 1997 – 1998, as an architect with the Department of Public Works. She practiced as an architect in the Sudan and has participated in a number of projects in South Africa including a hostel upgrade and designs for social housing in Pretoria. Amira is a registered Professional Architect with the South African Council for the Architectural Profession (SACAP) and while her focus is academic and research-oriented, she continues to practice

on a small scale.

Amira taught at a number of institutions for about 30 years in total, with 10 years at the University of Khartoum, 11 years at the University of Pretoria and 5 years at the University of Johannesburg. She established the Housing and Urban Environments (HUE_UP) research field at the University of Pretoria and at the University of Johannesburg. She also established UJ's research and academic UNIT 2 "Architecture and Agency: DESIGN | MAKE | TRANSFORM" in 2015. Amira taught Housing and Urban Policy at BTECH level during the period 2016 – 2017. She has previously worked as a Senior Researcher at the Council for Scientific and Industrial Research (CSIR) in Pretoria (2010 – 2012).

Amira was one of the conference conveners for the World Congress on Housing in 2005 at the University of Pretoria and the convener of the Sustainable Human(e) Settlements: the urban challenge, 2012, hosted by FADA, University of Johannesburg and its partners. She also served as UIA 2014 Durban General Reporter for the International Union of Architects (UIA) and the South African Institute of Architects (SAIA). ■

Finzi Saidi

Dr. Finzi Saidi is senior lecturer in the Department of Architecture in the Faculty of Art, Design and Architecture (FADA) at University of Johannesburg (UJ). He has served in various roles at UJ that include, Head of the Department of Architecture and Vice-Dean of FADA.

His teaching career began at the Copperbelt University in Zambia, where he taught in the architecture programmes in the School of the Built Environment.

Other institutions that he has worked for include the University of Cape Town, where he was Convenor of the Master of

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Landscape Architecture programme in the School of Architecture, Planning and Geomatics and the University of Pretoria, in the architecture and landscape architecture programmes.

His educational training spans across three institutions: his bachelor's degree in architecture obtained from the Copperbelt University; his Master of Landscape Design degree from the University of Newcastle-upon-Tyne; and finally his PhD in Architecture from the University of Pretoria.

His research interests range from resilient landscapes, studies of use of open spaces in South African cities and developing innovative and responsive curricula in architecture. ■

Winston Shakantu

Winston Shakantu is a Professor of Construction Management at NMMU. His qualifications include an Honours degree in Building; a Masters in Construction Management from the University of Reading; a Doctorate from Glasgow Caledonian University and a Post-graduate certificate in International Construction Management from Lund University.

Winston is also professionally qualified as Professional Construction Managers (PrCM) and is a full member of the chartered Institute of Building (MCIOB). He is also a Chatered Construction Manager. He has published over 100 papers in journals, conferences and book chapters and supervised to completion 10 Doctoral graduates and scores of Masters and Honours candidates. ■

Konrad Soyez

Konrad Soyez, PhD, Ass. Prof., Chemical engineer (1969), research and teaching activities in environmental biotechnology, bioprocesses of organic material, esp. organic waste and water management, environment and climate assessment, and green technologies. Long term international research and education projects, e.g. in Chile, Philippines, and South Africa. Member of German and international learned societies and working parties such as European Federation of Biotechnology, DECHEMA, and VDI. President of the German Association for Ecological Technology and Systems Analysis. Editor and author of text books on general biotechnology, waste management technologies, and climate mitigation. ■

Brian Wasserman

Dr. Brian Wasserman (DIT), is Department Chair in Construction Management at Minnesota State University, Mankato. His Doctor of Industrial Technology degree was earned from the University of Northern Iowa (UNI). Dr. Wasserman has taught a wide variety of courses in Construction Management. His research topics have included construction education, concrete materials, and Department of Transportation scheduling. His most recent adventures have been in the field

of Human Settlements with a focus on housing in South Africa. Dr. Wasserman spent his sabbatical in South Africa working with the University of Fort Hare and has participated in research and conferences with Nelson Mandela University. ■

Afua Wilcox

Afua Wilcox is a young enthusiastic architect based in Johannesburg. Her academic career consisted of a Bachelor of Architectural Studies at the University of Cape Town from 2007 – 2009, an internship at Atelier UWA Architects in London in 2010, and per Final postgraduate Honours and MArch at the University of Witwatersrand from 2012 – 2013.

Afua is one of the founding members of the African Architects collaborative. A NPC that celebrates African Architecture and educates underprivileged students about possible careers in the built environment. Alongside Amira Osman, she currently heads up the Human and Urban Environments Elective at the University of Johannesburg(HUE UJ). This elective complements her work at Michael Hart Architects and Urban Designers. Both the elective and architectural practice are committed to creating well designed, humane RDP, social housing and sustainable urban environments. ■

The influence of urbanism on the acceptability of traditional earth-constructed houses

Gerhard Bosman | University of the Free State, Department of Architecture, Earth Unit
Chris van Vuuren | University of South Africa, Department of Anthropology

Abstract

The celebration of culture and identity of traditional and vernacular earth building techniques have positively impacted communities world-wide. The impact of the physical context (available materials, climate and topology) has long been established as influences on the typology, morphology and cultural identity (cultural context). However, local groups enjoy different perceptions of their social environments that should be considered in the promotion strategy of upgraded traditional building techniques. A recent qualitative study in central parts of South Africa has confirmed that the urban context, together with the physical environment and living conditions of local groups, are the main influences on perceptions of traditional earth construction. This method formulated a strategy to be followed in raising the status of earth constructed techniques used in contemporary applications in central parts of South Africa. The aim of this paper is to highlight the physical context as the more influential variable — more so than the cultural context — when considering the acceptability of traditional earth construction. Local perceptions regarding traditional earth construction houses showed different levels of acceptability, influenced by the local building culture and basic services. In order to promote contemporary earth construction techniques, it will be useful to have different approaches for training and construction efforts within a specific location.

Key words: Culture, identity, urbanism, perceptions, earth-constructed houses.

1.0 INTRODUCTION

Frescura (1981) studied the development of the traditional house among the different indigenous groups in South Africa. In his book, *Rural shelter in southern Africa*, Frescura shows that using earth for constructing walls was mainly done in the drier areas of South Africa. The environment or the availability of materials typically determined the type of material used for wall construction in different areas. Moore, Gerald and Donlyn (1974: 71 – 73) used climate as a determining factorW in the development of American colonial housing in the Southwest, while Rapoport (1969: 18 – 45) showed that available materials and technology, culture and the form of the house determine the final choice of materials that will be used.

The following sections will illustrate the way that available material, climate and the topographical qualities of South Africa have influences the cultural context. For the purpose of this argument cultural context will be considered as the form and structure type of house construction that gives a cultural identity. This will be followed by the research project that supports the argument that the physical context of communities (with reference only to location) plays a bigger role than the cultural context (with reference to only the home language). The findings and discussion will be presented in combination to highlight recommendations in the strategy for the promotion of contemporary earth construction efforts.

2.0 PHYSICAL CONTEXT SHAPES CULTURAL CONTEXT IN SOUTH-AFRICA

It is possible to present a schema of house typologies among the indigenous communities in South Africa. Inherent in such a typology are physical contextual variables such as climate (Bosman & Van der Westhuizen, 2014: 117; Frescura, 1981), soil type (Bosman, 2015: 125), economic subsistence (Steÿn, 2009), transhumance, and later influences triggered by changes in the cultural context (colonialism, acculturation or modernization).

Three types of house forms (morphology) dominated the southern African rural landscape (topology), namely an early grass dome (beehive) type, a later cone-on cylinder (*rondavel*) type and quadrangular types (see Figure 1). The grass dome was the typical house form among the Nguni speaking communities. This house typology dominated among the Zulu (Knuffel, 1973), Xhosa (Soga, 1931) and Swazi (Ziervogel, 1959), as well as the Highveld Ndebele (Van Vuuren, 1983) and Basotho (Walton, 1956) of Lesotho. Apart from a floor, fire place and a low fire protection

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wall, the grass dome featured a minimum of earthen work. Towards the late 1800s and early 1900s the grass dome among the Zulu and Xhosa had raised earthen walls, which resembled a dome-on-cylinder type (see Figure 2). The early cone-on-cylinder houses among the Xhosa of the east coast of South Africa had a dome shaped thatched roof and not the typical cone type. Prominent among the Sotho speakers of the central Free State and the mountainous Lesotho (see Figure 2) was a grass dome with an elongated funnel like entrance (*mohlongoafatse)* that survived colonial and missionary influences and is still visible in the eastern parts of the Free State and Lesotho.

The grass dome in South Africa also presented two varieties in frame construction. Among the Xhosa, Ndebele and Basotho the frame saplings are knotted in the apex while the lateral lattice consists of a number of parallel saplings. The Zulu and Swazi dome frame consists of a complex system of

four quarters of interwoven saplings which are knotted towards the apex of the house (Knuffel, 1973; Van Vuuren, 1983). This latter type is considerably stronger and allows for the very large domes which are found among the houses of the Zulu royals.

The introduction of the cone-on-cylinder house among the Nguni speakers was triggered by missionary and western influence. The name "rondawel" for this type of house among the Xhosa, Swazi and Zulu is *urondabuli* (Dent & Nyembezi 1969: 472) and among the Basotho *rontabole* for the cone-on-cylinder house type in South Africa.

Among the early Northern Sotho, Venda and Tsonga, and presumably Tswana, the cone-on cylinder house roof construction and earthen wall construction are separated elements. Furthermore, men and women engage in different parts of the building process during this house construction. Earthen work is a female domain, whereas men

are entrusted to the roof and wall timber work, as well as thatching. The choice of an earth wall type will depend on the regional availability of natural resources and the nature (topology) of the construction site (flat, terraced, sloped, dry, rocky or damp).

When wood in the natural environment is available, earth building on house walls might encompass the wicker and earth (wattle and daub) method. In rocky or sloped regions, the walls are constructed using rock and earth, and in some cases small stones are cast into a wooden 'mesh' and then plastered with mud. In the dry western and north western parts of South Africa, the locals have been using the rammed earth technique (*pise le terre*) introduced by French missionaries in the years before 1920 (Archibald, Crosby & Patty, 1948).

Rural black earthen builders use various organic components to strengthen the quality of mud mixtures for earthen walls. Stabilizing organic components include
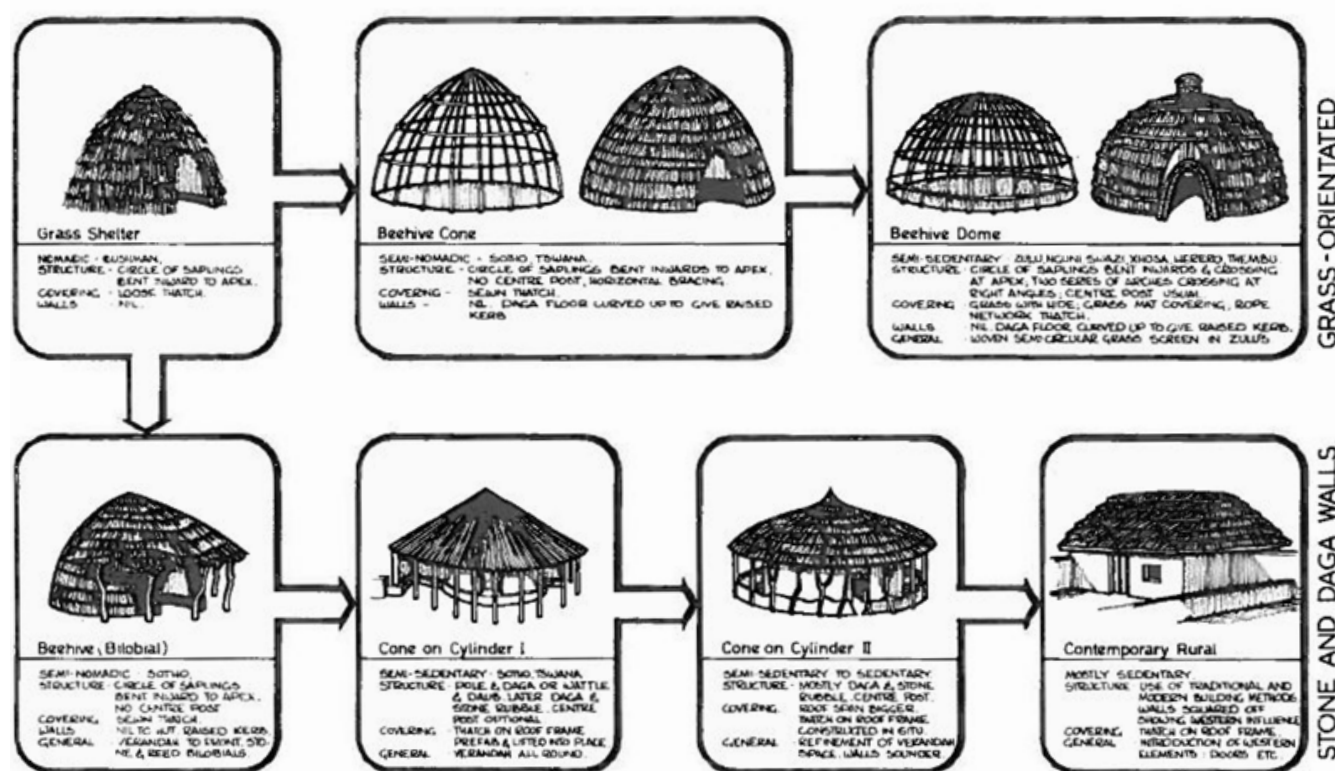
Figure 1: The development of house typologies (Frescura, 1981: 12)

straw, cow dung (very popular) and termite soil. Since the arrival of cement, it has become a commonly used component in some mud mixtures. The robustness, good compressive strength, resistance to abrasion and erosion has left unstabilized materials with a low acceptability status. The decline in traditional and vernacular building practices is not new. Traditional earth constructed dwellings have received increasingly poor acceptability the last few decades. Hadjri *et al.* (2007: 147) reported that urban residents in Zambia associate earth constructed buildings with poverty and low socio-cultural status. This was confirmed by Ngowi (1997a, 1997b, 1997c) on efforts to upgrade the use of traditional earth construction techniques in rural areas of Botswana. According to Oliver (2003: 236) some people in developing countries feel embarrassed about their vernacular traditions. The general state of rural earth buildings and the temporary application of traditional earth building techniques in urban areas in and

around towns and rural settlements in the Free State Province draw the attention to the acceptability of earth constructed houses. A recent project produced data that shows, through a quantitative analysis process, the low acceptability of traditional earth constructed houses in central parts of South Africa.

3.0 METHOD

This paper uses data obtained from a South Africa-Netherlands Research Program on Alternatives in Development (SANPAD) project. This project investigated the perceptions of urban and rural South Africans on traditional earth constructed houses. The objectives of the SANPAD project were to stimulate and promote quality research, production of Master's and PhD students and co-operation between institutions. This paper draws from the outcome of the project entitled: *A South African Building Renaissance – Acceptability of high quality, earth constructed, public and private buildings to support sustainable local economic development*.

The survey questionnaire was formulated in three languages: Afrikaans, English and Sesotho. Questions in the survey referred to demographics, income, present housing conditions and basic housing services available. Most of the locations were internally and individually homogeneous (in terms of the variables or comparative characterisics being studied). A spatial cluster sampling method in the different townships or settlements in the nine study locations was followed (Steÿn, 2009: 61 – 62). The sample size for each of the areas was calculated according to Stoker's (1981: 13) method of:

$$\sqrt{(N \div 20)} \times 20$$

With N (the stratum size), therefore gave the number of houses for the sample size.

A distinction was drawn in all areas between urban formal areas (those with water, sewerage, electricity and site number), urban informal

▇ Afrikaans	
▢ English	
▇ Northern Sotho	
▇ Sotho	
▇ Southern Ndebele	
▇ Swazi	
▇ Tsonga	
▇ Tswana	
▇ Venda	
▇ Xhosa	
▇ Zulu	
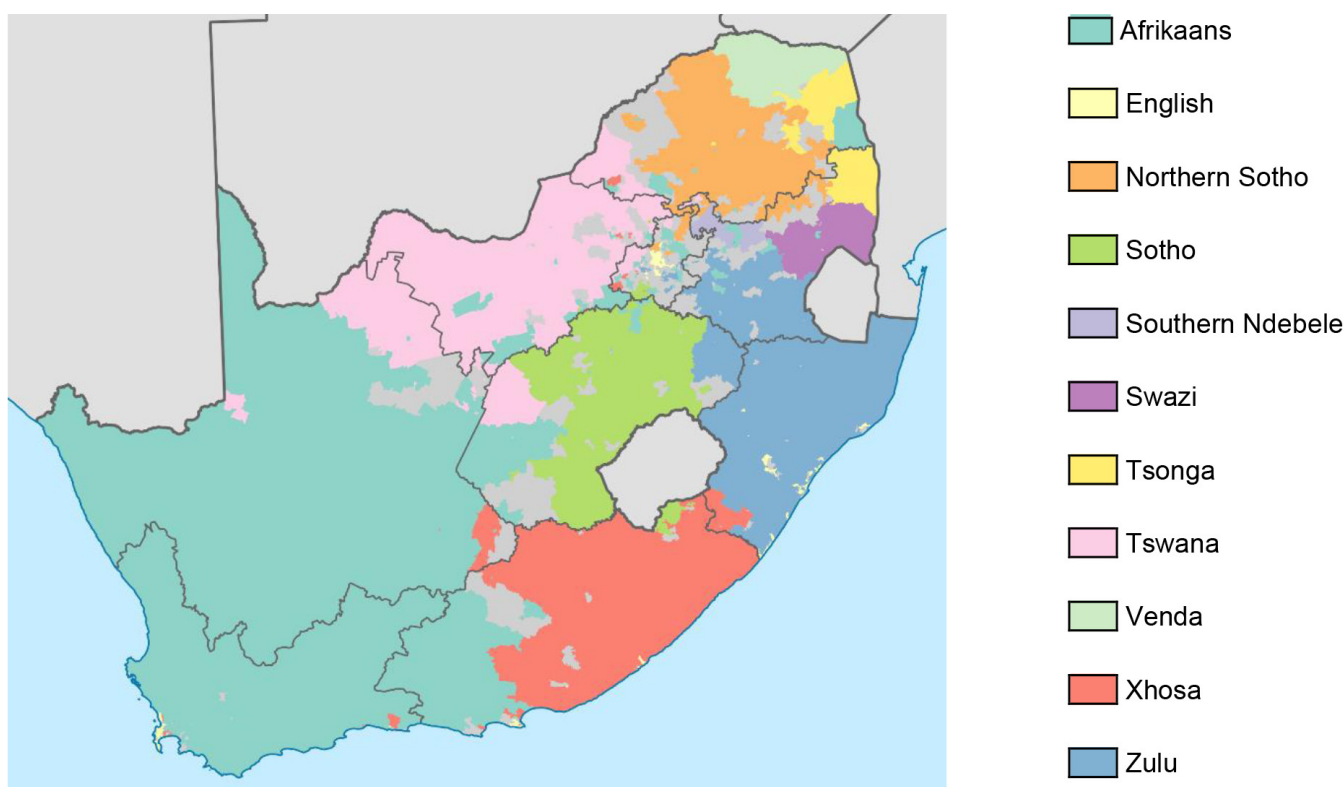
*Figure 2: The current dominant languages in South Africa (*Linguistic Maps of South Africa*: 2016]*

areas (those without services and site number) and rural informal areas (bigger sites with site numbers in areas governed by traditional chiefs (see Table 1). These areas were homogeneous; therefore, every fourth house was selected for the purpose of the survey. It was decided on a systematic sample and not a stratified random sample, as maps for some of the areas were not available. Only a section of the first of two surveys will be used for the analysis on this paper.

The means to describe the strength of the relationship among variables described by Ajzen and Fishbein (1980: 98) is known as the correlation coefficient. The correlation would often indicate whether or not it is statistically significant. A correlation is significant when the observed relation between two variables is unlikely to be due to chance alone. A finding is considered statistically significant if its probability (possibility, or likelihood) (p) of occurrence by chance alone is less than 5 in 100 (p<0.05). The statistical significance (meaning or connotation) of a correlation coefficient depends not on its magnitude (the extent to which it deviates from zero in either a positive or negative direction), but also on the size of the sample on which it is based. Schall (2014) agrees that the statistical significance also depends on the sample size and not only on the magnitude of the correlation coefficient.

4.0 FINDINGS AND DISCUSSION

4.1 Home language

Home language was found to have a strong statistically significant association with wall type; ownership of the house; the three services and if ever lived in an earth house before (see Table 2). People of a certain language, such as Setswana, tend to have the same preferences regarding wall type. They tended to have the same level of home ownership, the same levels of service and the same histories regarding previous types of housing, since the area types and locations were the same. This, however, does not mean that the Setswana speaking groups were more positive than other groups.

Location	Area type	Sample size
Botshabelo	Informal urban (Block W) and formal urban (Block K)	390 houses
Thaba Nchu	Informal urban	221 houses
Bulfontein	Formal urban	186 houses
Bankhara Bodolong	Formal and informal urban	231 houses
Tshiame B	Formal urban	72 houses
Makgolokweng	Informal rural	130 houses
Manokwane	Informal rural	91 houses
Pampierstad	Formal urban	313 houses
Mapoteng	Informal rural	165 houses

Table 1: The sample size of houses surveyed in different areas.
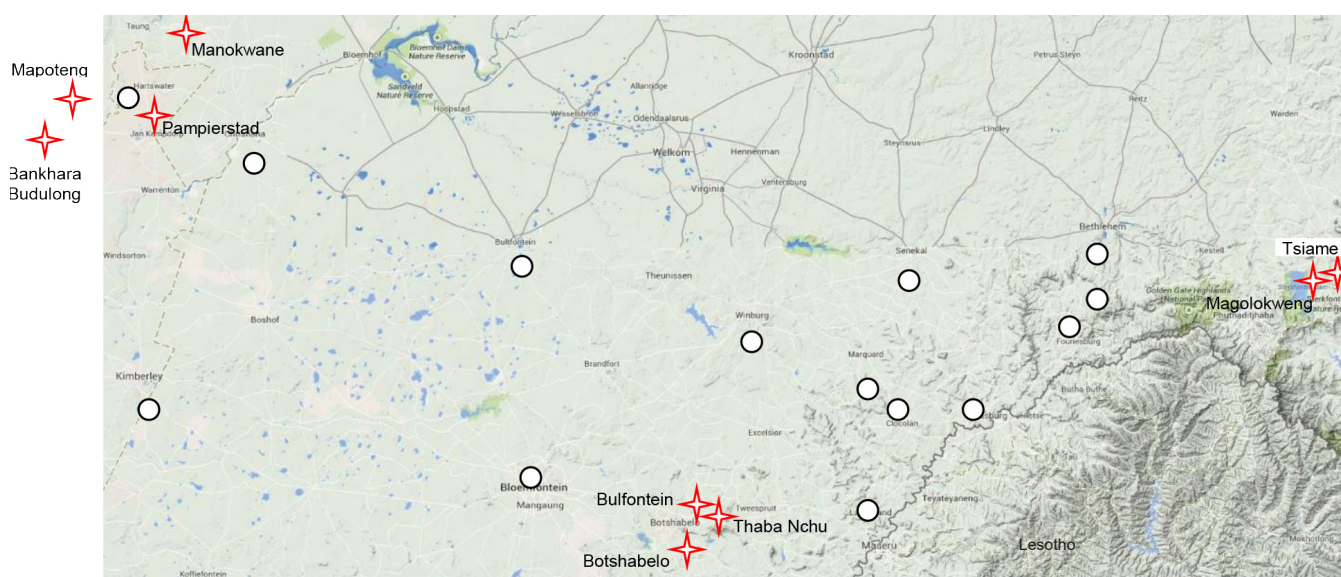
Figure 3: Towns and settlement visited (circles) and selected (stars) for the survey (Rural Development and Land Reform, 2014)

The implications are that locations were homogenous, and that there were statistically significant associations (Bosman, 2015: 123) between location and all housing characteristics (wall type, ownership, all services and ever lived in earth). Furthermore home language was found to have a strong relationship with area and location since the North West province and Northern Cape Province have mainly Setswana speaking respondents, and the central and eastern Free State, mainly have Sesotho speaking respondents (Bosman, 2015: 131).

The recommendations are that training efforts should be focused on providing basic services in the areas; focusing on an earth building technique that is well known and utilized as the local building culture (Bosman, 2015: 125 – 128), before starting with a new training program to promote contemporary earth construction.

4.2 Location

Urban informal area type respondents are more positive about the use of *adobe* (sun-dried earth block) for houses, and urban formal and rural area respondents are more negative about the perceived quality of earth constructed houses. Respondents that perceived the quality of adobe between good to very good are expressed in percentages. For the purpose of this paper, it is important to note that the Free State Province locations (Bothshabelo – 11.1%, Thaba Nchu – 16.5%, Bulfontein – 9.2%, Tsiame B – 6.9% and Makgolokweng – 13%), together with the Northern Cape Province locations (Bankhara Bodulong 13% and Mapoteng – 7.9%), are more positive than the North West Province locations (Manokwane – 4.4% and Pampierstad – 3.5%).

Table 3 confirms that Magolokweng respondents (mean score – 3.89)

are more positive about the use of adobe and Bulfontein respondents (mean score – 4.11) are most negative about the use of adobe. Keep in mind that 13% of Magolokweng respondents and only 9.2% of Bulfontein respondents (see section 4.2) are more positive about the use of earth constructed techniques in their locations. A previous analysis (Bosman, 2015: 136) has also confirmed that 3.1% of Magolokweng respondents and 0% of Bulfontein respondents will still live in an earth constructed house if they have a choice between earth, fired brick, cement blocks or corrugate walls for their houses. The implications are that Magolokweng respondents are more positive about the perceived quality of earth constructed-houses and Bulfontein respondents are most negative about the perceived quality of earth constructed houses. The physical contexts (available materials,

Personal characteristic	Housing characteristic	Chi-square statistic	df	P-value
Home language	Wall type	72.5204	5	<0.0001
	House size	3.7677	5	0.5833
	Opinion on RDP houses	4.8647	5	0.4326
	Ownership	40.6812	10	<0.0001
	Water service	72.3836	5	<0.0001
	Electrical service	189.5738	5	<0.0001
	Toilet service	31.6999	5	<0.0001
	Ever lived in earth	42.8035	5	<0.0001

Table 2: Association between home language and housing characteristics.

Location	N Obs	N	Mean	Std Dev	Min	Median	Max
Botshabelo	390	388	4.05	1.06	1.00	4.00	5.00
Thaba Nchu	212	212	3.70	1.15	1.00	4.00	5.00
Bulfontein	186	186	4.11	0.97	1.00	4.00	5.00
Bankhara Bodulong	231	231	3.91	1.10	1.00	4.00	5.00
Tshiame B	72	72	4.08	0.87	2.00	4.00	5.00
Makgolokweng	130	130	3.89	0.99	1.00	4.00	5.00
Manokwane	91	91	4.21	0.75	1.00	4.00	5.00
Pampierstad	313	311	4.25	0.74	1.00	4.00	5.00
Mapoteng	165	165	4.04	0.89	1.00	4.00	5.00

Table 3: Locations vs. acceptability

climate and topology) of Magolok-weng and Bulfontein (see Figure 3) differ while the cultural contexts (typology, morphology and cultural identity) do not differ. See Figure 2 for the distribution of local Sesotho speaking groups in the Free State Province.

The recommendations are that training efforts should be focused on identifying the current building culture (what people prefer and what is commercially and naturally available in the areas). Another factor that should be considered is the effect of climatic conditions on attitudinal change towards earth construction in South Africa.

5.0 CONCLUSION

The impact of location as a selected part of the physical context and home language as a selected part of the cultural context have been used to illustrate the effect that these variables have on the acceptability of traditional earth constructed houses in South Africa. Other variables should be considered, but for the purpose of this paper location and home language have been used, with some reference to the influence of the building culture characteristics and the availability of basic housing services. The findings suggest that the location influences people's building preferences, particularly if building materials are locally available. Furthermore, people's choices are influenced by the local building culture, as well as the availability of local building services. Although a minority, some people stated a preference for earth construction (to be used in their preferred houses). It can therefore be concluded that the physical context surpasses the cultural context for the acceptability of earth constructed houses. This should be considered when formulating different approaches for training and construction efforts within different locations.

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Beyond gentrification? Exploring the possibilities of inclusive transformation in inner city Johannesburg

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Abstract

This paper presents gentrification trends in inner city Johannesburg – with a focus on Jeppestown – the impact on the city inhabitants and how inclusive development in the inner city can be achieved.

This will be done through a literature review and a comparative study between two developers in the Jeppestown area in Johannesburg: Bjala and Propertuity. Several research questions and themes will aim to unpack these issues:

- *Does renewal, upgrading and greater investment in the city always lead to displacement? Have higher-level city strategies and project level innovations led to the retaining of the original inhabitants?*

- *What are the characteristics of a gentrified neighbourhood and how can the positive characteristics benefit larger segments of society? Can mixed-use residential upgrades be achieved where transformation is dynamic enough to allow for diversity of inhabitants (demographics in terms of gender, age, family structures, income levels), as well as various forms of tenure, spatial arrangement, layouts, size over time as markets change, general economic changes and family structures changes?*

- *What is the approach of the developers in Jeppestown, Johannesburg and who do they target? Are there developers that have been able to retain existing communities and how have they achieved that? How do the developers try to create and integrated community?*

- *What are the demographics within the renewed areas in Jeppestown? Is there evidence of social exclusion of certain groups?*

1.0 INTRODUCTION

Jeppestown,Johannesburg is a highly contested and highly desirable location in the inner city. There is evidence of this in the numerous developers that operate there, as well as the many who have occupied its buildings and spaces for residential and other activities. There is also evidence of this in the many conflicts that arise between inhabitants, developers and the city authorities – these are well documented in the media. The area has been witness to major evictions and displacements over many months.

Two developers in particular have made an impact on the image of this part of the city, namely Bjala and Propertuity. The comparison between the two developers will reflect on approaches taken towards existing policy, financial models, development and design approaches.

It is important to investigate whether developments in Jeppestown have led to the retaining of the original inhabitants, and ensuring affordability, while still making business sense for investors and local government agencies, as well as identifying how can the roles of the city, wider city residents, specific neighbourhood residents and financial institutions be conceptualised to allow for ease of access for diverse groups of people.

2.0 INFORMATION GATHERING

We have approached both developers for this research. There was a stark difference in responses. Our experience is that Bjala were not forthcoming with information. All the information on Bjala used in this article has been found online and in publicly available reports. Propertuity on the contrary were open with sharing information and provided us with a census carried out by their organisation. However, the objectivity of the census may be a concern. The census contained demographic information of 200 contracts, when in fact almost 600 units were sold or rented out in 2015 and 1 325 in 2016. Furthermore, the census outcomes seem to strongly support the vision of Propertuity, when in fact our qualitative researchshows outcomes which are not so straightforward. Information has also been gathered via personal observations and work experience in the area.

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3.0 GENTRIFICATION AND URBAN RENEWAL

Gentrification and urban renewal are terms that are often used when looking at the redevelopment of inner cities around the world and have differing meanings. In order to understand what is happening in the inner city of Johannesburg, it is important to investigate the difference between them.

Urban renewal is defined as "a process in which the state or local community seeks to bring back investment, employment and consumption to enhance the quality of life in an urban area" (Couch, 1990). Collins dictionary defines it as: "the process of redeveloping dilapidated or no longer functional areas." The term urban renewal emerged after the deindustrialisation of cities and more specifically after the Second World War. During the 1970s, many inner cities experienced socioeconomic decline. Governments tried to address this via several programmes and projects aiming to bring back investors to the inner city. Whether or not people always are being evacuated from their homes while urban renewal is taking place is not clear. Some definitions do state that urban renewal entails the clearance of slums, others don't.

There is no clear definition of gentrification. The first signs of gentrification were written about by Jane Jacobs in her book 'The death and life of great American cities' (1961) which portrayed how artists moving into affordable space in inner city neighbourhoods, with increased buying power, generated changes in entrepreneurship patterns and social cohesion. Jacobs believed that this led to less diversity and more homogeneity in the resident profiles and caused the demise of a key ingredient for positive urban settings:"… human contact, sidewalks, mixed use, low rent, and authenticity as a democratic expres-sion or origin." (Jacobs, 1961). The "new" residents moving in, with their new interests in arts and eateries, are not always welcomed nor accepted: "the voices they amplify are the upper-middle class people… You have artists coming in", using the neighbourhood "as their portfolio, and then force us out" (Moskowitz, 2017). The author also quotes: "There's an unconscious collaboration between artists interested in living in gentrifying cities, and the market forces and developers who benefit from them."

Smith and Williams (1998: 189) define gentrification as "middle- and upper-class movement into and renewal of neighbourhoods that had experienced disinvestment and decline." Visser (2003: 80) describes processes of gentrification as a "complex and varied form of urban regeneration". It is explained that "gentrification has come to mean a unit-by-unit acquisition of housing which replaces low-income residents with high-income residents, and which occurs independent of the structural condition, architecture, tenure or original cost level of the housing (although it is usually renovated for or by the new occupiers)" (Visser, 2003: 81 – 82). Visser continues to explain the possible reason there is limited South African literature on the topic, as there have been limited gentrification activities up until the early 2000s. However, this scenario is quickly changing in South African cities, and this has become a topic that needs deeper interrogation.

Today gentrified neighbourhoods are often characterised by coffee shops and cafes, places where freelancers can work behind their Macbooks with a latte, designer boutiques, organic food stores (Kohli, 2015). New shops and stores would attract different people; often people who have more to spend or who are willing to spend more – leading to higher retail prices and property prices. The pioneers sell their houses to the next generation. The renewal of the neighbourhood is complete and gentrification has set in.

Gentrification in this sense is seen as a negative phenomenon, often changing the identity (Vigdor, 2002: 135) of a neighbourhood completely and forcing the original inhabitants of the neighbourhoods to move to other less expensive neighbourhoods. The changing socio-economic status of households in a neighbourhood is seen as the root cause for the displacement of the poor. Although this perception of gentrification dominates, (Vigdor (2002: 135) argues that there is no evidence that gentrification necessarily displaces the poor. Positive outcomes of gentrification are often overlooked. New investors bring new attention to deprived areas, contributing positively by decreasing crime rates, increasing job opportunities and bringing diversity into a neighbourhood. When this diversity is preserved, the poor may actually benefit from the gentrification (Charles, 2003: 167 – 207); Misra (2017) however, does not believe that this diversity, perceived as being superficial and aesthetic, always leads to more interaction between different groups: "If we think that mixed-income, mixed-race communities are the panacea for poverty, they're not."

The process of gentrification gradually changes the characteristics and inhabitants of an area. In the period after democracy in South Africa, much capital invested in cities shifted to centres outside of the traditional city centres and to the suburbs. Developers are now seeing an opportunity to start investing again in the inner city and trying to attract new clients with higher spending power. This is coupled with a desire by people to avoid wasting commuting time and desiring to live a different form of

life than that offered by the suburbs. In other words, there are both economic and social factors that lead to gentrification processes in South Africa. Gentrification can therefore be perceived as an opportunity and liberation for many, as well as a source of concern of displacement and exclusion for others.

Visser (2003: 94) argues: "Gentrification in the South African context does not need to take on the typical Anglo-American form in which it is generally closely associated with black-white displacement processes. On the contrary, in San Francisco black gentrification has been in evidence for some time", stating that something similar could be happening in South Africa. The author explains that there is a "long tradition of portraying working-class urban blacks as the victims of gentrification" as compared to literature that presents blacks as agents of gentrification (ibid: 94 – 95). Despite this optimistic view, the racialization of disadvantage in South Africa is not something that can be denied. Race and class will advertently enter into any discussion on gentrification (White, 2015).

Indeed, Visser (2002: 422) says: "the rather grisly question arises, as to whether we dare to argue bluntly against gentrification… on the grounds of displacement of the few?" Buntin (2015) says that gentrification very rarely has the negative effects of displacing disadvantaged blacks and believes that this is a widely held perception with no evidence to prove it. Buntin identifies the real problem as extreme poverty in cities and not necessarily as gentrification as a phenomena, believing that gentrification is linked to decrease in poverty levels.

However, it is important to note that there are very real conflicts in city arising because of competition for space which is perceived as being desirable in terms of location, quality or opportunity. This is a global phenomena. Cetin and Has (2014: 52 – 55) believe that these type of conflicts in cities are the result of neo-liberal urban policies and a reflection of the resilience of local communities in opposing government investments, and government collusion with the private sector "towards a re-configuring of the spatial economy to the benefit of a specific section of society instead of all urban actors… architecture and urbanism can be considered as spatial dimensions of an ideological war of different interest groups in cities… this struggle manifests itself as the polarisation between corporate sector and public… governments [that] use planning as a means of capitalist control over urban (public) space… space is an instrument of resilience through accommodating multiple identities in a single space on the one hand, and spreading the identity of 'disobedience' in multiple spaces on the other."

State sanctioned developments mean that "small players" in the built environment, and their livelihood strategies, are disrupted. On the opposite of this approach is inclusive transformation which promotes policy, legal and financial models that are inclusive and equitable. Space and planning are therefore highly political in the manner in which they affect the residents of cities.

4.0 INNER CITY JOHANNESBURG

The inner city of Johannesburg transformed from being an administrative and commercial hub to become characterised by the exodus of companies and an influx of people occupying the empty buildings legally and illegally. This transition was accompanied by a rise in crime and negative perceptions, seeing many inner city areas become "no-go" zones during the 90s and early 00s. However, it is also characterised by great dynamism and changed from a city for the rich and famous, to a place for the poor and displaced and is currently going through further transformation as the 'new place to be' for the young and entrepreneurial.

"White flight and black influx" characterised many South African city centres in the post-Apartheid era and when restrictions enforced on the black population were no longer in place. South Africa has also seen great change in terms of influx of Africans from neighbouring countries. Johannesburg has become a city of great diversity in its urban population.

The urban renewal, which is taking place in many parts of the inner city, is now focused on establishing a mixed-use environment of retail and housing. In some cases this has happened due to pioneering individuals and companies, but has also been greatly encouraged by focussed and targeted policy changes, regulatory facilitation and fiscal incentives. This is well documented by Gerald Garner (2011) in his book, 'Johannesburg, Ten Ahead: a decade of inner city regeneration'. The most well-known examples of urban renewal and intensive private investment are Braamfontein and Maboneng. Braamfontein is known for its student population and Maboneng is known for being a hub for artists, hipsters and tourists.

These transformations inevitably result in changes in the profile of the inhabitants – sometimes benefiting the original inhabitants through the diversity offered and increased access to jobs and facilities. Yet it can also result in some displacement and lack of affordability and the gradual "pushing out" of less privileged groups. What is interesting is that this process would be labelled as gentrification in the Northern cities, but in South Africa it seems to be labelled as regeneration (Lemanski, 2013: .5)

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Sometimes, displacement is less subtle and happens through forced evictions. Despite the Act (Prevention of Illegal Evictions from and Unlawful Occupation, of Land) (1988) which outlines the lawful procedures to be followed for evictions to benefit both the owners and illegal occupiers, there are claims that a blind eye is turned when inner city residents are being evicted with no notifications and no alternatives offered in terms of accommodation. At the very least, the tensions that are arising due to the very poor and more wealthy competing for space in the city does not seem to receive enough attention (Pilane & Moosa, 2015).

The Socio-Economic Rights Institute (SERI, nd.) is a good resource on evictions in general – and the battles poor communities face towards claiming space in the inner city. However, other reports also explain the difficulties of obtaining hard evidence with regards to evictions in Johannesburg (Social Housing Foundation and Urban Landmark, 2010: 31): "We found that there are more lease cancellations than evictions, with people leaving voluntarily, as well as illegal evictions in the form of 'constructive evictions' (lock-outs and services cut-offs) that are being used by landlords to get non-paying tenants out of properties, rather than following legal process. This was corroborated by the Chairperson of the Gauteng Rental Housing Tribunal, who stated that cutting electricity and lockouts were a common occurrence and these forms of 'constructive eviction' worked most of the time to get non-paying tenants out of properties, however illegal it is." (ibid: 5)

5.0 WHY JEPPESTOWN?

Jeppestown is one of the older parts of the inner city of Johannesburg. It contains historic buildings and is known for its industrial heritage, hostels and proximity to transport modes. But Jeppestown is also known for being in the news numerous times because of its disputed evictions (developers and property owners argue that they have followed legal procedures). With trendy Maboneng in the vicinity and a medley of interesting buildings and infrastructure with great capacity for reuse and rehabilitation, Jeppestown is being eyed by private developers and investors, and the city does not seem to have a clear strategy for addressing the resulting upheaval to local communities who already live under dire circumstances.

It is worthwhile to consider two developers in the Jeppestown area in Johannesburg who seem to have vastly different approaches, and this is reflected in the image portrayed by the two precincts. Bjala and Propertuity both operate in this area.

By analysing the business model, the characteristics of the developments, the demographics within the developments and through personal observations, the difference in approach and the degree of gentrification could be assessed.

6.0 MABONENG/ JEPPESTOWN, PROPERTUITY

The neighbourhood of Maboneng is very popular among tourists and young professionals. A highly rated backpackers operates in the area, and many young foreigners are making Maboneng their base to explore the wider city context.

Young people living in South Africa move to Maboneng for the attraction due to an identity of being a hip, cool and creative neighbourhood. This identity wasn't there before the Propertuity initiative. Propertuity develops empty industrial buildings into lofts and apartments. They sell these apartments, and the owner can then decide to rent out these apartments. The vision of Propertuity is to create an inclusive neighbourhood. By focussing on general good principles of street interface, furniture, cleaning, paving, planting, lighting, as well as using murals and other art forms, they have changed the identity of the neighbourhood. The tagline "Bring City Back" (Propertuity, nd.) states clearly what they are aiming for: Bringing the city back to its glory days and to the people. Propertuity owns 70 buildings at the moment in Johannesburg and Durban. A third of those buildings are situated in Maboneng (Anderson, 2016).

The area is subjected to a level of surveillance and is cleaned and serviced by the developers themselves. There is a school with opportunities for smaller businesses on its perimeter – however, these are mostly closed and unoccupied. The weekday reality is very different, as the suburb appears to be empty, as compared to the weekends when the neighbourhood is flooded with visitors to the restaurants, cafes, food markets and art venues. During the weekends, the suburb is buzzing with food markets, exhibitions and a clientele that seems to be highly affluent and powerful – judging by the types of cars and the costs they are willing to pay for services, food and drink.

While Propertuity is focusing on an inclusive neighbourhood real estate, prices are increasing due to popular demand of the lofts, rents are increasing. The restaurants and shops located in Maboneng are often exclusive and therefore excluding lower income groups to pass time in the precinct. This is supported by the income levels Propertuity is aiming to provide affordable housing for: between R12 000 and R30 000 a month. At the moment Maboneng is 70% residential, and Propertuity is aiming to get a critical mass of 20 000 people living and/or working in the precinct by 2020 (Anderson, 2016; TUHF, 2015).

According to the census carried out by Propertuity itself, 53 buildings will be redeveloped by 2017, containing 197 878 square meters of which 83 518 square meters are residential (Propertuity, 2016). This would mean that only 42% of the property is residential in 2017, 32%, in 2016 and 20.5% in 2015. These numbers are not in line with the targets stipulated by Propertuity above.

One starts to question: How many people have been brought into the area? What is the profile of these people in terms of income levels? What are the rental prices and sizes of the apartments/lofts? Are there publicly available numbers and statistics?

And how did Propertuity obtain the buildings, where there evictions? Propertuity, who initiated and developed Maboneng, have denied vehemently in the media that they have ever engaged in evictions despite scepticism from many circles – claims of evictions are unverified. Maboneng is perceived as a "symbol and a scapegoat" (Nicholson, 2015). Propertuity emphasise that the buildings they buy are always unoccupied. The precinct is expanding at a fast rate.

According to the Propertuity census (Propertuity, 2016), 200 contracts (out of an estimate total number of 600 contracts) have been analysed on ownership, rental, age, race, lifestyle, and property or rental price. These contracts have randomly been chosen according to the document. The outcomes seem to support the vision and public image Propertuity wants to portray.

When looking at the demographics in Maboneng we can conclude from the census that in 2015 939 people have moved to Maboneng and 8 589 people are working in the area. As stated above there are 588 units developed in 2015 with an average of 38.7m² and 1.6 people

living in each unit. It supports the statistics of the census that most people who are moving to Maboneng are single. According to the census most units sold or rented are in the 0 – ZAR500 000 (45%) and 0 – R2 000 (27%). This also underpins the average square meter size per unit. It is also interesting to see that the other popular price range is from R3 500 – R4 500. From the census we can see that ownership is dominated by white people (47%), whereas the tenants are mainly black (66%).

The census also showed a map of the density and use of buildings within a certain part of Maboneng. It contained buildings that are not owned by Propertuity as well. From this map, the heat map, one can conclude that the area is mainly commercial. 37 buildings from the 109 have a residential occupancy rate of 50% or higher.

This means that after office hours and during the week, the neighbourhood is relying on people living and working in the area creating a different atmosphere to the precinct. From our observations, the streets seemed very quiet, leaving one with a sense of feeling unsafe. Some areas are also very dark at night. Only the streets with a high residential density are well lit.

There are measures being taken by Propertuity towards achieving an inclusive neighbourhood. Workshops held in April 2014 in Maboneng on the perception of people living in and outside Maboneng of the precinct showcased that there was a lack of public spaces. Particular green spaces, supermarkets, playgrounds and a community centre were mentioned. In the interview with Business Day Live, Jonathan Liebmann, CEO of Propertuity, mentioned that Propertuity is now adding more convenience features to Maboneng such as a grocery store and a gym (Anderson, 2016).

Propertuity has also teamed up with SPARK schools to introduce a primary school in the area in line with the vision of Propertuity: innovation and inclusivity. The SPARK school has opened its doors in January 2015. SPARK stands for Service, Persistence, Achievement, Responsibility and Kindness. It aims is to deliver internationally competitive scholars and be affordable to the country. Their education system is online based. The tuition fee is R1 910 a month (Spark Schools, nd.).

RBM Holdings has now bought a third of Propertuity, which is believed to allow Propertuity to scale up its urban renewal plans. They can now start to create neighbourhoods instead of precincts (Anderson, 2016). It will be interesting to see what the influence of extra investment will be on the developments of Propertuity.

7.0 JEPPESTOWN, BJALA

Bjala Property is another private development company operating in Jeppestown, Johannesburg. They aim to develop housing in dilapidated industrial buildings for low-income to affordable housing. When redeveloping a building, Bjala has a policy of first prioritising tenants from the local area, who earn below a certain threshold, then tenants from outside the area can apply, but they need to earn above a certain threshold and need to give back to the local community in any way (BJALA, nd.). It is interesting that this threshold is not mentioned on their website. Neither does it state if they have needed to relocate people who lived (legally or illegally) in the buildings which are being upgraded.

Bjala likes to refer to themselves as "urbanists" rather than developers – the website states that Bjala is a "social urban enterprise developing solutions to urbanisation challenges: "We create innovative products and holistic solutions aimed at low-income communi-

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ties". Bjala Property has delivered 67 high quality affordable housing units (from R3 200 a month) at Bjala Square in its first phase and aims to provide a superior product to what is currently on offer for the affordable housing market for lower and middle-income groups (Mafadi, nd.). Phase two is nearing completion (TUHF, 2015). Their mission is to ultimately deliver 3 000 low cost innovative housing units (BJALA, nd.).

Bjala focuses on "people" as a critical ingredient in urban renewal – as the "software". This can be seen through the projects like Streetlight School and the rooftop garden that Bjala supports. The Streetlight School is situated in Bjala Square and has the goal to address South Africa's education crisis through low-income primary schooling (TUHF, 2015). Bjala and Streetlight Schools (nd.) share the vision of creating a completely integrated educational path starting with childhood development and moving on to primary, secondary and tertiary levels. Streetlight school fees are R60 per month.

However, the streets still seem empty/abandoned, except for the occasional group or individuals, and the buildings are boarded up with no real street interface being created – not even in the signature building of Bjala Square. The surrounding buildings follow suite with no street presence. The Bjala website also does not explain how they are able to retain the existing communities nor how can they make this into a financially viable business model – especially as in personal communication, they claim to use maximum salary criteria to permit people to rent in their properties. How can a private developer achieve this unless it is funded by grants or subsidies such as those used for social housing programmes? A Bjala representative laments the fact that agencies like TUHF use "punitive financing", in the sense that they lend developers working with affordable housing at higher rates than the banks.

It is difficult to understand how the aims of Bjala can be achieved without significant government support: "In the inner city of Johannesburg, TUHF stated that rentals were mainly in the range of R1 500 to R3 000 per month, and that the cheapest rental, in order to enable cost-recovery by the landlord, is R650 per unit per month, for a room in a housing development where the capital cost of provision was funded by government." (Social Housing Foundation and Urban Landmark, 2010: 27).

8.0 OTHER DEVELOPMENTS IN THE JEPPESTOWN, JOHANNESBURG AREA

It is interesting to see how the developments in Braamfontein and Maboneng have spurred a new wave of urban renewal.

Salt City is owned by Dawie Swart. He has a vision for his part of Jeppestown: "People will want to live, where they'll feel invested in the neighbourhood" He compares it to Maboneng although his buildings are situated a bit further from the actual CBD of Johannesburg. The company owns two buildings that are renovated to low-income apartments. Salt city aims to have 260 apartments, all for low-income earners. The units vary from R3 500 for a two-bedroom ($38 – 42m^2$) to R2 800 for a one-bedroom ($25 – 28m^2$). The developments have all been financed by TUHF (TUHf, 2014).

Marshalltown is the newest neighbourhood where developers are investing in transforming former industrial buildings to apartments. The marketing of these buildings is similar to what we have seen in Maboneng and Braamfontein. They have food markets in the weekends, murals and attract young professionals to meet up. But each development does have a different approach. One Eloff, in Marshalltown, is a development with very affordable apartments with a focus on young professionals rather than students.

In Hillbrow, individuals with the support of TUHF have upgraded many buildings and houses. Their business model is very interesting to comparison with other private developers; low-interest loans are obtained to be able to buy a building and upgrade or transform it. All of them target low-income groups who often live in the neighbourhood or adjacent neighbourhoods who are not able to find an affordable place to live in town (TUHF, nd.).

9.0 COMPARISONS AND DISCUSSION

We have asked the developers Propertity and Bjala to give us some insight in their projects, the questions mainly focussed on the demographics of their tenants and buyers. Bjala did not provide any information, while Propertity provided a census which seemed to reinforce their own vision and marketing strategy.

Both developers are rather secretive about their plans and who is actually renting or buying from them. The question rises if they have (in depth) insight in the demographics within their developments or if they are just not willing to share this basic information. It is assumed that the information should be available as anyone buying or renting a property needs to fill out contracts and forms containing basic information such as education level, income and age. Lack of information makes it more challenging for researchers to draw objective conclusions whether or not the developers are able to obtain the set goals of creating an inclusive neighbourhood without the negative effects of gentrification. It is concerning that this information seems not to be used for management of projects and

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future planning. It is also information that could be used as a regulatory target if certain conditions are enforced by city authorities for the granting of development permits.

Such information could also be used to reach the target group and to adjust strategies. The information can also be used to attract certain investors, companies and retail in order to strengthen the development. The future development and sustainability of the urban renewal is depending on this information as well. From developments in Europe and the USA we can learn that management during and after the urban renewal process is as important as the urban renewal in itself.

We have questioned whether urban renewal, upgrading and greater investment in the city must always lead to displacement – in direct or indirect ways. We have also questioned whether developers have been able to retain existing communities and through what means this has been achieved. However, the answers are not always available and evidence is difficult to obtain. The particular image portrayed by the developers is also a carefully considered part of their unique marketing strategies and approaches to the inner city. In the case of Bjala, the street image seems to be at odds with their intentions of people-focussed developments. In the case of Maboneng, the empty weekday streets and closed shops also seem to be at odds with claims that they have attracted a diverse group of people to the area and provided for a mixed use set up – which would be evident if diverse functions operated throughout the day. This conclusion can also be drawn from the heat maps in Propertuity's Census. Vibrant street activity during the weekends is also a case of "private space disguised as public space" (Asmal, 2015: 101).

In terms of interventions in the public space to create more interaction

and invite people from surrounding areas into the precincts Maboneng has implemented several projects. Green spaces with seating areas have been developed and the outdoor gym is attracting public. The development schools by Bjala and SPARK are interesting to witness. It seems that Streetlight schools are doing a better job in terms of being accessible; their tuition fees are much lower than the SPARK tuition fees. But they are a vital part of creating a neighbourhood for everybody, young and old.

It is evident that higher-level city strategies lead to change and project level interventions that may be perceived as being positive innovations or negative disruptions and exclusionary. The crime and grime linked to the decline of inner cities is a global phenomenon at certain points in their history. The strategies in the form of legislation and financial incentives that are used to address that do not address the tensions that arise and the competition that emerges for city space and opportunity. This is very evident in inner city Johannesburg.

While it is important to retain of the original and new inhabitants of the inner city, it is equally important to ensure that developments make business sense for investors and local government agencies; identifying how the roles of the city, wider city residents, specific neighbourhood residents, financial institutions can be re-conceptualised to allow for ease of access for diverse groups of people.

To achieve these, seemingly conflicting intentions, two things are essential:

- A government-supported developmental agenda to guide investment in the inner city, with an understanding that prime locations and access to opportunity cannot only benefit the investors and those that can

afford the resultant increase in costs that accompanies new developments.

- A different approach to appropriation of existing properties, as well as new projects in inner city infill sites, which aims towards rental differentiation within the same developments. There are design and financial tools to be able to achieve this and would make sense equally to government, as well as private investors. The authors argue that strict level/system separation need to be fully explored in South African cities – with particular focus on the Johannesburg inner city.

This latter point will facilitate mixed-use residential upgrades which are dynamic enough to allow for diversity of inhabitants (demographics in terms of gender, age, family structures, income levels), as well as various forms of tenure, spatial arrangement, layouts, size over time as markets change, general economic changes and family structures changes.

There are systems which aim to manage the "messiness" of complexity in the built environment in a democratic manner (ETH, Zurich, 2015; Osman, 2015(a) and 2015(b)). By separating the levels of the built environment to avoid conflict, spreading and delegating design decision making to groups and individuals over time, small and big players are given opportunity to equally participate. It also allows for all public domains and structures to be equally accessible, shared and used by everyone, irrespective of income level. Within this broader public and shared domain, much variation may be achieved. There are legal, financial and design tools to implement this.

A Bjala representative stated, when it was suggested that they experiment with an alternative method

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of delivery: "It is a luxury we can't afford". In reality, agencies such as Bjala cannot afford to keep designing/building/renovating in the same conventional way

10.0 CONCLUSION AND RECOMMENDATION

The developments in Maboneng and Braamfontein have definitely led to gentrification processes, but they are not as severe as one might think. Even though these processes are taking place, it also spurs many great new developments. Propertity was one of the first private developers who took a chance on the inner city of Johannesburg. Because of their success other developers joined in and took upon the challenge of making the inner city a city that can be worked and lived in. It launched yet another new era for the inner city of Johannesburg. To continue to benefit from the positive urban aspects that these developments bring to the city, it is important that the poor and the disadvantaged must be retained with targeted investments protecting existing affordable housing options in the inner city as well as increasing opportunity.

Another option would be that the city demands a certain percentage of developments to be targeted and earmarked for the low and middle-income groups. "Inclusionary Housing Policy" which could enforce this on new developments, is slow and limited in its implementation (SERI, 2010). The city of Johannesburg would need to encourage interdisciplinary approaches and link developers to social housing institutes and individuals who are developing affordable housing options.

It would also be interesting to see if an experiment would be possible in which tenants implement their own finishes and fittings in the apartments – allowing for rent differentiation within a shared support infrastructure. A developer would

implement the basics like plumbing and electricity and would then rent it out for a very low rent. This means that government subsidies may be used in the support infrastructure rather than the infill. It also means that a new industry may emerge where bigger construction companies provide the support infrastructure and smaller companies support the infill industry.

This would assist greatly in supporting the 'chameleonic' character of African cities as outlined by Viana, where "open systems for hybrid urban spaces" are proposed (Viana, 2012: 184). There are practical tools to support this – maintaining permanence and robustness at one level, while allowing for dynamic change and transience at another. Urban renewal approaches in inner city Johannesburg could greatly benefit from these approaches and could become pioneers in mapping a way forward for inclusive urban interventions.

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Environmental sustainability: Impacts of construction activities

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Abstract:

As a result of pollution, deforestation and other environmental challenges, construction process and activities have contributed in no small measure to environmental degradation. One of the fundamental tri-pod of sustainability is keeping the environment safe for the inhabitants. This study therefore examines the impact of construction activities on the environment with a view to highlighting mitigating approaches and their enforcement strategies. A quantitative research methodology was adopted, and a convenient sampling technique was employed to gather from primary sources. Questionnaires were administered on construction professionals, that is, architects, quantity surveyors, engineers, safety officers, as well as construction and facility managers. Construction activities impact badly on the environment due to waste generation, resource consumption (such as water, electricity and fuel consumption during the construction process), noise pollution, air pollution due to dust from construction activities, as well as bad odours from large diesel powered vehicles/construction machinery. Although, some of these impacts cannot be completely eradicated, there are a number of approaches that could be used to mitigate them. These include Environmental Impact Assessment (EIA), green building (sustainable construction), Quantitative Risk Assessment (QRA), Environmental Management System (EMS) and Environmental Protection Agency (EPA). Therefore, an effort should be made by government and construction stakeholders to efficiently incorporate and enforce the available approaches/initiatives through constant monitoring of the construction process from start to completion and legislative laws that spell out punishment as response to violations. Awareness, learning and trainings of construction stakeholders on the impacts of building construction activities on the environment is also recommended.

Keywords: Construction activities, Construction Industry, Environment, Green building, Sustainable construction.

1.0 INTRODUCTION

Construction activities involve consumption of various form of resources including raw and finished materials that are derived from various sectors of the environment. The impact of these activities on the environment cannot be over-emphasized. In this regard, ways of controlling, managing and reducing these environmental impacts have been developed and implemented from time to time. Construction project performance and success has traditionally been measured in terms of duration, cost and quality. According to Gangolells, *et al.* (2011: 558), the environment has become the fourth variable. Fuertes *et al.* (2013) stated that while economic development of a country can lead to an improvement in the quality of life of her citizens, the resulting environmental damages may affect human health and ultimately undermine the economic development and growth. Therefore, it is imperative for the construction industry to always take into account the environmental impacts of construction activities as an important factor of project success. According to Tam, Tam and Tsui (2004: 9), the construction industry plays an important role in meeting the needs of any society, as well as enhancing the quality of life of people. However, the responsibility for ensuring that activities of the industry and its products are consistent with environmental guidelines, standard and policies is an aspect that still needs to be defined.

One of the approaches that is widely used to reduce environmental impacts is Environmental Impact Assessment (EIA). EIA is defined as a process that assesses and evaluates possible impacts of activities before the commencement of a project or development with a view to plan and mitigate the possible impacts (Murombo, 2008: 8). This helps managers and concerned stakeholders to make decisions on whether the project or development should proceed and on the required condition for the project to proceed. Over the years, a number of other approaches have been adopted in various sectors of the economy including the construction industry (Fuertes *et al.,* 2013; Dong & Ng, 2015; Ametepey & Ansah, 2015). These include: Environmental Protection Agency (EPA), Environmental Management Systems (EMS) and Life Cycle Assessment (LCA). All the approaches have different

purposes, functions and procedures to implement them. However, one thing they have in common is that they are all important tools for conservation of the environment.

The Government plays an important role in this regard, in terms of commitment towards the different approaches through appropriate legislations. According to Murombo (2008), the South African government has put into practice environmental legislation for sustainable use of resources and conservation of natural resources, which addresses social, economic, and ecological issues. The implementation of laws and policies provided in this regard is of great importance, as it helps with the enforcement of the approaches. Wasserman (2011) states that full implementation of these approaches do not entirely lie with the Government. Public participation is also necessary for the actualisation. In this study, the common environmental impacts of building construction activities were identified and assessed, current approaches to encourage the minimization of the impacts were evaluated and different means to enforce the initiatives were also discussed.

2.0 LITERATURE REVIEW
2.1 Construction activities
According to the Gauteng Growth Development Agency (2015), the construction industry plays a crucial role in the economy of South Africa by providing more than one million jobs and generating revenue of approximately R267bn annually. However, Ametepey and Ansah (2015) concluded that construction activities cause an impact on the environment through the process of construction and the life cycle of development. These impacts start from the initial work on site, through the actual construction, operational or usage period and to the final demolition or re-use. According to Li and Zhang (2010), the construction industry is responsible for the use of a very high volume of natural resources and the generation of a great amount of pollution. This is as a result of energy consumption during extraction, preparation, transportation and usage of raw materials.

2.2 The environment
According to Smull and Bourne (2012) every human being responds to the environment in which they find themselves in different ways depending on their level of satisfaction by what surrounds them. Certain things must be present in the environment and others must cease to exist for human beings to be satisfied or content in any environment. When an environment is harmful or extremely unpleasant, it is what the environment allows or accommodates that causes people to have complaints about the environment. The typical emotional response to a harmful or unpleasant environment is either anger or depression. By paying special attention to people's behaviour and their reaction to certain conditions, issues that are dissatisfying about that particular environment, and what needs to change, can be identified.

While there are some things existing within an environment that may prove to be toxic or dangerous, it does not necessarily mean that they will be toxic to everyone concerned. Some things are toxic and dangerous to some people, but not to others. Consequently, there are some factors that are toxic and injurious to all and cannot be tolerated. When critical aspects of what is important to the public are absent, this will result in making the environment less healthy and less safe for the people.

2.3 Construction activities and environment
Most countries are faced with many environmental challenges due to the construction of different types of infrastructure. These include such things as soil alteration and excessive use of resources. Gangolells et al. (2011) stated that one of the critical issues that involve the greatest level of uncertainty is in the identification and assessment of environmental impacts. It is important to begin with identifying the impacts and followed by the assessment.

Dong and Ng (2015) noted that due to the various challenges involved with the building of construction activities, including differences in locality, site, parties involved, as well as the tolerance levels, it makes it difficult to predict, manage and address environmental impacts. There are a number of approaches/ initiatives that aid sustainable use and protection of the environment. These include EIA, EMS, EPA, LCA, Environmental Management Framework (EMF) and Green Building (Sustainable Construction).

According to Fuertes et al. (2013), some effective approaches relating to the assessment of environmental impacts have been largely overlooked. In order for the approaches to be efficient and effective, Ametepey and Ansah (2015) concluded that it does not end with just the implementation of the approaches, but enforcement has to be taken into account. The enforcement of these approaches contains factors such as monitoring, controlling, maintenance, as well as mitigation. Furthermore, participation in the approaches should not be undertaken as a once off event, but a sustained and continuous iterative process. An iterative process that begins with the identification of the problem, through project conception/formulation, and final approval of the project (Murombo, 2008).

Notable environmental issues include global warming, energy crisis and ozone depletion. In order to control environmental pollution and sustain the development of infrastructure, sustainable development was proposed by the World Com- **017**

mission on Environment and Development (Fuertes *et al.*, 2013). This was explained as the development that meets needs of the current generation without compromising the ability of future generations to meet their own needs.

3.0 RESEARCH METHODOLOGY

A descriptive survey design was adopted for this study because it provides an adequate representation of the respondents' characteristics in term of behaviour, opinions, abilities, beliefs, and knowledge of a particular situation. This design was undertaken so as to meet the main objective of the study, which is to assess the environmental impacts of building construction activities. The study population are professionals in the South African construction industry. These include Quantity Surveyors, Construction Managers, Architects, Engineers and Safety Officers who have the required experience and are currently involved in at least one construction projects in the Gauteng region of the country.

Questionnaires were adopted as research instrument for the study and were distributed using a convenient sampling method. It was designed such that the respondents could answer the questions with no hassles; straightforward, clear and unambiguous language was used. The questionnaire consisted of a cover page, which outlined the topic and purpose of the research, as well as the details of the researcher, followed by other sections in relation to various objectives of the research. Confidentiality and anonymity were guaranteed to the respondent. Furthermore, the respondents were made aware that they were not forced to participate, and that should they have any queries or comments, or may wish to know the findings of the research, they are welcome to contact either the researcher, the supervisor, or the institution. The questionnaire took approximately 10 minutes to complete. The questionnaire made use of clear and unambiguous language, so as to ensure that the respondents understood the questions being asked and therefore could respond accurately. Close attention was paid to every question so as to make sure that biased questions would be avoided.

A 5-point Likert scale was adopted for enviromental impact of construction activities, as well as enforcement of measures to mitigate the challenge. The scale ranged from extreme negative, through neutral value, to extreme positive. Mean Item Score (MIS) and Standard Deviation (SD) was calculated using SPSS 21 and the resulting values were used to rank the variables in descending order. For measures to combat the impact, respondents were asked to select as many factors as relevant and percentile was used to analyse this aspect and rank the factors accordingly.

4.0 FINDINGS AND DISCUSSION

65 questionnaires were administered, but due to non-responsiveness of some of the respondents and time contstraints, 54 were retrieved. However, 50 of the completed instruments were adequately completed and certified fit for further analysis.

4.1 Respondents' information

Findings from the analysis of the research instrument indicates that 66% of the respondents are male and 34% are female with an average years of experience of about 7 years. 18% are Architects, 32% are Quantity Surveyors, 12% are Engineers, 8% are Construction Managers, 4% are Facilities Managers, and the remaining 4% are site agents.

4.2 Enviromental impacts of construction activities

The basic environmental impacts of construction activities as indicated in Table 1 are resource consumption (such as water, electricity and fuel consumption during the construction process) and waste generation. Others are air pollution due to dust from construction activities, noise pollution, destruction of the ecosystem and air pollution due to bad odours from large diesel powered vehicles/construction machinery. The least impact is related to effects on biodiversity, soil alteration and generation of volatile organic compounds (VOCs) as a result of vehicle movements and machinery used in construction. The SD values also indicate that there is agreement among respondents in the assessment of the factors

4.3 Combating environmental impact of construction activities

Construction experts were asked about the approaches that are in place to mitigate environmental impacts of construction activities. Using their frequency of selection and percentage calculated in Table 2, Environmental Impact Assessment (EIA) and Green Building (Sustainable Construction strategy) are the two important initiatives. Others are Environmental Management System (EMS), Life Cycle Assessment (LCA), Environmental Management Framework (EMF) and Strategic Environmental Assessment. No other approach was specified by any of the respondents indicating that the selected list of initiatives was expansive.

Furthermore, steps to be taken to enforce the approaches/initiatives for the minimisation of environmental impacts of construction activities are indicated in Table 3. These include constantly monitoring of the construction process from start to completion, enforceability and audit ability of the strategy, linking mitigation commitments to monitoring and legislative laws that spell out punishment as response to violations. Others are transparency and accountability in contract admin-

Environmental impacts	MIS	SD	Rank
Resource consumption (such as water, electricity and fuel consumption during the construction process)	4.02	0.829	1
Waste generation	3.92	0.709	2
Air pollution due to dust from construction activities	3.72	0.663	3
Noise pollution	3.60	0.551	4
Destruction of the ecosystem	3.46	0.289	5
Air pollution due to bad odours from large diesel powered vehicles/construction machinery	3.44	0.755	6
Generation of greenhouse gas emissions as a result of vehicle movements and machinery used in construction	3.41	0.597	7
Vibrations due to heavy construction machinery	3.35	0.330	8
Generation of chlorofluorocarbon (CFC's) as a result of vehicle movements and machinery used in construction	3.26	0.608	9
Effects on biodiversity	3.10	0.618	10
Soil alteration	3.08	0.472	11
Generation of volatile organic compounds (VOC's) as a result of vehicle movements and machinery used in construction	2.96	0.995	12

Table 1: Environmental impacts due to construction activities

Approaches/initiatives	Percentage	Rank
Environmental Impact Assessment (EIA)	21.39	1
Green Building (Sustainable Construction)	20.86	2
Quantitative Risk Assessment (QRA)	12.30	3
Environmental Management System (EMS	11.23	4
Environmental Protection Agency (EPA)	10.70	5
Life Cycle Assessment (LCA)	9.63	6
Environmental Management Framework (EMF)	7.49	7
Strategic Environmental Assessment (SEA)	6.42	8

Table 2: Approaches to combat environmental impacts

Mitigation method	MIS	SD	Rank
Constantly monitoring the construction process from start to completion	4.46	1.150	1
Enforceability and audit ability of the strategy	4.22	1.137	2
Linking mitigation commitments to monitoring	4.18	1.008	3
Legislative laws that spell out punishment as response to violations	4.15	0.829	4
Strict disciplinary measures from professional bodies	4.12	0.957	5
Organisations to have programs of awareness	3.98	0.656	6
Transparency and accountability in contract administration	3.94	1.026	7
Continuous professional development	3.84	1.025	8
Delegation of tasks	3.71	0.638	9
Appointment of highly experienced construction professionals	3.70	0.812	10
Devising contingency plans	3.70	1.139	11
Checking company profiles and confirming qualifications	3.44	0.718	12
Giving the public and government access to commitment documents	1.08	0.453	13
Making follow up actions	0.46	0.968	14

Table 3: Enforcement strategies for environmental control measures

istration, checking company profiles and confirming qualifications, delegation of tasks and continuous professional development. On the lower end are giving the public and government access to commitment documents and making follow up actions.

4.4 Discussion

In support of Zolfgharian (2012), some impacts of construction activities on the environment are so minor that they may be considered as acceptable, whereas some are highly significant and cannot be ignored. However, there are certain environmental impacts of construction activities that are significant such as air pollution, noise pollution, resource consumption, destruction of the ecosystem and waste generation. This is in agreement with Gangolells *et al.* (2011) and Ametepey and Ansah (2015). Previous studies from Ruckelshaus (1992), Rendell and McGinty (2004), Fischer (2006), Jay *et al*. (2007) and Murombo (2008) revealed that there are a number of approaches/initiatives that are available in combating environmental impacts, both national and internationally. Some of these are regulations that should be adhered to so as to protect the environment. In agreement with these authors, the findings from this study indicate that EIA and Sustainable Construction are the most widely used approaches to combat environmental impacts.

5.0 CONCLUSION AND RECOMMENDATION

Construction activities impact badly on the environment. Though some of these impacts cannot be completely extinguished, there are a number of approaches/initiatives that have been put in place in order to minimise and control these adverse environmental impacts. However, enforcing these approaches has been a major challenge. The impacts of construction activities

include waste generation, resource consumption, noise pollution, air pollution destruction of the ecosystem and generation of greenhouse gas emissions as a result of vehicle movements and machinery used in construction,

The approaches/initiatives currently used to mitigate these impacts are Environmental Impact Assessment (EIA) and Sustainable Construction. However, to ensure the enforcement of the mitigating approaches, the construction process needs to be monitored from start to completion, legislative laws that spell out punishment as response to violations must be put in place, and there should be strict disciplinary measures of members by various professional bodies. There should be transparency and accountability in contract administration and continuous professional development should be encouraged. An effort should be made to efficiently incorporate the above mentioned approaches/initiatives into construction projects right from the inception stage. Careful consideration should also be taken to ensure that these approaches are used efficiently and according to standard.

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A synergy in sustainable rural estuarine human settlements development where natural environment presents opportunities for socio-economic development

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Abstract

The South African Housing White Paper set out the vision on the establishment of viable, socially and economically integrated communities, situated in areas allowing convenient access to economic opportunities, as well as health, educational and social amenities. Settlements should also be environmentally sustainable, enable multiple livelihood options and improve the resilience of rural communities to the effects of climate change and other stresses.

To supplement this, coastal regions are known to provide critical inputs for industry including water space for shipping and ports. Also opportunities for recreational activities such as fishing, diving and other raw materials including salt and sand. In all this, the poor are reportedly often underprivileged to take up opportunities, respond or cope with the threats generated by changes on the coast. Some may benefit from diversity of general development programs aimed at rural poverty reduction and community development. However, in other areas the poorest may be unable to benefit from such development initiatives; especially when such developments involve costs.

The current paper lures international, national and local discussions on the state of infrastructure development, socio-economic activities and available facilities, as well as the adequacy of coastal management systems and plans with specific focus to rural poor residing along estuarine. It portrays how natural environment presents opportunities for sustainable human settlements development and finally recommends a synergy for socio-economic development in rural estuarine.

Keywords: human settlements, rural estuarine, coastal economy, infrastructure, development

1.0 INTRODUCTION OF THE DISCUSSION

Blue Economy is in line with and mutually supportive of the principles of the Green Economy concept. The earlier is further a tool that offers specific mechanisms for coastal countries to address their sustainable development challenges. The rationale is that three-quarters of the Earth's surface is covered by oceans and seas, which are both an engine for global economic growth and a key source of food security.

The Food and Agricultural Organization (FAO) embraces the blue economy concept in the Global Initiative on Blue Growth in support of food security, poverty alleviation and the sustainable management of aquatic resources. The initiative is a cross-cutting global activity with global, regional and national impact on increasing food security, improving nutrition, reducing poverty of coastal and riparian communities and supporting the sustainable management of aquatic resources, through participatory processes and actions to improve implementation at local levels. This discussion is stimulated by the general assumption that there are rural settlements nursed with great potential for socio-economic growth. The latter is seen to be driven by location of such rural settlements in the river estuarine, yet the majority of such communities remains impoverished.

2.0 CONCEPTUAL BACKGROUND OF THE DISCUSSION

The South African Housing White Paper (1994) set out the vision on 'the establishment of viable, socially and economically integrated communities, situated in areas allowing convenient access to economic

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opportunities, as well as health, educational and social amenities' (DOH, 1994: 19). Settlements should also be environmentally sustainable, enable multiple livelihood options and improve the resilience of rural communities to the effects of climate change and other stresses (Sauls, 2016). Rural settlement patterns in the world today in view of Lewry, (2015) are greatly influenced by economic forces that have encouraged a steady increase in farm size and reduction in farm population. Lewry, (2015) further argues that 'rural settlements patterns, while still reflecting earlier influences, continue to respond to the shifting socio-economic conditions'. 'Rural settlements patterns in Saskatchewan have been greatly influenced by the policies and practices implemented in the late 19th century to promote the spread of agriculture. And the density of rural settlements varies across the province. This is influenced by a number of factors including the characteristics of the physical environment and economic orientation of the land' (Lewry, 2015).

Migiro (2010), addressing delegates at the opening of World Water Day, said 'the sustainable management of water resources was vital for economic growth and achieving all the Millennium Development Goals. It was also regarded as central to public health, food security and stable societies'. 'Coastal lagoons are water resources known to support a range of natural services that are highly valued by society, including fisheries productivity, storm protection, tourism, and others' (Anthony *et al*, 2009). Kauffman (2011) supported this by quoting researchers who conducted a series of studies. The latter indicated that 'Delaware River and Bay was worth hundreds of millions if not billions of dollars two decades ago'. 'The Delaware River Basin was confirmed to be a jobs engine that supports 600 000 direct and indirect jobs with $10

billion in annual wages in the coastal agriculture, ecotourism, water/wastewater, ports, and recreation industries' (Kauffman, 2011).

'Currently, more than 20 million people live along the Coastal East Africa shoreline and this number is expected to double before 2030. Their survival is dependent on the region's natural resources which are healthy forests, rivers, mangroves, reefs and oceans' (Kabubu, 2015). In the same way Glemarec, (2004) reported that, 'the coastal ecosystem of West Africa are highly significant in terms of globally important biodiversity. The coastal zone supports diverse and important ecosystem including rocky shores, sandy beaches, deltas, estuaries, coastal wetlands, coral reefs, sea grass meadows and lagoons. All these types of coastal ecosystems not only possess a rich biodiversity, but also constitute important resources upon which the society and the economy are based'.

South Africa River Health Programme (2015) reveals that, 'Human and economic well-being are directly or indirectly dependent on the goods and services provided by river systems. For example, people obtain drinking and irrigating water from rivers. Fish, and reeds may be harvested from rivers. Picnics held on the riverbanks and baptisms performed in the river pools. Some goods and services provided by rivers are important for human survival, such as water for drinking and subsistence fishing. Other uses of goods and services support social needs and economic growth'. Against this background it is alleged that coastal line adjoining River Estuarine award vital opportunities for socio-economic development of its human inhabitants.

3.0 THE FUNDAMENTAL PHILOSOPHY OF THE DISCUSSION

This discussion seeks to explore literature on how coastal areas adjoining river estuarine may influence socio-economic opportunities of its surrounding community. This will be achieved through several exploratory themes which include: to investigate how infrastructure may be perceived to satisfy the socio-economic development needs of community residing at rural estuarine; to determine whether appropriate facilities are associated with socio-economic activities in rural estuarine; and lastly to ascertain the adequacy of available management systems and implementation plans for the socio-economic development of rural estuarine.

The objective of this discussion is to lead the development of the conceptual framework for sustainable rural estuarine settlements development; to guide planners and policy-makers on linking estuarine to coastal human settlements development with the aim to encourage planning, development and implementation of appropriate infrastructures, that gears-up the participation of rural estuarine community in socio-economic activities; to mould a prototype for sustainable rural estuarine settlements development, which awards an opportunity for community members to access facilities that promotes socio-economic activities; and lastly to explore the effectiveness of current socio-economic management systems and implementation plans in addressing the development of rural estuarine settlements.

4.0 STATE OF COASTAL DEVELOPMENT IN AFRICA

'South Africa is a developing country that has a high population density along its long coastline and a high percentage of coastal inhabitants living in poverty. Its coastline

is over 3 000 km long and is the home to millions of inhabitants. The point of departure for this discussion is an assumption that there are well located villages at the coastal area adjoining a river estuarine which presents a great potential for socio-economic growth. There is also allegations that the available infrastructure, facilities, as well as development systems and tools, sanctions limited access for the majority of economically marginalized community members to partake on socio-economic activities associated with River estuarine and coastal fringes; the notion also supported by Keal, (2008). Thereto few economically advanced community members stand a better chance to such benefits. However, all these allegations are subject to confirmation through a comprehensive discussion.

Relatively, Kabubu (2015) believes that, coastal forests and savanna woodlands to mangroves and coral reefs is one of the continent's most biologically diverse areas. These important habitats are reported to be a home to abundant wildlife and to sustain the livelihoods of millions of people. Kabubu (2015) further accentuates that coastal East Africa, including Kenya, Tanzania and Mozambique, shares a coastline and innumerable of essential and key natural resources, forests and a variety of ecosystems which support rich biodiversity. Unfortunately, for all its natural resources, Coastal East Africa is seen to have some of the highest rates of poverty in the world.

5.0 IDENTIFIED DEVELOPMENT GAPS IN ESTUARINE DEVELOPMENT

The Local Economic Development Plan for Hamburg, (2011) was developed with aims to foster and maintain a higher quality of life in Hamburg village by unlocking local economic development opportu-

nities. The Plan stresses that 'a good LED Plan typically calls for improved infrastructure and services; the creation of sustainable business opportunities based on the strengths and potential of the area; and employment that is related to opportunities that may exist or could be developed in the area'.

In view of the current discussion, the reviewed reports, development plans and programs never attempted to define the concept of rural estuarine settlements development. The latter should involve human habitation and the management of estuarine development. The development of human habitation includes socio-economic opportunities for sustainable communities, which involves residential infrastructure planning and development, provision of appropriate facilities, as well as the development of effective management systems and well-resourced implementation plans to support effective socio-economic activities. The Local Economic Development (LED) Plan for Hamburg solely suggests the areas of intervention and further identifies the role players without teasing out the process towards the realization of the implementation of such plan. This discussion seeks to suggest a concept of estuarine human settlements as an edition to the body of knowledge, then develop and unpack the socio-economic development implementation approach that is inclined to the proposed definition.

6.0 KEY CONCEPTS

In this discussion 'coastal area' is defined as the interface or transition area between land and sea that is diverse in function and form; it is dynamic and does not lend well to definition by strict spatial or natural boundaries.

The place, including terrestrial areas where a river flows into the ocean, is termed a river estuarine in the context of this discussion.

The term 'socio-economic' in this discussion signifies the way the combination of both social and economic factors affects, shapes or influences something.

'Green development' in this discussion is a land use planning concept that considers environmental implications of development, which includes rural settlements planning, environmental planning, building architecture, landscape architecture and community building.

The totality of human community with all the social, material, organizational, spiritual and cultural elements that sustain it will be used to define human settlements in this discussion.

This discussion considers 'rural' as an area outside the limits of a city or a town where people primarily farm or depend on natural resources, under traditional or/and a local municipality that includes village, small town and any settlements in former homelands.

'Blue economy' refers to marine based economic development that leads to improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.

Basic physical and organisational structures and facilities such as buildings, roads, power supply needed for the operation of a society or enterprise will be considered as infrastructure in the context of this discussion.

7.0 SATISFACTION OF INFRASTRUCTURE ON SOCIO-ECONOMIC DEVELOPMENT NEEDS OF ESTUARINE COMMUNITIES

Inadequate infrastructure according to Pottas, (No date) remains a major obstacle towards Africa achieving its full economic growth potential; 'in many African countries, infrastructure limitations inhibit productivity as much as other

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institutional challenges like weak governance, onerous regulation and lack of access to finance'. The recent discussion on infrastructure confirms that, 'poor state of infrastructure in sub-Saharan Africa reduced national economic growth by two percentage points and cut business opportunity by as much as 40% every year' (Briceno-Garmendia, 2010). Also poor choices on the location of infrastructure was viewed by Benoit, Dahlia, & Peter, (2015), as a limitation to environmental governance coupled with population pressure and overexploitation for the implementation of West Africa Coastal Areas Management Program (WACA). 'The demand for resources and infrastructure development in Africa's coastal zone is now putting immense pressure on its fragile ecosystem which is under severe threat from developmemnt related activities' (Yannick, 2004). The current discussion leaning on this background proposes further exploration on the state of infrastructure on coastal estuarines with specific focus on river estuarine. There seems to be limited literature that seeks to address infrastructure with a specific focus on micro-economic opportunities for estuarine settlements, especially in rural coastal lines. Infrastructure is relatively a permanent and foundational capital investment that underlies and makes possible economic activities of a community. Infrastructure alone without proper facilities may not be effective in its service delivery aim. The next section will explore literature relevant to facilities and align it with socio-economic activities in rural estuarine environment.

8.0 APPROPRIATE FACILITIES TO PROMOTE SOCIO-ECONOMIC ACTIVITIES FOR ESTUARINE COMMUNITIES

Facilities are defined in Business Dictionary as permanent, semi-permanent or temporary structural assets established or installed for the performance of one or more specific activities or functions. Izevbekhai, (2015) believes that 'socio-economic activity in the communities will grow when the facilities to support it are provided. If a facility is carefully developed to have multiple functions, more benefits will be derived and greater socio-economic activities promoted. Some facilities have advantages of providing social, economic, environmental and cultural benefits from a single source to communities and the society' (Izevbekhai, 2015).

To support this argument, Izevbekhai, (2015) further mentions that 'community organisations can organise cultural dance events, food festivals, carnivals, sales of local goods, and other socio-economic activities in the open green field to promote local economic development (LED). The same green field may be turned to a sleeping camp at night where the members of the community with their sleeping bags can enjoy the cool night breeze under secure environment, saving them some electricity cost'. This section supports the notion of utilising easily accessible facilities to promote access to socio-economic activities in rural estuarine.

9.0 THE ADEQUACY OF STRATEGIES AND MANAGEMENT SYSTEMS FOR IMPLEMENTATION OF SOCIO-ECONOMIC DEVELOPMENT PROGRAMS IN ESTUARINE

9.1 Blue economy as a vehicle for coastal development

Each sovereign country is responsible for its own resources and sustainable development. Economies in developing countries are more directly related to environmental exploitation. Conservation and sustainable use of biodiversity has broader sustainable development and poverty eradication in enabling the establishment of a Blue Economy. Coastal and Island developing countries have remained at the forefront of this Blue Economy advocacy, recognising that the oceans have a major role to play in humanity's future and that the Blue Economy offers an approach to sustainable development better suited to their circumstances, constraints and challenges. The Blue Economy paradigm constitutes a sustainable development framework for developing countries addressing equity in access to, development of and the sharing of benefits from marine resources; offering scope for re-investment in human development and the alleviation of crippling national debt burdens.

10.0 THE CURRENT STATE OF ESTUARINE MANAGEMENT IN SOUTH AFRICA

In support of the notion that 'coastal region, areas are home to a large and growing proportion of the world's population' Creel, (2003:1) stated that 'approximately 3 billion people live within 200 kilometers of a coastline'. The reported coastal world's population figure is expected to double by 2025. Creel, (2003) further accentuated that 'many people in coastal regions produced ample economic benefits'. These benefits include 'improved transportation links, industrial and urban development, revenue from tourism, and food production'. In this case, such benefits seem not to be adequately realized, especially within people living below poverty line. The South African National Estuarine Management Protocol, (2013) is more inclined to biodiversity management and less inclined to the management of human habitation. On the other hand, the national priority list for the development of Estuarine Management Plans (EMP) targets excludes some River Estuarine in the country (Van Niekerk & Turpie, 2012: 123 – 125).

The urgent need for Estuary Management Plans (EMPs) became apparent during the development of the new Integrated Coastal Management Bill (ICMB). Estuaries and the management thereof have not been adequately addressed by past marine, freshwater and biodiversity conservation Acts. Estuaries and estuaries management have been marginalized due to the fact that they do not fit the ambit of any one government department. Estuaries and the management thereof now form an integral part of the new ICMB which outlines a National Estuary Management Protocol (NEMP). The protocol identifies the need for the development of EMPs, as these would help to align and coordinate estuaries management at a local level. The Estuary Management Authority (EMA), supported by the Estuary Advisory Forum (EAF), should approach tertiary and research institutions such as universities and the Centre for Scientific and Industrial Research (CSIR) for assistance.

11.0 A RECOMMENDED SYNERGY FOR SOCIO-ECONOMIC DEVELOPMENT IN RURAL ESTUARINE COMMUNITIES OF SOUTH AFRICA

First and foremost, this discussion seeks to propose the concept of rural estuarine settlements development, thus, 'the development of human habitation that considers the promotion of existing socio-economic opportunities, infrastructure planning and development, provision of appropriate facilities, effective management systems and well-resourced implementation plans to support effective socio-economic activities for sustainable estuarine communities'.

Infrastructure alone without proper facilities may not be effective in its service delivery aim. This discussion supports the notion of utilising easily accessible facilities to promote access to socio-economic activities in rural estuarine. This should lend from the Blue Economy paradigm which constitutes a sustainable development framework for developing countries addressing equity in access to development and sharing benefits from marine resources, also offering scope for re-investment in human development and the alleviation of crippling national debt burdens. Also the Estuary Management Authority (EMA) should shift the focus to the entire estuarine environment, therefore including human settlements planning and development in its protocol. Further research and participatory appraisals that involve estuarine communities are recommended for a closer view and to expand the insights of the current discussion.

12.0 CONCLUSION

Infrastructure planning and development along estuarine environments are less considerate of rural livelihoods. Available literature also clarifies that current interventions are more inclined to biodiversity management, as well as high commercial market activities, but consider less the issue of settlements planning especially on rural estuarine. This identifies the estuarine development gap that needs to be filled for the sustainability of settlements along rural estuarine. This can be possible through development of inclusive programs that aim to strike a balance between natural habitat and its surrounding communities. Further literature wined to be explored for further insight on estuarine development with specific focus to the socio-economic development of rural estuarine. This should also include the introduction of estuarine development concept through participatory interaction with one or more rural estuarine communities in African continent.

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Integrated sustainable human settlements in South Africa: Investment theoretical arguments

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Abstract

Integrated sustainable human settlements are a national priority to integrate communities and push for transformation in South Africa. There has been substantial Government investment in housing since 1994 (R45 billion in Gauteng Province alone). It is logical to expect that such investments into a neighborhood would have a positive impact on the existing housing market. However, there has been no work done so far to form theoretical arguments guiding the implementation of such investments in the form of integrated sustainable human settlements widely known as mixed income housing. The study aims at drawing theoretical arguments for South Africa in regards to how 'mixed income housing' can be improved in a way that such settlements attract investments and maintain value in the future. Drawing from global experiences, academic articles and desktop analysis of relevant industry materials, the paper puts forward theoretical arguments on how a 'New Integrated Investment City' model can best be improved in terms of policy and regulation, involved stakeholders, location, design, finance, management and sustainability in order to reduce investment risk associated with such developments.

Keywords: Integrated Sustainable Human Settlements, housing policy, investment risk-return trade-off, poverty reduction, theoretical arguments

1.0 INTRODUCTION

Residential markets have gone through changes where social housing is generally a component in mixed-tenure developments where public private partnerships do tap into private funds (Whitehead and Scanlon, 2007). This is a paradigm shift beyond the social housing subsidized by governments alone. These new housing initiatives generally known as Inclusionary Zoning (IZ) or Mixed Tenure (MT) or Mixed Income Housing (MIH) as part of Integratrated Sustainable Human Settlements (ISHS) pose as a complex phenomenon touching across spheres of politics, geography, real estate economics, sociology, psychology, law, planning and development disciplines in its goals of integration and poverty alleviation. High levels of Not in My Back Yard (NIMBY) could be an indication of implementation flaws of the current MIH models. A relevant question

becomes: What relevant theory is there to reduce NIMBY and thereby achieve the intended goals of inclusionary housing (urban development, integration and transformation)? This provides a new thinking into improving the current mixed income housing model. The investment-theory-based arguments postulated in this paper allow for an exploration of possible unsatisfactory effects originating from the current implementation flaws of what South Africa faces from an investment theory perspective. The paper puts forward theoretical strategies for poverty alleviation (integrating low-income families) and desegregation of neighbourhoods through MIH recommended in this paper can be found to be overly ambitious. This could be the limitation of this study. The rest of the paper will cover how MIH is defined, the local and international extent of this complex phenomenon, who the stakeholders are and

the theoretical arguments that can guide the success of this model.

This study is guided by the proposition that wrong implementation strategies of MIH causes NIMBY and delays in such housing developments. Investment theory can help annotate ways of making mixed income housing successful through seven critical pathways identified in literature. Factors shown in Figure 1 include the development of inclusionary housing policy, location of such a development, design of such different housing tenures, the financing and incentives of such developments and the management of such housing developments. These factors give guidance on how composition of race within an MIH can be achieved to encourage transformation. This ultimately determines the scale/size of an integrated human settlement development.

Stakeholders play a huge role in

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minimising investment risk. As clearly stated by Klug *et al.* (2013), Inclusionary Housing Policy (IHP in its draft form) requires private developments to set aside a minimum share of dwelling units for affordable housing. However, inclusionary housing has largely been resisted due to negative perceptions of NIMBY discussed earlier. The predominance of court challenges by existing home owners suggests that there are unfavourable shocks on house prices and this causes stakeholders to remain hesitant in committing resources to the development of urban housing, a view shared by SAPOA as well. Thus the goal of eradicating housing shortages and by so doing, the needed transformation in the residential market is delayed (Department of Human Settlements, 2014). Compared to the MIHs in the developed world that end up rejuvenating the previously depressed neighbourhoods, an MIH in South Africa located in a good neighbourhood is purported to depress the value of neighbourhoods. Rowlands *et al.* (2006) find that developers are willing to engage in these kinds of developments in the US. To establish integrated human settlements that are integrated, shareholders need to play a collaborative role with a view point that housing/shelter per se is not enough without roads, clinics, schools, playgrounds and places of work. A strategy that enables such collaboration is therefore needed for a paradigm shift in the delivery of housing in South Africa.

2.0 MIXED INCOME HOUSING DEFINED

In academic literature, there is no universally accepted definition of Mixed Income Housing (MIHs) which is a part of Integratrated Sustainable Human Settlements in the context of South Africa. However, a commonplace one is the Brophy and Smith (1997) definition which describes it as "a deliberate

effort to construct and/or own a multifamily development that has the mixing of income groups as a fundamental part of its financial and operating plans". Many definitions in academic literature points to the fact that an MIH can be a tool to integrate people of different ethnic and income backgrounds; hence acts a way of dismantling concentrations of poor urban areas. Thus an MIH is capable of reducing the associated problems of high crime rates, increased health problems, malnutrition, high unemployment rates and high numbers of children dropping out of school (Kempen and Bolt, 2009). Levy *et al.* (2013) noted that generally, what counts as mixed income, varies considerably from a development to another, as well as across countries. However, a relatively higher income household can be defined as those earning anywhere from 51 to 200 percent of the Area Median Income.

Historically, the concept was necessitated by the need to dismantle a history of more marked distinctions between social classes prevalent in many European countries after the World War II (Atkinson, 2005; Tunstall & Fenton, 2006). In Netherlands, the model is named 'mixed districts' where mixed residential environments create opportunities for the poor when they learn and adapt ways from high income people (Galster *et al.*, 2010; Musterd, 2005). Many countries have instigated policies to encourage the development of such housing tenures focusing on private development to include a proportion of housing units for low income households within an otherwise 'market rate' development (Hughen & Read, 2014). Theoretically this means that for an MIH to be successful in South Africa, it has to pass the risk screening criteria as understood by the beneficiary, the government and the private stakeholders in a holistic way.

3.0 EXTANT LITERATURE ON HOW MIXED INCOME HOUSING REDUCE CONCENTRATED POVERTY

Literature indicates that mixed income housing emerged as a purposeful reaction to the continuation of poor areas with concentrated poor households living together. Despite the different names given to mixed income housing, the concept is not a new phenomenon (U.S. Department of Housing and Urban Development, 2003). In Netherlands, the requirement was that new and larger-scale residential developments are required to set aside a minimum share of the dwelling units for social housing (Galster, 2004). In Ireland, this policy was mostly voluntary until year 2000 when it was included into national legislation (McIntyre & McKee, 2012).

Through the Swedish 'Development and Justice' policy (1998), mixed income housing sought to improve life chances and social inclusion of disadvantaged groups (Delorenzi, 2006; Galster *et al.*, 2010). HUD (2003) paper reveals that in 1993, the US Congress and Department of Housing and Urban Development (HUD) created the Urban Revitalisation Demonstration (URD) (HOPE VI) programme which in 1995 authorised as Section 24 of the US Housing Act of 1937 that MIH comprises housing units with differing levels of affordability. This strategy has been used to address problems associated with poverty since the early 1960s. After the 1969 Chicago Gautreaux case, the 1992 HOPE VI replaced public housing projects occupied exclusively by poor families, with redesigned mixed-income housing while providing housing vouchers to enable some of the original residents to rent apartments in the private market" (Atkinson, 2005:23). Although the term 'mixed income' has been described as an imprecise concept

by de Souza Briggs *et al.*, (2009), Mixed-Income Research Design Group (2009) and also Galster (2012) asserted that the 'recipe' for 'social mix' is complex and cave-at-laden and so the prescription to end concentrated poverty is not a one size fits all. Nevertheless many states in the US (Maryland, Chicago, Massachusetts, California, Connecticut, Missouri and San Francisco to mention a few have carried out inclusionary housing efforts (de Souza Briggs *et al.*, 2009).

Countries in Europe such as Netherlands, Ireland and United Kingdom have reversed historical racial discrimination by demolishing public housing to more inclusionary housing. In Ireland, the move towards mixed housing dates back to as early as the 1920s through inclusionary housing delivery system termed 'social housing'. It is termed 'social mix' in the UK, after Juppe's concept (1999) of 'pepper potting' where low income people are rehoused/scattered across better income suburbs to reduce problems associated with concentrated poverty. Only a few countries in Africa (South Africa and Botswana) and the growing economies such as Malaysia, China, Columbia and India have adopted MIH models due to huge income differences between the poor and the rich (Smit & Purchase, 2006 in Klug *et al.,* 2013)

However, despite the good intended goals of MIH, there has been little empirical evidence that better-off residents acted as 'role models' who help the poor in finding better employment opportunities or raising expectations of attainment (Bailey & Manzi, 2008a). There was also no evidence that mixed tenure had enhanced social capital. Not basing on empirical evidence, Ellickson (2009:34) also contends that "inclusionary policies, such as the federal programs in the US, are mediocre in the sense that the resources devoted to them could be far better

allocated otherwise". He argues rather that MIH developments do contribute to the high cost of housing in those jurisdictions where they are developed. He instead argues for a voucher system that effectively disperses people across all sub-markets.

Clearly, there is still an indication that there is less consensus in academic literature on how the model can be modified and stir policy towards the intended goals of poverty reduction integration and sustainability of neighbourhoods. Perhaps as suggested by Brophy and Smith (1997), it is necessary to have strategies that are more 'grassroots –bottom-up' approaches capable of empowering people according to their needs that are specifically aimed at creating opportunities for low income households (Escobar, 1995). In this case, the argument that MIH alone is not a sufficient condition to eradicate poverty and integrate people of different incomes and race holds water. 'Pepper remains pepper' no matter where households are located if there are no other poverty intervention tools put in place.

The proposition is that one of the solutions to the success of MIHs in South Africa lies in the ability of residential markets to attract investments within the context of mixed income housing. This means that failure to attract investments by South Africa's transforming residential markets is as a result of misalignment of the model to risk-return theories of property investment. Despite MIH being an old phenomenon, there is no consensus in literature on how it can successfully be implemented worldwide given the increasing poor-rich income disparities (Galster, 2012).

4.0 INVESTMENT THEORY
Following the proposition put forward in this study, residential markets ought to attract investments in the context of housing as

an investment asset. In the 1930s Fisher pioneered modern investment theory in that the value of an investment asset is the sum of present value of its future income. From this theory came the notion of Net Present Value (NPV) and Internal Rate of Return (IRR) as a yardstick to evaluate the performance of investments as shown in Equation 1.

$$NPV = \sum_{t=0}^{n} \frac{(Benefits - Costs)_t}{(1 + r)^t}$$

where:
 r = discount rate
 t = year
 n = analytic horizon (in years)

Equation 1: Net present value of investments (Freeman et al., 2004)

When stakeholders (including government) invest in residential markets, they should get a competitive IRR that is above the cost of money in the open market. Markowitz (1959) took it further in that future investments in diversified assets prove to reduce investment risk. Although referring to the financial markets, Sharpe (1963) further postulated that share returns are determined by systematic and unsystematic risk in the equity investment market. This has become text book analysis in building investment portfolios without the unsystematic risk because it can be diversified away. Mixed income housing should as well conform to modern investment theory considering both risk and return of an investment where the balance between the two is maximised. As with other risk-bearing investments, the notion of a risk-return balance does have use in the way the seven factors found from literature affect the viability of mixed income housing as an investment.

5.0 RESEARCH METHODOLOGY/DESIGN

This study mainly used document, desktop and observation analysis to draw out conclusions on how better to implement mixed income housing in South Africa as shown in Figure 1. Information found from academic journals together with documents from Department of Human Settlements and its subsidiaries was complemented by observational trips made to seven selected developments.

Table 1 shows some of the documents from which this study was drawn. These include published journal articles, housing regulations pre apartheid and post democracy government custodians, municipalities and their other entities, Not-for-Profit-Organizations and Independent Consultancy Organisations. The published research journals show that mixed income housing is still a debated issue that pools researchers into two lines of thought. One school of thought (mainly government) pushes for such developments as a tool to deconcentrate poverty while the private sector finds many issues regarding MIHs incompatible with investment requirements making.
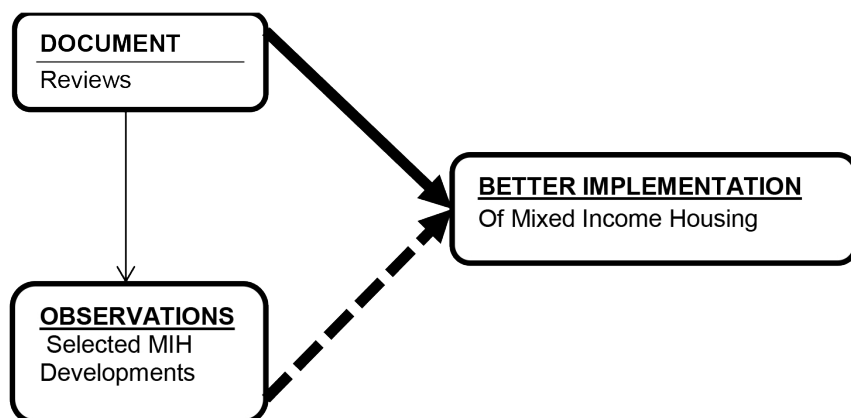
Figure 1: Document, desktop and observational analysis (Author, 2017)

Nature of Documents	Documents & Websites
Academic research journal articles	1. Research articles from the USA 2. Research articles from Europe 3. Research articles from Africa & South Africa
The housing regulations: pre apartheid and post democracy	4. The Housing Act 32 of 1920, The Native Urban Areas Act 35 of 1923, Group Areas Act of 1950 5. Constitution of South Africa 6. Housing Act 107 of 1997 7. A Comprehensive Plan to Housing delivery (2004) 8. Human Settlements, South Africa Year Books and documents. http://www.dhs.gov.za/content/documents-public-comments 9. A Framework for Inclusionary Housing Policy Initiated at an Indaba in September 2005 http://abahlali.org/files/Framework%20for%20an%20Inclusionary%20Housing%20Policy%20in%20SA.PDF 10. Social Housing Act 16 of 2008 11. Comprehensive Housing Plan (CHP- BNG) Integrated Sustainable Human Settlements
Municipalities & Entities	1. City of Johannesburg 2. City of Cape Town 3. http://www.durban.gov.za/City_Services/housing/Pages/Cornubia.aspx: eThekwini Municipality 4. Johannesburg Social Housing Company: http://www.joshco.co.za/ 5. Johannesburg Property Company: http://www.eprop.co.za/commercial-property-news/item/7998-Contracts-signed-for-breakthrough-mixed-income-housing-development.html

Table 1: The nature of documents used for analysis   >

Not-for-Profit-Organization & Independent Consultancy	1. South African Property Owners Association (SAPOA)
	2. Center for Affordable Housing Finance in South Africa http://housingfinanceafrica.org/documents/case-study-fleurhof-project-south-africa/
	3. Gauteng City-Region Observatory (GCRO)
	4. Ahmed Kathrada Foundation
	5. https://www.finmark.org.za/
	6. http://www.urbanlandmark.org/research/x09.php
	7. Johannesburg Housing Company : https://www.bshf.org/world-habitat-awards/winners-and-finalists/johannesburg-housing-company/
Developer Companies and Banks	1. Basil Reeds/Crowzen
	2. Calgro M3
	3. Tongaat Hulett: http://www.cornubia.co.za/
	4. Standard Bank, Nedbank, ABSA, FNB
	5. Development Finance Institutions (DFI)
	6. Gauteng Partnership Fund (GPF)

Table 1: The nature of documents used for analysis (continued)
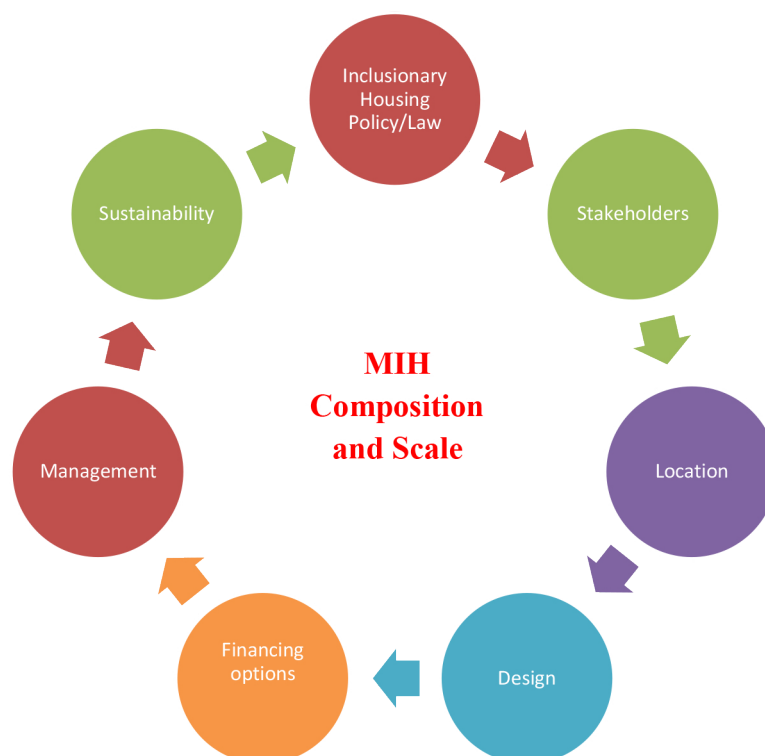
Figure 2: Factors guiding the implementation of mixed income housing (Author, 2015)

The Department of Human Settlement's website provided a handful of documents guiding housing in South Africa. This information was then mirrored in comparison to what private research and consultant companies' documents. This document analysis discovered seven factors on which mixed income housing anchors on. These were summarized into Figure 2. It is the proposition of this research that for MIHs to achieve optimal inclusion, there are critical pathways to consider. They include policy development, location and design, finance and incentives and management. This list is by no means exhaustive, but it guides all theoretical arguments for MIH composition and scale. This paper expands ideas by Khadduri (2001) on factors debated in literature on taking housing as an investment asset in making MIH successful.

Following the seven factors from literature, trips were made to some of the projects listed in Gauteng Partnership Fund (2013). Table 2 shows the seven visited development projects with Cornubia being the largest so far in Durban.

Project name	Housing Units	Visited by Researcher
Lufreng	24 100	
Cosmo City	**14 800**	**Yes**
K206 (Alex)	**3 199**	**Yes**
Droogeheuwel	3 648	
Mohlakeng Ext 11	3 495	
Fleurhof	**10 441**	**Yes**
Westonaria Bowra	5 000	
Chief Mogale	6 800	
Thorntree View	11 700	
Nellmapius New	**3 597**	**Yes**
Olivenhoutbosch	**4 452**	**Yes**
Leeuwpoort	17 899	
Chief Albert Luthuli Ext 6	5 398	
The Willows	**10 977**	**Yes**
Hatherly East	7 300	
Lady Selbourne	6 000	
Elandspoort/ Danville	2 000	
Cornubia	**25 000**	**Yes**

Table 2: Flagship projects for sustainable human settlemets (Extended from Gauteng Partnership Fund, 2013)

6.0 INVESTMENT THEORETICAL ARGUMENTS FORMULATED

6.1 Stakeholders as investors

The desktop analysis shows that the initiative to promote inclusionary housing delivery is being pursued at national, provincial and local authority, as well as private sector levels. Following Freeman *et al*. (2004), when the department of human settlements, other government departments and municipalities give support in the form of land and financial incentives to housing delivery, they become investors. What is apparent is that South African government approach to public housing provision has progressed from RDP housing-free/fully subsidized housing to mixed-income housing since 2004/5 (IHP and BNG). Government has joined hands with private sector through inclusionary housing delivering a total "…of 5,6 million formal houses since 1994 (a growth of 50%) (Human Settlements, 2012). Thus

investment theory is automatically linked to integrated sustainable human settlements. When developer companies and banking institutions, supported by real estate agents and property valuers, give finance for construction and acquisition of MIH developments, they all become investors. House-owners ward councillors and rate payers associations are also indeed investors. In summary, stakeholders include managers of organizational interests who are directly involved in implementing, regulating or providing advisory service to, or affected by an MIH development. As with any other risk-bearing investments, the concept of a risk-return trade-off does have application in mixed income housing investments. Thus MIH investment should be valued in terms of expected rental returns and capital growth through Net present value (NPV) analysis and Internal rate of return (IRR). The NPV discounts cash-flows using the market opportunity cost of capital where stakeholder investors maxi-

mize their investments.

The theory behind risk-return trade-off is that mixed income housing should reward risks taken by all stakeholders for the development to be considered successful. Investment theory does link MIH to sustainability screening in an objective manner assessing the model as an investment asset that is capable of giving good returns and integrating the poor (effectiveness) at the associated costs and risks (efficiency). This means that government is a social investor who needs to be rewarded, as well as the private sector. Its reward is captured in the number and value of affordable income for the amount contributed.

6.2 Inclusionary housing policy development

There are two views on this policy; one view suggests legislating inclusionary housing distorts free play of markets and distort land and property prices while one view maintains that enforcing it would make all actors comply. So far developers are not required to comply regarding

inclusion of some affordable units in a development. Interviews done so far with built environment experts point to an interesting emerging theme; housing or residential real estate class is not a high end class compared to other real estate investment classes (Office, Retail, Industrial) in terms of the returns it gives for the risks taken. Outstanding returns in this market are only possible when partially financed by government bulk infrastructure.

From the investment point of view, developers benefit by cross-subsidizing capital from market rate units to depending on the state of the market. Where the market is weak, subsidization to market rate is required and the opposite flow is true where the market is stronger (Brophy & Smith, 1997; Hughen & Read, 2014). For South Africa, this is a chance for developers who agree to comply and include affordable housing in their developments to engage government in footing costs such as bulk infrastructure while increasing returns on their investments. The researcher finds an important MIH investment aspect; there is need to accurately calculate the financial incentives given to all stakeholders involved in the delivery of MIHs. This is in terms of the value of land, the value of the bulk infrastructure and the arm's length for affordable housing units. If this is not done well, most of the investment value skews to private developers.

The question of whether it should be policy or not becomes unnecessary, and what it means is that an MIH becomes a quasi-asset where ownership rights accrue to stakeholders according to what they invest while benefiting the whole society. In the long term, housing markets will reach a point of saturation, and this may break stigmatization, as people who move away from neighbourhoods that receive MIH will have nowhere to, move

to as all neighbourhoods will be developing such MIH. This will see a reduction in NIMBY syndrome and property prices will stabilize. Without MIH, very poor households in South Africa's major cities who spend 23% of their income on transport alone (Verster, 2009) will continue to face hardships. Inclusionary housing will put low income households closer to work opportunities and make housing an investment asset for which beneficiaries and buyers care about the future value of their assets. For this to work well, title deeds are important.

6.3 Financing and incentives
In the United States, for example Montgomery, Maryland, inclusionary zoning policy and land use regulations reserve 15% of housing for low-income families. Density bonuses encourage mixed income developers to build more units per given area than permitted. In South Africa MIH development would receive financial assistance in the form of local tax abatements or increment that helps remove barriers to financing. The most noted form of financing incentive is when developers benefit from government supplying bulk infrastructure in exchange for adding low income units in a development. South Africa follows suit where municipalities play an important role in promoting inclusionary housing. There is therefore no need to enforce regulation of IHP as long as finance incentives are properly linked to affordable housing.

6.4 Management
It is crucial that the social and RDP housing component is properly managed, as its failure has a great potential to affect the entire MIH development. Literature shows that good management of an MIH is a critical factor in maintaining its attractiveness and marketability and hence investment value over time (Bailey & Manzi, 2008a; Brophy & Smith, 1997; Doherty

et al., 2006). Effective management includes increasing security measures, resident relations, site maintenance, trash collection, and management of child play areas. Tenant selection, intake standards, enforcement of lease provisions (including rent collections) and house rules, as well as providing extra services such as in-unit upgrades, package acceptance, cable TV and internet service and a business centre (HUD, 2003). Who should be responsible for management is often debated in literature. For South Africa, an in-house developer company or contracted by a developer company with property management experience is argued for other than the other options. This is because the company's office visibility onsite gives a good impression making such developments viable and capable of maintaining value and is not based on the fact that some units are subsidised.

6.5 Sustainability
For South Africa, the greatest challenge of developing viable and successful mixed-income housing is in the sustainability of maintaining its mixed-income character over time. This means what matters most is whether MIHs will be capable of upholding investment values contrary to the fears of landlords in relation to houses loosing value. The low income components should house government employees such as teachers and nurses and not increase the 'zero income' part. Remember that there is a higher unemployment rate (22%) in South Africa. If it has to be included, then the concept of new cities makes investment theoretical sound judgement. If not, then it requires that subsidy amounts should be higher than what it is currently which is approximately R180 000.

6.6 Location
The argument is that MIH developments have power to relocate people currently working in suburban

areas from peripheries/outskirts of cities, commonly known as 'ghettos' or 'townships', to places they easily find jobs, good schools and opportunities that help them secure economic and social stability (Ahmed Kathrada Foundation, 2013; Human Settlements, 2012; Landman, 2012; Lemanski, 2014). However, mixed income communities are intended for local residents with a wide range of incomes and are designed to fit into the surrounding communities. Ideally these residents include low income workers who already work and are accepted in the area. For South Africa, researchers agree that mixed income housing could be successful if located close to amenities and supported by infrastructure development (Verster, 2009). However, internationally, there is evidence that lower income households who moved to areas with more employment opportunities were not necessarily more likely to access and retain jobs or obtain jobs with higher wages and end up suffering due to purchasing power parity (Popkin, 2007). By default, the arguments for location to be in the middle to high income markets henceforth become nullified. Also on the other hand, if the percentage number to be included in the MIH developments must increase to about 30 – 60%, the argument of

'pepper potting falls away because such percentages are not pepper potting at all. In this case, the developer should minimise risk by building in middle income or low income areas save for those developments that can be located in previously advantaged areas where the percentage can be reduced as shown in Figure 4 if developers should be indifferent to location. This will ensure all MIHs are market-rate regardless of location and this guarantees high occupancy and absorption rate on marketing. Developers argue for outskirt location; 'where the market has higher absorption rates and cheaper private land (contradicts).

6.7 Development and house design

Development of affordable housing should architecturally be compatible with neighboring market-rate homes, thereby preserving the character and marketability of the neighborhood (Khadduri, 2001). Conceptually, MIH should have a uniform design so that it is not obviously certain that some houses are for low income and consequently alluding to the notion of inferior people. This means subsidies should put residents on an optimal market rate otherwise such developments are not able to necessitate 'social

mix'. This raises questions on how households would pay for living expenses, utilities and food even when they have cut on transport costs, as the people will remain poor despite the change in housing design. In the US, the design is such that in every development of Hope VI, there is a section of smaller affordable units within a complex of larger market-rate units. This design supports buyers who might eventually "graduate" into the larger units within the area where Government further subsidizes mortgages in market-rate sections of the development (Feijten & Van Ham (2009).

In South Africa, however, the IHP continues to prescribe affordable housing units with a minimum floor area of 40 m^2 and must have an internal bathroom and kitchen. The inconsistency is in the fact that a '40m^2' house will not blend with market rate houses in a mixed development of an affluent neighbourhood such as Sandton. This is where the policy has to change in terms of recommending a 'house-in a mix' that is compatible with the neighbourhood. For South Africa, this means the subsidy amount has to be upgraded to match the housing market in which the development has to be located otherwise

HIGH INCOME RESIDENTIAL MARKET → 50 % of an MIH = High Income Housing / 30 % of an MIH = Middle Income Housing / 20 % of an MIH = Affordable Housing

MEDIUM INCOME RESIDENTIAL MARKET → 50 % of an MIH = Middle Income Housing / 30 % of an MIH = Affordable Housing / 20 % of an MIH = High Income Housing

LOW INCOME RESIDENTIAL MARKET → 50% of an MIH=Affordable Housing / 30 % of an MIH = Middle Housing / 20 % of an MIH = High Income Housing
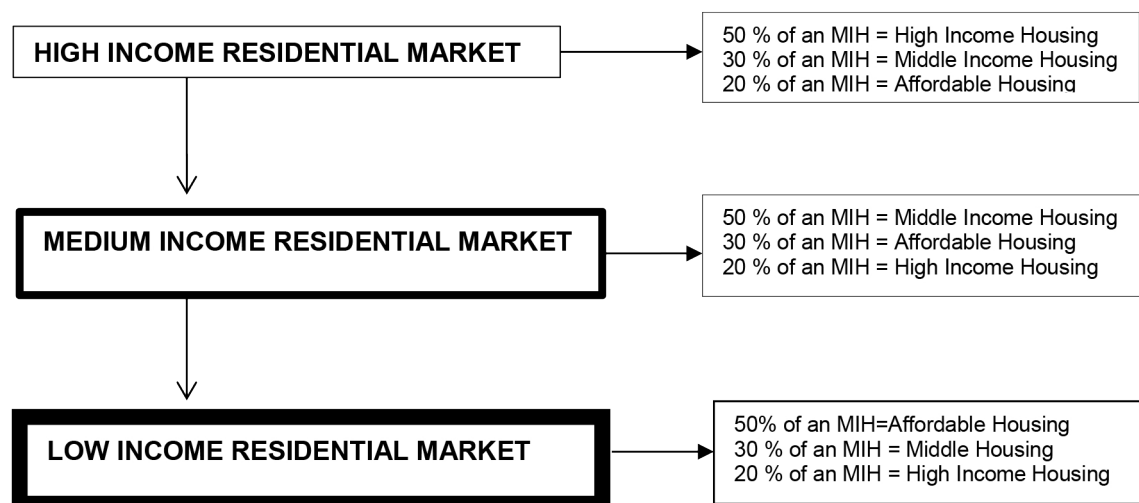
Figure 3: Location/Market determined the appropriate income mix (Author, 2015)

the development will be misaligned. A household earning between R3 501 – R15 000 is eligible for the Flisp gap housing program (Klug *et al.*, 2013).The subsidy amount for the 40m^2 house has risen to R180 000 from as low as R15 000 in the 1990s, yet the subsidy is currently not competitive for the MIH to attract subsidies according to locations. Thus if the subsidy amounts remain low, the less affluent neighbourhoods become the ultimate MIH location. Therefore, one can argue that by prescribing the size of the subsidy house to remain the same as the 'apartheid' one in terms of size and value, one is voting for the lower market location. This renders the MIH concept to be a low income concept rather than what it is intended to be in South Africa (a desegregating model of housing). As shown in Figure 3 on location of the MIH development, stigma can be minimised by 'pepper' or 'sweet' potting income households depending on the market of the development. Low-income families and market-rate families should be housed in the same development where it is possible to provide optimum opportunity for interaction.

7.0 DISCUSSIONS AND CONCLUSIONS

The study reveals that for South Africa, mixed income housing is an enabler for social integration to end inequalities reminiscent of apartheid. Although theoretical arguments put forward in this paper can be found to be exaggeratedly ambitious, the recommendations for MIH implementation are plausible in reducing NIMBY and improve the delivery of housing using an investment perspective. A broad base approach that supports the concept of 'creating new integrated investment cities' as a package that stretches beyond the built environment would circumvent the failure associated with 'scattering poverty'. This is because just scattering poverty would

bring along social ills dreaded by people in the receiving neighbourhoods. One would argue for other national development plans such as increased skills, inclusive and shared economic growth where there are poverty alleviating policies to increase opportunities for the poor.

Households will be able to graduate from low to high income housing markets depending on their levels of income at some future time. The argument is that people are able to 'self-select' their markets upwards or downwards depending on their income levels. The argument is that if poverty was measured in accordance to where people stay, then this poverty would have been a failure to 'plan issue' that could easily be rectified by merely moving people from lower to higher submarkets. However, pepper will always be pepper, shifting one's place of residence does not increase their wealth and wellbeing. If people are poor because of where they find themselves staying, 'poverty per se' becomes a planning other than an economic developmental issue. In South Africa, planning and rezoning can only go as far as inducing transformation in the already created cities. On the other hand, it holds true that it does not matter where people live for as long as they find employment to increase their income levels. After all, people are also known to be happy staying among people of the same status, religion and culture.

Thus one can conclude that the future of MIHs lies in the development of a 'new integrated investment city', a concept. This is where spheres of government subsidize such developments through bulk infrastructure and land of which the value of these investments is accurately capitalized into affordable units. Otherwise the created value of MIH investments skews to the private sector. A regulatory

framework that accurately captures government — private value created by a healthy mixed income housing PPP could be the answer. One can envisage high income people buying houses in a mixed income development located in 'lower' income neighbourhoods. This kind of an MIH would have achieved the intended goal of deconcentrating poverty, encouraging integration and encouraging racial mix since race and income levels move together.

8.0 STUDY LIMITATIONS

Theoretical arguments postulated in this paper provide recommendations guiding the implementation of mixed income developments in an overly ambitious way. This could be the limitation of this study.

9.0 PRACTICAL/POLICY IMPLICATIONS

- The development of the 'New Integrated Investment Cities' (NIIC) such as Cornubia in Durban could provide a good example of future cities that encompass commercial and industrial space where residents could find jobs.

- Government subsidizes such developments through cost of bulk infrastructure and land in a Public Private Partnership. However, for the sustainability of such future funds, the money contributed by government must be accurately capitalized into affordable units in such a way that the created value does not skew or tilt to the private sector. If developers refuse to share in the Internal Rate of Return (IRR), then 'Not-for-Profit Developers' may be able to carry out such developments on behalf of government as is done in some countries such as Switzerland.

- Thus it is envisaged that even the high income people may invest in such cities located in a 'lower' income neighbourhood

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(sweet pot) by choosing to stay in the neighbourhoods they grew up even if they may be considered 'high income' people.

- By enforcing inclusionary housing, government would have achieved the intended goal of deconcentrating poverty, integration/racial mix since race and income levels move together. Affordable housing in the affluent areas would be occupied by people who already work in such neighbourhoods.

- However, job creation efforts by government is paramount to complement the viability and functionality of the 'new integrated investment cities'.

- To note is the fact that government alone cannot create new investment cities. When it does, the quality of neighbourhoods is greatly compromised. Thus collaboration with the private sector should yield social/fair value to all investors.

10.0 SUMMARY OF POLICY IMPLICATIONS

Policy implications for this study are summarised in Figure 4 as a value sharing strategy where stakeholders view residential market development as an investment asset where all players care about the future value of housing in a 'New Integrated Investment Cities' concept.

11.0 FURTHER STUDY

Interviews with government officials, planning practioners, banks and developer companies may shed more light into exactly how mixed income housing may be improved into the New Integrated Investment Cities.

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All public sectors	Developers
▪ Land price amount	▪ Construction costs
▪ Subsidy amount	▪ Land price amount
▪ Bulk infrastructure	▪ All other costs

The city regulates	Financiers
▪ Spatial development planning framework	▪ Banks
▪ Collects rates and taxes	▪ DFIs
▪ Infrastructure provision	

Total value created and grassroots requirements
Created value is calculated and shared into high quality affordable housing for funds invested by government and the city. This yields safe desegregated residential markets where all stakeholders are investors

Figure 4: Value sharing strategy for 'New Integrated Investment Cities' delivery in South Africa (Author, 2017)

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Human settlements governance: An ethical consideration

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Abstract

The failure of the South African local government to contain the backlog in housing provision has highlighted governance issues that exist in these and similar organizations that are increasingly impacting on service delivery and sustainability. The latest service delivery protests increased scrutiny not only on government as a whole, but on local government in particular. The recent Tshwane R97M flats that are 'unfit for human occupation', the Soweto hostel eradication program that cost millions, but achieved almost nothing and the multimillion rand eThekwini Metro housing scandal, amongst others, have raised questions about governance in these organizations. This paper considers some of the existing guidelines and legislation such as the Company's Act, the King Reports and the PFMA, amongst others, that provide guidelines for proper governance and recognises that these have been insufficient to overcome the challenges of governance. It maintains that with the escalating corruption and maladministration in organisations in the low cost housing sector, the ethical recapture of these organisations through ethical leadership is a necessary condition for sustainable housing development. In this spirit it welcomes the introduction of Draft King IV Report. King IV whilst reemphasising the importance of well-grounded leadership in governance and pays particular attention to ethics in leadership. Ethical leadership is seen as a means of changing the culture of organisations to ensure officials perform their jobs efficiently, effectively and with integrity. The paper, in noting the strategic direction leaders provide to organisations, comments on the probable effectiveness of King IV in ensuring behaviour change in the low cost housing sector.

Key words: service delivery, local government, governance, sustainable development, ethical leadership

1.0 INTRODUCTION

The apartheid era in South Africa has been noted for the worst kind of atrocities to the 'non-white' people of this country. Notably amongst these marginalised groups, the indigenous peoples suffered the most and despite attempts by the post-apartheid government to address the housing shortage in particular, with what is regarded as the world's largest housing development programme in the world, the situation remains dire. The provision of close on three million housing units and the approximately four million housing subsidies provided by the post-apartheid government has done little to tackle the fragmentation and inequality that continues to exist in housing provision in South African and service delivery protests remain a daily constant. The proliferation of informal housing

and shacks, the swelling number of homeless and the snowballing population of the country has increased the pressure on government to speed the delivery of housing services. The call for an integrated approach that provides for job creation and well performing human settlements that are sustainable has resulted in an examination of the functioning of municipalities and their leadership. This examination has further led to the exposure of governance failures, evidenced by large-scale corruption and systemic maladministration, as being one of the contributory causes of the failure to address the housing need more effectively.

The Company's Act, King Reports I to III, and PFMA amongst others sought to provide guidelines for proper governance, but serious infractions continued to occur. The Draft King IV recommendations

which argues for the adoption of increased ethical considerations and ethical leadership have recently been introduced and provides further guidance to help overcome the ethical governance challenges of service delivery and sustainability to the entities involved in the provision of housing. It is premised on the importance of ethical leadership as a means of capacitating municipalities and presents ethical governance as necessary for facilitating service delivery and promoting the creation of sustainable human settlements.

To create a context to discuss the impact of King IV recommendations, this paper will firstly provide clarity on the concepts of: human settlements; governance; and ethics. Thereafter some of the provisions of the legislation that provides guidelines for proper governance will be scrutinized. The argument

will be advanced that with the escalating corruption and maladministration in organisations in the low-cost housing sector, the ethical recapture of these organisations through ethical leadership is a necessary condition for sustainable housing development. The paper will then consider what impact, if any, King IV may play in strengthening governance in these organisations.

2.0 THE RELATIONSHIP BETWEEN HUMAN SETTLEMENTS, GOVERNANCE AND ETHICS

To be able to understand why King IV is relevant to the discussion of Human Settlements in South Africa, it is important to understand the dependence of successful Human Settlement interventions on good governance. Once this link is understood it is then possible to examine the place of ethics and ethical leadership in enabling good governance.

2.1 Human settlements

The concept of 'Human settlements' has been described as:

> "…an integrative concept that comprises: (a) physical components of shelter and infrastructure; and (b) services to which the physical elements provide support, that is to say, community services such as education, health, culture, welfare, recreation and nutrition" (Glossary of Environmental Statistics, 1997).

To address human settlement challenges in South Africa, the National Spatial Development Perspective (NSDP) was created by the South African government. The NSDP (2006) is an intervention seeking to address the ills of apartheid. It is positioned as a critical focus that will enable the government to redress the harm inflicted by apartheid and colonialism on "settlement patterns and economic activity in South Africa". It is expected to provide the structure necessary for

government intervention to redress those wrongs and enable "equitable and sustainable development". It is intended to be a crucial tool for the government in pursuing its goals of "ensuring greater economic growth, buoyant and sustained job creation and the eradication of poverty". It states that:

> "The ultimate purpose of the NSDP in the South African setting is to fundamentally reconfigure apartheid spatial relations and to implement spatial priorities that meet the constitutional imperative of providing basic services to all and alleviating poverty and inequality…" (NSDP, 2006)

The normative principles provided by the NSDP (2006) is aimed at contributing to the growth and development policy objectives of the government. These principles are given as:

- "Rapid economic growth that is sustained and inclusive is a pre-requisite for the achievement of other policy objectives, among which poverty alleviation is key.

- Government has a constitutional obligation to provide basic services to all citizens (e.g. water, energy, health and educational facilities) wherever they reside.

- … Government spending on fixed investment should be focused on localities of economic growth and/or economic potential in order to gear up private-sector investment, to stimulate sustainable economic activities and to create long-term employment opportunities.

- Efforts to address past and current social inequalities should focus on people, not places…

- In order to overcome the spatial distortions of apartheid, future settlement and economic development opportunities should be

channelled into activity corridors and nodes that are adjacent to or that link the main growth centres…"

The principles set out above provide the guidelines for government to act in a manner that fulfils the objectives that have been set to redress the imbalances of the past. This comes with the expectation that government will undertake its function in a manner that is beyond reproach. In fact the United Nations Department of Economic and Social Affairs believes that for the various institutions and organisations that act to implement government objectives to be able to do so, especially in developing countries, good governance is crucial (UN, 2005).

2.2 Governance

Governance can be seen as the:

> "… establishment of policies, and continuous monitoring of their proper implementation, by the members of the governing body of an organization. It includes the mechanisms required to balance the powers of the members (with the associated accountability), and their primary duty of enhancing the prosperity and viability of the organization…" (The Business Dictionary. n.d.)

According to Nnoli (Nnadozie, 2015:193) governance may be "… determined by the relationship between the rulers and the ruled" and as such is different from government which "… is the agency of the ruling or dominant class in the society, which is saddled with the duty of exercising state power on behalf of other members in that class'. Dassah (2015:716 – 717) in summarising the views of various other authors expands on the views of Nnoli (2003) in stating that the term government gave rise to the term governance. Dassah sees governance as the manner in which

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power is used in "managing the economic and social resources for a country's development".

According to the United Nations (2005), "Fostering effective leadership is perhaps one of the most important and first steps to take in the reform of the public sector … Effective leadership is critical to the future of governance, of democracy and of people's well-being…"

In terms of the above definitions governance can be seen as manner in which governments or rulers exercise the power placed in their trust by the ruled or the people of a country when rendering public service though the use of resources made available to them. Governance therefore is aligned to accountability, trust and effective leadership. Ciulla defines leadership as; "a complex moral relationship between people based on trust, obligation, commitment, emotion, and a shared vision of the good" (Ciulla, 2014:xv). Once leadership is identified as having a moral dimension the concept of ethics is at its core. Ciulla, in fact places ethics "at the heart of all human relationships and hence at the heart of the relationship between leaders and followers." (Ciulla, 2014:xv)

2.3 Ethics
Ciulla defines ethics as being "about how we distinguish between right and wrong, or good and evil in relation to the actions, volitions, and characters of human beings." (Ciulla, 2014:xv). Similarly, in a business case study developed around Cadbury Schweppes, Ethics was defined as "an individual's moral judgements about right and wrong". The case study emphasises that when decisions are made by individuals or groups within an organisation the culture within these organisations will influence whoever makes these decisions. They advise that since the decision to behave ethically is a moral decision, it behoves employees to

consider what the right or morally correct course of action would be and that such a consideration may entail rejecting or turning away from the biggest short-term profit. (The Times 100 Business Case Studies, n.d.).

3.0 DISCUSSION
3.1 Unethical Behavior and Human Settlement Failures
The first democratic elections were held in South Africa in 1994 and signaled an end to the policy of apartheid. The systemic discrimination that was practiced by the apartheid government and that had led to massive housing shortages for the black population was one of the primary concerns of the incoming ANC majority government and was specifically called out in the 1994 election manifesto (ANC, 1994). Human settlement policies and initiatives were created and there was an expectation that there would be rapid improvements in housing and related services provision within even the ANC's first term of government. Yet even if we focus on a single element, namely housing provision, we find that over the next 20 years, although the government provided more than 2.5 million houses and another 1.2 million serviced sites, the housing backlog increased from 1.5 million to 2.1 million units. Over the same period the number of informal settlements increased by 650%, from 300 to 2 225. Similarly, although the housing subsidy has increased from R12 500 per household to approximately R160 500 today, and state spending on housing and community amenities has improved from 1% to 3.7% of GDP, the quality of the houses being delivered is often poor (Tomlinson, 2015:1). Very many reasons are theorized as being behind this including the observation that the actual delivery of houses has decreased over time from 235 600 units in the 1998/99 financial year, to approximately 106 000 units in the 2013/14 financial

year (Tomlinson, 2015: 3 – 4). Another reason put forward is the fact that the population is increasing and household sizes are getting smaller (World Bank, 2011). Further theories speak more directly to issues of the capacity of municipalities to deliver services, the inability to maintain, or neglect of, existing infrastructure, and 'institutional problems of corruption and mismanagement' (Nnadozie, 2013).

Supporting Nnadozie's contention that corruption and mismanagement is in part to blame for the failure of human settlement service delivery is the spate of highly publicized investigations undertaken by the Public Protector's Office. The investigations where the allegations were borne out include the investigations into the following: Senqu Municipality, December 2014, George Municipality in December 2014, Department of Public Works, Roads and Transport in Mpumalanga in December 2013, etc. The issues range from unlawful and improper conduct in the appointing of staff, to unlawfulness and impropriety in the awarding of leases and other similar instances of corruption and maladministration. (PPSA)

Again, if we focus on the single aspect of housing delivery investigations undertaken by the Public Protector we find:

1. In her report, 'The Cost of Deviation' released on the 26th January 2016, the Public Protector found that the tender process conducted by the Nelson Mandela Bay Metropolitan Municipality for the construction of RDP houses was irregular and constituted maladministration. In addition, that the municipality had failed to comply with the Provincial Department of Human Settlement's directives (Madonsela, 2016).

2. Similarly, a July 2013 report, 'The Pipes to Nowhere', into the

Nala Local Municipality references a KPMG report that identified double salaries and bonuses that were paid forcing an investigation into "misappropriation of funds on the payroll system", further maladministration that led to the contractor abandoning the site of the Marantha Housing Project after only 4 units were built and infrastructure for the site that had also not been developed (Madonsela, 2013).

3. A February 2012 report, 'Glimmer of Hope' confirmed with the Head of the Mpumalanga Department of Human Settlements that houses in Siyathemba did not have toilet facilities, that numerous houses were defective and that on some plots only the steel structures had been erected. The report also included mention of credit note fraud within the Dipaleseng Municipality of R1.5 milion that was not reported to the SAPS (Madonsela, 2012a).

Looking outside the Public Protector's office, and directly at statements released by the government, we find the following reports. On 2 February the government reported that a Sol Plaatje Municipality official was arrested for fraudulent actions committed from 2011 to 2016. In that period he profited from the combined salary and fraud to the tune of R2.2 million (SAPS, 2017). A councillor in Aliwal North was found guilty of corruption (Eastern Cape Human Settlements, 2016). On 9 December 2015 five former Gugulethu Officials were sentenced to seven years imprisonment for defrauding the social grant system. (GCIS, 2015). Corruption Watch, a chapter of Transparency International, in its Annual Report noted that it received 4 391 reports from the public in 2016 that purported to be instances of corruption. 61% were adjudged to be so and of these 5% related to housing issues (Corruption Watch, 2017).

As early as November 2012 the Public Protector had stated the need for "ethical leadership to raise the bar regarding integrity in public sector service delivery". She declared that "Integrity applies with respect to both the manner in which people are treated and control over public resources and opportunities is exercised." (Madonsela, 2012b). Yet at this point both the Company's Act and Public Finance Management Act (PFMA) were already well established.

3.2 Company's Act and PFMA

The legal and regulatory constraints for ethical behaviour is provided by the Company's Act and Public Finance Management Act (PFMA).

The Company's Act requires that directors act in good faith and for proper purpose, in the company's best interest and with care, skill and diligence. They may not use their position or knowledge obtained through their position to take advantage or harm the organisation. Any information that may harm the organisation needs to be immediately disclosed if they are not legally precluded from doing so. They must take reasonable steps to keep themselves informed, must have a rational basis for making or supporting a decision, but may rely on competent employee, board committee or expert opinion to do so where there's a reasonable basis for it (Company's Act. 2008).

To this the PFMA adds that directors must protect the assets and records, act with fidelity, honesty, integrity whilst managing financial affairs, disclose to the minister when requested necessary information, and act in protection of the financial interests of the state. Further, that they may not contravene their board responsibilities or the terms of the PFMA and must in addition to not using their position to benefit themselves or their families, recuse themselves when there is such a conflict of interest. (PFMA. 1999).

Notwithstanding the implementation of these provisions, corruption amongst public servants remained widespread. It is for this reason and in keeping with the idea that ethics and ethical leadership was needed that the provisions of King III are being revised for King IV. The revision seeks to assist the leaders and others within organisations by clarifying the role that they need to undertake to model, influence and galvanize the rank and file in the organisation so that ethics and ethical behaviour becomes systemic.

3.3 DraftKing IV

Draft King IV provides guidance for the internal culture and self-regulatory environment that ethical organisations need to inculcate. It identifies that organisations need to foster ethical behaviours for corruption and maladministration to be neutralised. Essentially, King IV is a determined effort by Institute of Directors South Africa to temper the privilege of power with the responsibility of ethics. The Draft King IV report explicitly states that its objectives include to:

▪ "promote good corporate governance as integral to running a business or enterprise and delivering benefits such as…an ethical culture…

▪ present good corporate governance as concerned with not only structure and process but also an ethical consciousness and behaviour" (Draft King IV, 2016:2)

In clearly identifying its underpinning philosophy as addressing ethical effective leadership, it speaks of an ethical 'culture', 'consciousness' and 'behaviour'. In taking this approach it suggests that an organisations culture is set from the top and that the behaviours of leaders influence those that they lead.

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King IV develops each of the principles of responsibility, accountability, fairness and transparency in terms of how the governing body of an organisation should conduct itself to effect ethical leadership. It states:

"Responsibility: The governing body should assume ultimate responsibility for the organisation, as well as the protection of resources: financial, manufactured, human, social and relational, and intellectual and natural capitals.

Accountability: The governing body should be held responsible for its decisions and actions by stakeholders. Accountability follows from the assumption or designation of responsibility. Governance structures and arrangements should connect responsibility and accountability. Accountability cannot be delegated or abdicated, and should be communicated clearly.

Fairness: The governing body should ensure that it balances in its decisions the legitimate and reasonable needs, interests and expectations of material stakeholders of the organisation, in the best interests of the organisation.

Transparency: The governing body should ensure that reports and disclosures enable stakeholders to make an informed assessment of performance, including the impact of the organisations activities and its ability to sustain creation of value. (Draft King IV, 2016:3 – 4)

In carefully explicating each of the principles, it clarifies for organisations that the leadership need to apply integrity to the management of people and resources.

King IV also provides some fundamental concepts that if embraced by organisations will start to create the context for cultural change and **042** a commitment to ethical practices

by reforming the way organisations set goals and objectives. It recommends that organisations redefine their focus away from short-term capital markets to long-term sustainable capital markets (Draft King IV, 2016:14). It further suggests that they move from financial capitalism to inclusive capitalism (Draft King IV, 2016:14) and extends the idea of integrated reporting that was introduced in King III to the concept of integrated thinking (Draft King IV, 2016:10).

Draft King IV speaks specifically to the company's role and responsibility in society, corporate citizenship, sustainable development and stakeholder inclusivity and responsiveness (Draft King IV, 2016:14). It recommends the establishment of a social and ethics committee that is able to address ethical behaviour and ethics management (Draft King IV, 2016:17) and emphasises the critical role of stakeholders in the governance process (Draft King IV, 2016:31). It even speaks directly to corporate codes of conduct and identifies the place of values with recommended practices (Draft King IV, 2016:34) and the role of statements of vision and mission (Draft King IV, 2016:4).

However, Draft King IV remains a set of recommendations. It is the Company's Act and the Public Finance Management Act (PFMA) that provide the 'teeth' for regulatory agencies such as the Public Protectors Office to hold leaders of organisations to a high standard of ethics.

3.4 Evidence of Effectiveness of Draft King IV Recommendations

The recommendations contained in Draft King IV are fairly comprehensive and numerous public organisations have already instituted some of these measures after they were alerted to unethical practices within their organisation. However there is no evidence that these have proven effective. For example, the

Tshwane municipality has established a fraud hotline, launched Fraud Awareness campaigns, developed a whistle blowing policy, created a code of conduct, maintains a gift register and is constantly reviewing policies to strengthen controls. Yet, notwithstanding this, it reported a 41% increase in the number of cases reported through whistleblowing channels in the 2014/2015 financial year (City of Tshwane, 2016).

4.0 CONCLUSION

Draft King IV contains a comprehensive set of recommendations that provides the leadership of organisations with a blueprint to demonstrate ethical behaviour by personally adhering to the guidelines provided. It also provides guidance on organisational policies, practices, functions and capabilities that when implemented can fundamentally change organisational processes to proscribe unethical practices and promote ethical behaviour. The intent is to have the demonstrated behaviour and reformed processes change the organisational culture so that at every level personnel identify and weed out unethical behaviour amongst their peers and personally aspire to the highest standards of integrity. However, as discussed earlier Draft King IV remains a set of recommendations and therefore by itself cannot hope to stem the systemic and widespread corruption that has been evidenced within the organisations and institutions charged with effecting the governments NSDP. It will be up to the leadership of these organisations to have the courage to engage with organs such as the Public Protectors Office and the Courts and use the provisions within the PFMA and the Companies Act to act decisively to eradicate corrupt and unethical behaviour. The authors take heart from the outstanding courage displayed by the outgoing Public

Protector, Thuli Madonsela, and believe that as long as South Africa has people of such calibre, there is hope for the future.

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How to incorporate special needs housing within the development of social housing?

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Abstract

Internationally Social Housing programmes have often provided a key component in providing housing for people with special housing needs. In South Africa, where this linkage is made, it has been an ad hoc response, limited to a small number of social housing institutions (SHIs) and not built into either the policy or regulatory framework of social housing in South Africa. To date most special needs group housing projects that have been developed have been via NGOs, and very few through social housing institutions, and perhaps "outside" of the formal Housing Code. The proposed Special Needs Housing Policy addresses provision by NGOs, and excludes the role of social housing institutions. Special needs has therefore slipped through the cracks as a priority area within social housing. Ideally SHIs should cater for a range of housing needs across a spectrum from providing a shelter for people, to ownership, independent housing, in order to cater for people's housing needs across their lifespan.

This paper presents the findings of research carried out on the implementation, policy and regulatory regime regarding the incorporation of special needs housing within social housing. It looks at compliance with building regulations, and covers group homes and individual living scenarios. A recommendation is made for an agreed policy and proposes an implementation framework for special needs provision within the South African Social Housing programme, including suggestions on the proposed ratio for specially adapted social housing units to be applied in future social housing developments.

1.0 INTRODUCTION

This paper looks at the policy surrounding special needs housing and how special needs can be incorporated within the social housing programme. A research study and interviews were carried out for the National Association of Social Housing Organisations (NASHO) to investigate whether social housing institutions (SHIs) were open to address the housing needs of individuals with special needs and how special needs might be located within the social housing policy and grant framework.

The background to Special Needs Housing and the involvement of the Social Housing Sector is covered; what Social Housing and other relevant legislation says regarding special needs housing, including the new draft Special Needs Housing Policy for Non-Governmental Organisations (NGOs). An as-sessment is made of what current policies and programmes exist regarding special needs housing and a survey of current practice by SHIs with regard to special needs housing undertaken, along with interviews with relevant stakeholders. Compliance with building regulations (e.g. SANS 10400 Part S – accessibility) and related costs to provide special needs housing was also looked at.

2.0 CURRENT STATUS OF SPECIAL NEEDS HOUSING AND SHIS

2.1 Overview

Internationally Social Housing programmes have often provided a key component in providing housing for people with special housing needs. In South Africa, where this linkage is made, it has been an ad hoc response, limited to a small number of Social Housing Institutions (SHIs) and not built into either the policy or regulatory framework of social housing in South Africa. According to the Project Preparation Trust (PPT) in D G Murray Trust (2013) special needs group housing is not provided for within the policies and programmes of the National Department of Human Settlements.

Historically a number of local and national initiatives to have a more programmatic approach to the linkage have produced documents, but there has been little change in the approach with the exception perhaps of KwaZulu-Natal (KZN) and Gauteng. Most special needs group housing projects that have been developed have been via non-governmental organisations (NGOs) (in Kwa-Zulu Natal and in the Eastern Cape). Very few special needs projects have been developed through social housing institutions (SHIs). Both models of provision, by NGOs and SHIs, have perhaps been "outside" of government's formal National Housing Code (2009) and

are not covered by the restructuring grant framework set out in the Social Housing Act 2008 and the Social Housing Regulatory Authority's (SHRA's) Regulations (2010). Likewise interventions by SHIs to provide individual self-contained units for people with particular special needs that required adaptation to the unit has had to be funded by SHIs themselves. Discussions on policy interventions on special needs housing to date have mainly excluded the role of social housing institutions — special needs as a priority has slipped through the cracks as a priority area within social housing[1].

Social housing is aimed at providing (self-contained) housing in designated restructuring zones to people earning up to R7 500 per month. Social housing institutions are accredited institutions with the Social Housing Regulatory Authority (SHRA). The main focus of this paper is the provision of special needs housing through SHIs, either as group homes (Special Needs Group Housing (SNGH), or in independent units (Special Needs Independent Housing (SNIH).

SHIs accommodate people based on income threshold and affordability (and per the eligibility requirements of the National Housing Code), not according to any particular need — unlike other countries, such as in the UK. As such, it is difficult for SHIs to accommodate people who might not have a regular income as a result of their particular special need, and who might therefore not be able to afford to pay the required rental. Someone on disability benefit alone for example might not be able to afford to pay the rental of the cheapest self-contained SHI unit.

The paper looks at how SHIs could get involved in the development and management of special needs housing through:

1. Group homes — by the development of group housing facilities for people with special housing needs, either directly by the SHI, or via an Non-profit Organisation (NPO) (Special Needs Group Homes are abbreviated as SNGH).

2. Independent living — by providing support to people with special needs in self-contained social housing units. (Social Housing Independent Housing is abbreviated as SNIH).

3. Recommendations on the policy changes required for this to happen.

2.2 Defining Special Needs Housing

Housing for special needs has been described by PPT (2013a) as:

"… any form of state-assisted or state-funded housing for persons in special need and/ or with special needs."

Special needs groups include:

- orphans and vulnerable children;

- the seriously ill (including those infected by HIV/AIDS) if they are able to live independently;

- older persons (including frail care, assisted living and independent living);

- those with physical disabilities (including frail care, assisted living and independent living);

- those with intellectual and psycho-social disabilities;

- victims of domestic abuse (emergency and second stage, 'move-on' housing);

- the homeless/those living on the street (including street children);

- those receiving substance abuse rehabilitation services;

- parolees, probationers and youths in conflict with the law; and

- other vulnerable people such as victims of serious crime and trafficking.

Housing for these groupings will depend on whether they need to be served by an NPO with expertise in health or welfare matters to give them the necessary care and support, and whether they could be housed by an SHI in a typical social housing project.

There are two main types of Special Needs Housing (SNH): group housing and individual housing.

The principle difference between them lies in the ability or inability of a person with a special housing need to live independently and the degree of care and support expertise required. The distinction between the two types of special needs housing, therefore, is accommodation which caters to the needs of people to enable them to live independently (in a house provided via project linked or individual housing subsidy or in rental accommodation — such as provided by social housing institutions), or where they are not able to live independently, in group housing arranged through a registered NPO.

Group housing can range from short term (overnight) shelters, to medium term shelters (up to 6 months stay) to a longer term solution for independent living in social housing.

2.3 Policy development with regard to Special Needs Housing

As stated above, special needs group housing is not directly provided for within the policies and programmes of the National Department of Human Settlements. At a Provincial level two provinces, KZN and Gauteng, have implemented

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1   Interview with Marten Govender, SOHCO, 12th February 2015.

their own provincial policies for special needs housing. In KwaZulu-Natal the Department of Human Settlements' Housing Policy for The Aged and Disabled (undated) recognises that the aged and disabled persons have been a low priority for policy makers and service providers for a very long time, and as such their special housing needs are not adequately catered for in society. Gauteng has policies on various aspects of housing for people with particular needs — for example, they developed an HIV/Aids Policy on Housing (2007), followed by a Special Needs Policy (2012). The Western Cape provincial department of Human Settlements developed a programme for the Delivery of special needs housing (2009), while the City of Cape Town has a draft Special Needs Housing Policy — Social Housing.

There have been moves for government to adopt a policy on special needs housing that came out of discussions held by the Special Needs Housing Forum that was facilitated by the Social Housing Foundation (SHF). In 2008 the Special Needs Housing Forum asked for a Directive from the National Department of Human Settlements on special needs housing so that organisations could access funding for the capital requirements to build accommodation using housing subsidy, as well as funding for daily operational requirements. Since then the Project Preparation Trust made a Joint Civil Society Submission to the Department of Human Settlements with a Request to Expedite Special Needs Housing (2012). This covered institutional arrangements for funding (namely approval by provincial departments of human settlements); the availability of project preparation funding; and oversight by other provincial departments such as the Department of Social Development or Health of the project application, and the viability and credibility of

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the applying NPO. These recommendations were subsequently included in the current draft National Special Needs Group Housing Policy (). This draft policy, however, does not mention the role of, or funding for Social Housing Institutions to enable them to provide special needs group housing, only for NPOs.

The aim of the draft national policy for special needs group housing is to give grant support for the development of special needs group housing, with funding going directly to NPOs that have first been approved by the Department of Social Development. Some project preparation funding support would be made available, and minimum building space standards set for different typologies. It is currently on hold within the National Department of Human Settlements awaiting approval.

In Kwa-Zulu Natal in particular special needs group housing has been developed by NPOs, in partnership with the provincial Departments of Social Welfare or Health, and receive a Transitional housing subsidy from the Department of Human Settlements. (This is through using their housing policy for the' aged and disabled', and a policy framework for war veterans (recognising them in the special needs ambit), and guidelines on AIDS). The Eastern Cape Provincial Government has signed a Memorandum of Agreement with the Department of Social Welfare to broaden the ambit of housing special needs and has funded projects mainly for orphans and vulnerable children. The Provincial Government: Western Cape (2009) policy for special needs group housing was used to signed a Memorandum of Understanding with the Departments of Social Development and Health in the province. This policy has not yet been implemented, as they are waiting for the draft special needs

housing policy to be approved at national level before finalising it.

The City of Cape Town (2007) developed a draft special needs housing policy that referred to the strong synergy between its social housing programme and the development needs around special needs housing. It advocated strong partnerships between SHIs and organisations representing special needs care providers, as well as targeting social housing funding towards special needs which could lever in other sources of finance. The City of Cape Town's draft policy mentioned the following housing typologies for special needs:

- Independent living, where social housing projects are adapted for people with special needs so that they can live independently. The draft policy required the SHI to commit 10% of its housing stock to this model.

- Cluster and group housing as part of the development of social housing involving special care organisations to give the necessary support to residents. This could be in the form of individual units or as a cluster of units within a social housing development.

- Cluster and group care housing independent of social housing — a development provided by a special care organisation or in tandem with an social housing institution.

3.0 METHODOLOGY

Desk top research and a literature review of special needs housing were undertaken and a Policy and Research document produced (Drummond. 2015). This was followed by qualitative research on the status of special needs housing within social housing institutions. This looked at the different forms of special needs housing, financing frameworks, legal and policy implications, institutional mecha-

nisms, current policies and position papers on the subject, design and other technical and other technical elements such as compliance and norms and standards, as well as the experiences of the social housing institutions that engaged in housing for people with special needs in terms of challenges and lessons learnt. A questionnaire was developed and circulated to key stakeholders, tailored to each stakeholder grouping, followed up by interviews concentrating on the key stakeholders. Two site visits were undertaken, one as an example of people with a special housing need living in independent accommodation (SNIH), and to one social housing institution that provided group homes in conjunction with their partner voluntary organisation (SNGH). (SOHCO in Cape Town, and Yeast City Housing in Pretoria).

Interviews were conducted with social housing institutions as follows:

▪ Management in housing associations who have engaged with special needs housing such as Communicare and Madulammoho Housing Association. Note: Yeast City Housing Association were not specifically interviewed for this piece of work, but research and information about their engagement in special needs was taken directly from the author's previous experience of working with them, and the organisation was aware of this research.

▪ Selected SHIs who were either interested in engaging in special needs housing such as SOHCO and IMIZI, as well as those who had not yet really considered this: JOSHCO and First Metro Housing Association, to find out the reasons for this, and what factors would encourage them to partake in a programme to develop special needs housing.

Not all social housing institutions were interviewed or were part of the survey. Instead the focus was on those that were either already engaged in housing people with special needs in some way, or who had expressed an interest in doing so, but did not know how to go about it. The degree of interest and participation was taken from the author's knowledge of the sector and from interest expressed by participants from different housing institutions who were present at a meeting of NASHO members at which the researcher had made a presentation on the research work about to be undertaken on special needs housing. However, one SHI who had been present at that meeting, and who had said that they would like to take part in the survey, did not respond to phone calls or emails requesting details of their policy and practice in respect of housing people with special needs. In another case a telephonic interview took place. Visits took place to two social housing institutions, one that had extensive experience of developing special needs group housing, and another that was carrying out adaptations to self-contained flats for people with a physical disability.

Other interviews were conducted with relevant personnel in the Cities of Johannesburg and the City of Cape Town where there was some activity in the development of special needs housing, from both a human settlements and social development perspective. Interviews were also conducted with representatives from provincial government in Gauteng and the Western Cape's human settlements and social development departments. The Social Housing Provincial Steering Committee (PSC) for Social Housing in Kwa-Zulu Natal was also attended and a presentation given on the purpose of the research and to elicit the views of SHIs and municipalities in the province who attended the meeting. The Social Housing Regulatory

Authority (SHRA) and the National Department of Human Settlements was also consulted, and they also attended the Kwa-Zulu Natal PSC.

4.0 DISABLED ADAPTATIONS

The disability provisions included in the National Housing Code give greater accessibility for people with physical disabilities in normal housing projects who are homeowners and mainly as part of a new RDP housing development. Under the new Norms and Standards (2013), after April 2014, 45 meter square dwellings would be constructed for people with disabilities who are wheelchair users.

5.0 PRESENT STATUS WITH REGARD TO THE HOUSING PEOPLE WITH SPECIAL NEEDS: SUMMARY OF THE RESULTS OF THE SURVEY OF SHIs

There are two SHIs that actively cater for the needs of people with special housing needs, both linked to a faith based charity arm — Madulammoho HA (MHA) in Johannesburg and Yeast City Housing (YCH) in Pretoria, but in different ways. MHA has signed a Service Level Agreement with their faith based charitable partner, MES, to provide social work support to meet the needs of their tenants. YCH has worked with their partner faith based organisation, Tshwane Leadership Foundation (TLF) and developed special needs group homes using the institutional housing subsidy for different needs groups (women and girls at risk, OVC's, people with mental health problems, a hospice for homeless people). These specially developed facilities are managed by TLF, the NPO, for which they sign a lease with YCH and pay a (in some cases subsidised) rent.

Communicare in Cape Town has also provided accommodation for people with particular needs,

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in their case the elderly, and has employed social workers to provide support to this group. Currently 55% of their total tenant base is made up of older persons. They are now, however, trying to move away from this emphasis on housing older people and are developing a more coherent community development strategy with increased focus on the tenants. That will involve the phasing out of non-core programmes.[2] They also currently let out three of their houses on a lease agreement to separate NPOs catering for women at risk, the elderly, and people with intellectual disabilities, who manage the care and support required for the residents.

Some SHIs had a sister arm which dealt with social development or social work care issues with beneficiaries of special needs accommodation. For Communicare there is an internal division which deals with community development matters through its social workers, whereas Madulammaho HA had a sister arm in Mould, Empower, Serve (MES), and Yeast City Housing in Tshwane Leadership Foundation (TLF) which dealt with these matters. Both MHA and Communicare have a community development department, but "special needs" is not necessarily the same and requires a different set of competencies and funding streams.

Apart from the three specialist SHIs, of the SHIs contacted, only a few expressed interest in providing housing for the broader definition of housing people with special needs, apart from perhaps providing for an arbitrary percentage of new build units adapted for wheelchair users. Most SHIs cater for the needs of individual tenants who require their unit to be adapted because of mobility problems as they arise and retrofit a unit specifically for the needs of that tenant.

SHIs are focussing on the needs of their business and have no appetite to address the needs of people with special needs. If the provision of special needs housing is not perceived to be part of the mandate of social housing, then SHIs do not see it as a problem or issue that they are not catering for this client group.

In England where there are about 2 000 SHIs, most SHIs used to leave the development of special needs housing up to dedicated SHIs set up for that purpose. Over time, however, generalist SHIs took on the responsibility of being accountable for all the housing needs (including special) in their areas. The sector in SA is perhaps not yet at that stage of its development to be able to state that all SHIs must cater for all the needs in their area, especially as the funding structure does not support the provision of special needs housing. No funding is provided by the SHRA for the development of group homes for special needs, or to meet the needs of the disabled.

5.1 Summary of main findings of the Special Needs Survey of SHIs

The main findings were as follows:

- Only one SHI has embraced special needs housing by developing a range of different housing options for a range of special needs groups.

- Most SHIs are not providing for the housing needs of people with special needs, apart from perhaps people with a physical disability. This is despite the fact that the Social Housing Act 2008 states that SHIs should: "ensure their respective housing programmes are responsive to local housing demands, and special priority must be given to the needs of women, children, child

headed households, persons with disability and the elderly".

- There is no national policy or agreed guideline on what percentage (if any) of new units developed should be adapted for people with physical disabilities or other special needs.

- No dedicated capital funding is available to SHIs in order to carry out adaptations of units for people with particular physical needs. SHIs are therefore providing or retrofitting units for people with physical disabilities out of their own funds — either out of total scheme costs if a new development, or out of their operating (day to day) maintenance budgets.

- Most SHIs felt that the main issue was that the demand for disabled units was not that high, and even when specially adapted units are built or set aside, then there are often problems in finding tenants for them despite reaching out to disability groups and NPOs. Liaison with organisations dealing with special needs beneficiaries did not yield results.

- SHI's found it easier to retrofit a unit to meet the allocated tenants' individual needs.

- SHIs said that they could be open to housing people with special needs if that could be made sustainable and proper funding arrangements were in place. At present SHIs focus on complying with the qualifying criteria at the cost of providing for special needs beneficiaries.

- NPOs dealing with special needs do not have a champion to create the linkages between special needs and housing.

- The income of people on state

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2   Communicare. Annual Report. 2014

pensions or allowances precludes their ability to access social housing, as rentals are not affordable to the client group. There would need to be an operational subsidy to cater to people with special needs who cannot the current rent levels in social housing.

- The City of Johannesburg has a Pay for Service model that is meant to fund NGOs to provide an identified service to people in need, that could be replicated elsewhere as a funding model, but insufficient funding has been set aside under the programme and it is not meeting the needs of NPOs.

5.2 Possible reasons for lack of interest among Social Housing providers:

- Lack of sustainability in the social housing grant model; lack of capital grant (capex subsidy outstripped by development costs) and operating cost.

- The Communicare 2014 Annual report mentions a shift in organisational strategy from the current business model deployed to provide social housing, to a broader mantle providing affordable housing.

- The 'support wing" attached to some SHIs, such as the TLF to Yeast City Housing and MES to Madulammoho, are the 'do-ers', not the SHI.

6.0 WHO ARE THE PROVIDERS AND MAIN TYPES OF SPECIAL NEEDS HOUSING?

Non Profit organisations (NPOs) are institutions which provide social service type programmes within communities and are generally registered with provincial Departments of Social Development for this purpose.

There are differences in the form of housing which SHIs and NPOs would offer in cases of special needs. SHIs could offer special needs housing to those individuals who are able to live independently or communally in a mixed residential housing setting, i.e. a combination of individual units combined with a group facility, for beneficiaries who do not require any additional need for care giving. An SHI could also provide special needs group housing through a partnership with an NPO, as has been the case of Yeast City Housing in Pretoria. However, NPOs mainly provide group homes independently of SHIs. The types of facilities which NPOs would provide could vary from independent living to institutional care settings which require differing needs of care giving and support. The main delivery models are as follows:

6.1. Special Needs Group Housing (SNGH)

Special Needs Group Housing (SNGH) refers to group housing and associated residential care provided to low income people who are vulnerable and/or in special need usually requiring specialized care, resources or expertise. Such people are usually not able to live independently and have special care requirements, although there are cases where people who are able to live independently are accommodated in SNGH for particular reasons (e.g. older or disabled persons for reasons of affordability, security, or in need of general support).

NPOs are responsible for the furnishing and equipping of facilities and for ongoing operating costs and maintenance costs

6.1.2 SHI involvement in SNGH

Most specialist supported housing is usually independent of social housing projects, but special needs group housing could work in SHI-led subsidy schemes where the NPO identifies the beneficiaries and manages the social care aspects of the housing development on behalf of the SHI (PPT (2013b). The SHI signs a lease agreement with the NPO for the use of the property for which a rental will be payable. For example, Yeast City Housing in Pretoria has developed various group homes (SNGH) in conjunction with their partner NPO, Tshwane Leadership Foundation (TLF). Yeast would sign a separate lease agreement for each building developed for a special needs group that TLF would provide support services to residents and would be responsible for paying a rental for the facility developed to Yeast, to cover maintenance (and any loan or management) costs. The NPO would cover the balance of the running costs themselves, as well as the care costs, out of grant that they would apply for from the Department of Social Development, Health, the Lottery Fund, etc.

Special needs housing makes up 23% of Yeast City Housing's overall housing portfolio currently. The different models of provision are therefore dependent on there being funding available from the relevant oversight department to cover the necessary care and support costs. They provide group homes, with SNGH and SNIH located on the same site as independent, non-special needs, self-contained accommodation — a truly mixed housing development that showed that it is possible to integrate special needs group housing, special needs individual housing and self-contained units all within the redevelopment of an inner city building and site. The RCG programme allows for cross subsidisation between middle and low income earners, and this scheme allowed some cross subsidisation between the tenure types as well.

Communicare currently let out three of their ordinary housing units on a lease agreement for use as SNGH to separate NPOs catering for women at risk, the elderly and

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people with intellectual disabilities. The NPO pays a monthly rental to Communicare, and is responsible for the management of the care and support required for the residents. Other SHIs could follow this model, if they had larger houses within their stock portfolio to let out to registered and capacitated NPOs.

Madulammoho Housing Association (MHA) do not provide SNGH directly, but have signed a Service Level Agreement with their faith based charitable partner, MES, to provide social work support to meet the needs of their tenants. MES, as an NPO, have applied directly to provincial governments (in Gauteng and the Eastern Cape, for example) for subsidy funding to provide and run shelters for people with special needs, mainly for the homeless.

It is possible therefore for SHIs to undertake special needs group housing schemes, either directly themselves, or in partnership with an NPO. This could be as a stand-alone project, or by creatively using the relevant housing subsidies within a mixed housing development.

6.2. Special Needs Individual Housing (SNIH)

This is where low income individuals with special needs can live independently of institutional assistance, support or group care. These individuals in special need are typically unable to compete for housing (rental or ownership) in the open market due to affordability and vulnerability issues. They also typically find it difficult to access conventional low income state housing subsidies ('RDP' housing). In some instances, independent living might require additional care support in the beneficiary's own home, such as home-based care that will then be linked to an organisation providing such specialist services. The Western Cape wanted to allocate 10% of all units on social housing projects to meet this need.

An SHI could build self-contained units as part of social housing projects with special adaptations to allow individuals and households with special needs to live independently.

In general therefore, mainstream housing subsidy programmes are appropriate for SNIH (persons with special needs able to live without institutionalised support and care) even if it may be difficult in practice for people to access such housing opportunities.

National Association of Social Housing Organisations (2011) recommended that 5% of all units on social housing projects could be adapted for the needs of people with disabilities to enable them to live independently in a housing model which incorporates self-contained units for people with disabilities which are built as part of a social housing development. The draft special needs policy in the Western Cape's recommended 10%, but it was never enacted.

SHIs are open to exploring development of SNIH, but felt that there needed to be an operational subsidy in cases where people cannot afford the rentals. Most SHIs do cater for the needs of individual tenants that require an adaptation to their unit because they have mobility problems or are in a wheelchair as they arise, by retrofitting a unit specifically for that tenant. Any response is therefore ad hoc.

Another model for SNIH is that an SHI could provide stand-alone communal houses in one of their developments for say 6 – 8 persons with single/double rooms, shared kitchen, ablutions and living areas for persons with special needs.

From the survey conducted other SHIs provide dedicated, adapted units in their developments for people with disabilities, or retrofit units to meet their needs. They also try and engage with the needs of their tenants in the provision of SNIH

on an individual basis. Yeast City Housing has followed the practice of setting aside units for people with a disability in each of their new RCG developments of **2 – 2.5%** of the new units developed. SOHCO would like to reach a target of **at least 10%** of their developments catering to people with special needs. In the meantime they have adopted a retrofitting strategy.

7.0 THE PROFILE OF PERSONS WITH DISABILITIES IN SOUTH AFRICA AND RECOMMENDED RATIO OF DISABILITY PROVISIONS IN SHI PROJECTS

The 2013 General Household Survey found that **5,4%** of South Africans aged 5 years and older were classified as disabled.

Gauteng's Demand Database and Allocation Policy (2009) also stipulates that **5%** of each housing project to is be allocated to SNH.

For purposes of social housing therefore perhaps a figure of 2% of all new social housing units should be set aside for people with disabilities (mobility and sight, as well as other special needs), taking out the age and locational factors.

It is noted that just 5% of England's housing stock is fully accessible to older people and a quarter of homes have no accessibility features at all. The number of homes for older people owned by English housing associations has fallen to its lowest level in more than eight years by 2014.

In terms of actual demand for disabled adapted units, it was difficult for SHIs to get a proper assessment of the demand for the number of units that should be set aside for people with special needs housing.

SHIs have to comply with the provisions of the National Building Regulations and Part S of SANS 10400 (2011) in social housing for

persons with disabilities. Dwellings can either be designed to conform to this definition or existing dwellings can be altered, or retro-fitted, to conform. Universal Design principles are recommended that should allow for ease of living for all people, regardless of their age, size or disability.

8.0 RECOMMENDATIONS AND CONCLUSION

When an SHI carries out a Market demand assessment the needs of people with special needs should be included. Meetings should be held with key stakeholders in an area to decide what percentage of, say disabled, units will be required in a particular development, and disability statistics at Ward level interrogated in this regard.

People with special needs have significant difficulty in accessing mainstream housing so SHIs should accept the principle of preferential access to their accommodation for people with special needs who are able to live independently. For example, SHIs could set aside a percentage of their low income housing units for people moving on from a special needs scheme.

There should be a dedicated subsidy grant for disabled adaptations to SHI units, and clarity on where to get the funding from.

There are no uniform regulations that are nationally applicable and for norms and standards of accommodation for people with special needs. (For SNGH they are covered in the draft special needs housing policy).

There should be nationally applicable regulations regarding provision for adaptation and design, and percentage quotas for the delivery of special needs independent living units. It is recommended that SHIs provide 2% of all their units for people with disabilities.

NPOs should negotiate with SHIs for the allocation of clusters of low income rental units for particular groups—for example for abused women, or people with mental health problems (the Ottowa model in Canada). These could be in communal housing schemes and should be matched with revenue support.

Communal housing units should be eligible for Restructuring Capital Grant from the SHRA (at present this grant is only available to self-contained units of more than thirty square meters).

SHIs should work towards complying with Universal Design Principles in their new Greenfield developments.

Specialist NPO's should be funded by provincial social development departments to provide a care and support service to SHI tenants who have particular special needs. Under the Canadian model the NPOs sign an agreement with an SHI to provide support to a certain agreed number of tenants who have a special need. Alternatively there should be a revenue subsidy provided so that an SHI can employ the relevant people with skills to manage the care and support of any special needs beneficiaries.

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Neoliberalism in low-income housing policy — problem or panacea?

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Abstract:

The provision of decent, affordable and well-located housing for low-income communities has been an intractable problem, especially for developing countries. A recurrent issue in the discourse about this problem relates to the appropriate role of the State, on one hand, and the private sector, on the other. The debate has being given renewed urgency in the current context of a growing critique of 'neoliberalism' and a resurgent State. In the face of limited State resources, neoliberalism has been the dominant policy option. Through rigorous literature review, this paper intends to review the successes and failures of neoliberalism and explore the intricate linkages between neoliberal housing policy and low-income housing provision. The raison d'etre for the paper is that, despite the growing disenchantment with neoliberal housing policy, the empirical basis of this criticism has not been established convincingly, and neither have that of potential alternative policies. This paper therefore fills a critical gap in the low-income housing policy literature.

Key words: Neoliberal housing policies, private sector capital, low income housing provision.

1.0 INTRODUCTION

The provision of decent, affordable and well-located housing for low-income communities has been an intractable problem, especially for developing countries. With the development of the society and economy, urbanization is the inexorable trend for human society (Acma, 2005; Mashoko, 2012; Winchester, 2005) as is evidenced by a ballooning urban population. In Africa, the number of urban dwellers is projected to increase from 400 million to 1.26 billion between 2010 and 2050 (Van Waeyenberge, 2015). This exerts pressure on existing urban housing and exacerbates the scarcity of decent accommodation (Makinde, 2014), which has been a perennial issue particularly for the low income groups, often the most underserved in the housing market.

There is empirical evidence suggesting that if the urbanization process is left unchecked, there will be uncontrolled growth of cities, resulting in urban sprawl, overcrowding, lack of adequate infrastructure, as well as deteriorating air and water quality (Winchester, 2005), all of which are a threat to sustainable cities. This is of concern as urban housing delivery systems have been failing to anticipate the influx of people into urban centres (Kamete, 1999; Özdemir, 2011; Chitekwe-Biti, 2009; Winchester, 2005). The housing delivery systems that are in place are also not flexible enough to adjust to the demand for housing being exerted by the growing number of low income families in need of decent housing. Van Waeyenberge (2015) posits that as the ability of African cities to cope with the increase in urban population is questionable, it remains likely that a large part of these new urban dwellers will reside in slums and/or informal settlements, unless a solution is found. Governments all over the world, particularly developing, are thus seized with the search for a solution to the housing crisis.

Housing policy is defined as government action to achieve housing objectives. Badly-designed housing policies played an important role in triggering the 2007-2008 economic and financial crisis (OECD), results of which were global. But the importance of housing policy cannot be overlooked even locally, as it has both economic and social implications. Urban poverty shows itself though low earnings (Winchester, 2005) amongst other things and therefore, housing policies that have the potential to deliver low income housing solutions will be a double edged sword, contributing towards poverty reduction whilst resulting in sustainable cities. The result would be a reduction in households that are economically and socially vulnerable.

The World Bank is an international policy leader on housing, and the way it conceptualizes and supports housing policy influences national housing policy for governments in the developing world (Van Waeyenberge, 2015). The international community is expected to support national efforts to meet the human settlements challenges facing developing world governments, through supplementing the scanty resources of these governments by providing them with the necessary financial and technical assistance,

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as well as support for evolving institutional arrangements as they seek new and effective ways to solve the housing challenge (Buckley & Kalarickal, 2004).

Given this context, the purpose of this paper is to review evolution of housing policies, successes and failures of neoliberalism and explore the intricate linkages between neoliberal housing policy and low-income housing provision. The rest of the paper is arranged in five sections as follows: The following section briefly reviews the evolution of World Bank housing policy. Based on this review, the third section maps out the key issues under a neoliberal housing policy and the implications for low income housing. Criticisms of a neoliberal housing policy are detailed in section four. The penultimate section draws on the above discourse and explores neoliberalism as a potential panacea to the low income housing challenge. The paper ends with conclusions and suggestions for research.

2.0 EVOLUTION OF WORLD BANK HOUSING POLICY 1970 TO PRESENT

A recurrent issue in the discourse of low income housing provision relates to the appropriate role of the State on one hand, and the private sector on the other. The role of the State, as suggested through the World Bank funded projects has been evolving, from direct provision to technical planning solutions to affordability (Beer *et al.*, 2007). A summary of the policy lending instruments used by the World Bank to influence housing policy in countries and the associated role of the government is detailed in Figure 1.

A critical analysis of these programs and strategies reveals that these programs have largely been unsuccessful. Problems that have been cited with sites and services include: land acquisition problems, insufficient resources committed and poor cost recovery for the infrastructure and services provided (Mooya, 2009; Mayo & Angel, 1993). In addition to the above challenges, onsite upgrading problems also faced challenges of unsustainability due to lack of replicability, focus on physical construction, government failure to provide essential services, community failure to maintain facilities and land acquisition problems (ibid.). Targeting errors coupled with fronting also resulted in most beneficiaries being mostly middle income groups

(Mosha, 2013; Potts & Mutambirwa, 1991) contributing towards the ineffectiveness of these programs.

From the 90s onwards, lending for physical assets became less important in the housing sector, in favor of an enhanced focus on incentive related interventions, crucially through finance. The shift to housing finance sought to address two objectives: it provided opportunities for the World Bank to address broader economic issues and housing sector performance issues. A well-developed financial sector is perceived to yield greater economic benefits that would also impact positively on the housing sector (Mayo & Angel, 1993), and this has seen an increase in housing finance loans and housing policy loans.

A housing policy loan would typically seek to strengthen the institutional, regulatory and fiscal environment for a well-functioning housing market and to increase access for low-income and severely disadvantaged households to more affordable and higher quality housing through promoting mortgage lending via the provision of loan guarantees (Van Waeyenberge, 2015). The aim would be to attract banks to lower-income households, and the housing policy loans would

Period	Main policy and lending instruments	Role of the government
1970s	▪ Sites and services demonstration projects ▪ slum upgrading	▪ Direct provision of land, housing and finance to project beneficiaries
1980s	▪ Housing finance projects (interest rate reform) ▪ subsidy design ▪ improving institutional performance of government agencies	▪ Provision of housing finance by public institutions ▪ rationalizing housing subsidies i.e. reduction of housing subsidies, improving subsidy targeting and shifting from financial subsidies to fiscal housing subsidies
1990s	▪ Policy and lending instruments to stimulate demand and supply ▪ Institutional reform and coordination with macro-economic policy	▪ Policy making coordination ▪ regulatory responsibilities of an enabling role to facilitate provision of land and housing by the private sector ▪ improving coordination of sector and macroeconomic policy

Table 1: World Bank policy lending instruments, 1970s – 90s (Mayo & Angel, 1993)

allow government to guarantee loan made to low income earners. The government would then draw down on the housing policy as and when the need arose.

As a share of World Bank Group activities, which include IBRD, IDA and IFC operations, housing finance grew to represent over 60 percent of all World Bank shelter activities during the 2001 – 2007 period, while the combined share of slum upgrading and sites and services fell to 22 percent over the same period — down from 27 percent in the previous decade as shown in Figure 1.

Jessop (1990, 1997, 2002) quoted in Beer *et al.* (2007) argued that it is possible to identify four tendency shifts in the functioning of the state in the evolution of housing policy:

- The move away from hierarchical forms of government to more porous forms of governance.

- The subordination of social policy to economic policy.

- 'Vertical' reworking of policy powers, away from the pre-eminence of the nation state in economic management resulting in power, responsibilities and resources reallocated vertically.

- The internationalization of policy development.

Indeed, in line with Jessop's views, approaches to solving the low income housing challenge have seen a shift from state led and funded social housing to consortiums and PPPs, which represent governance that is characterized by the devolution of responsibility to cross-sectoral partnerships and networks with business leaders and civil organizations integrated into decision making and implementation of the activities of the state (Beer *et al.*, 2007). For sites and services, there would be project leaders, which would therefore bypass the rigidities and bureaucratic procedures caused by very long chains of command within the government. Programs such as *Economic Structural Adjustment Programme (ESAP)*, launched in 1990 in Zimbabwe, had economic goals that were expected to be prioritized over social goals, and the idea behind was that the economic goals would in the long run result in trickle down positive macro-economic advantages that would even benefit the poor. But, application of neoliberal policies have in most situations resulted in low rates of GNP growth, low wages, an increase in unemployment and poverty (Seisdedos, 2009).

Vertical' reworking of policy powers is seen through organizations like the World Bank, the IMF and the WTO that have the resources to aid developing countries and are thus prescribing policy actions for beneficiary countries that will have a direct impact on how housing is provided to the low income groups. The internationalization of policy development has seen countries adapting housing solutions that might have worked in other countries instead of trying to come up with novel solutions to the housing challenge. The World Bank has always placed emphasis on replicability on the housing projects that were implemented across national projects albeit on a bigger scale (Mayo & Angel, 1993)

However, Van Waeyenberge (2015) contends that sites and services and slum upgrading Programs which dominated the Bank's initial housing interventions from the
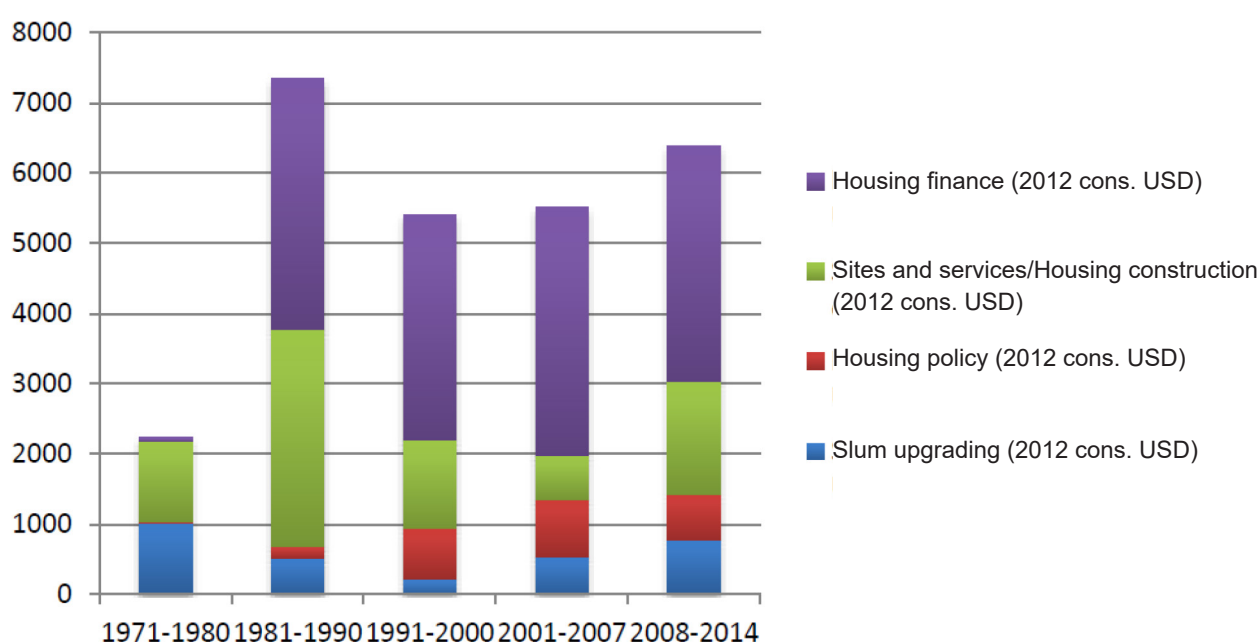

Figure 1: World Bank Group (IBRD, IDA and IFC) shelter portfolio across different types of intervention, in constant million 2012 US$, 1971 – 2014 (July) (Van Waeyenberge, 2015)

early 70s were meant to trigger private investment through dwellers' self-help efforts. Crucially, the interventions were guided by three primary objectives: to provide low-cost and hence affordable housing for low-income families; to recover costs from beneficiaries and eliminate public subsidies in housing provisioning; and, to create replicability of these projects by the private sector. Cost recovery would demonstrate profitability in moving down-market in housing provisioning.

3.0 NEOLIBERALISM: THE CURRENT POLICY LANDSCAPE

The components of a neoliberal housing policy are homeownership, private property and binding financial commitments, and these have been central to the political and ideological strategies through which the dominance of neoliberalism is maintained (Rolnik, 2013). Foci also commonly associated with neoliberalism in the housing market are free trade or commodification of land markets (Mooya & Cloete, 2007), free capital movements (Campbell, 2011) and reduced government intervention in housing markets (Mayo & Angel, 1993; Mosha, 2013).

In order to encourage and stimulate the supply of low income housing by the private sector, the World Bank emphasizes on the establishment of a suitable regulatory environment for the delivery of housing finance. The recommended strategy is to bring together infrastructure agencies to coordinate infrastructure provision that creates an adequate supply of serviced   land and a review of existing legislation to improve sector performance (Mayo & Angel, 1993).

Supply-side distortions in housing markets arise largely from policies affecting the inputs for housing: land, finance, building materials, or infrastructure. The legal and regulatory framework can also affect housing suppliers through exercising a dominant effect on the price and quality of housing (Mayo & Angel, 1993). The three supply-side policy instruments that can be used to boost housing provision to the low income sector are providing infrastructure for residential land development, regulating land and housing development and organizing the building industry to create greater competition in the building industry. The aim of these supply side instruments would be to remove constraints to the housing development process. Policies affecting the responsiveness of the supply side of the market to changes in demand, therefore, often offer the greatest potential for improvement in sector performance. Almost all countries now rely on a public policy approach that augments and compliments market processes rather than substitutes for them (Buckley & Kalarickal, 2004).

4.0 FAILINGS/CRITICISMS OF A NEOLIBERAL HOUSING POLICY IN THE LOW-INCOME HOUSING SECTOR

The neoliberal goals of capital accumulation through reliance on the free market for finance, shift of responsibility from government to civic society and rescaling of the state from central to local levels (Nijman, 2008; Fawaz, 2009) has been slated as it is perceived to marginalise the low income group. The market mechanism is assumed to be unable to provide adequate, affordable and equitable housing for all (Rolnik, 2013; Craig & Porter, 2006) and neoliberalism promotes insecurity of tenure through adoption of imperatives for developing a housing finance system such as enforceable foreclosure for mortgage lenders (Mayo & Angel, 1993; Mooya & Cloete, 2007). A number of researchers concur that neoliberalism and social policy are not compatible at all (Seisdedos, 2011; Pattison, 2009; Marx, 2008, Craig & Porter, 2006; Campbell, 2011) since markets and market principles have a tendency to overreach themselves, undermining the social fabric in which they are embedded and consequently dependent on (Forrest & Hirayama, 2015). In addition, reliance purely on the private sector for low income housing production can result in polarised society and gentrification (Hedin *et al.*, 2012)

Despite these reservations, the World Bank endorsed neoliberalism by expressing enthusiasm regarding the capacity and superiority of a market oriented approach to housing (Van Waeyenberge, 2015). In the early 90s it was thought that the overall performance of the housing sector in developing countries would be affected through the broad instrument of housing finance system development (Mayo & Angel, 1993). More than 20 years later, countries are still grappling with how to implement a neoliberal housing policy in the low income segment. Housing finance systems have not developed to the extent that was envisioned especially in developing countries**.** This could partly be due to characteristics of developing countries: macro-economic instability; fluctuating inflation; foreign exchange risk and short term investment horizons (Lea, 2005).

The finance system of countries is indisputably linked to the macro economic environment and volatilities within markets can destabilize the market, thus swinging the market far from the stability that is the cornerstone of long term housing finance. Indeed, it is unlikely that the housing problem can be solved without solving the economic problem (Moss, 2003). Two basic difficulties continue to exist regarding the wide spread adoption of market solutions for the low income groups: the scarcity of medium and long range funds, and insufficient

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development of financial markets (Winchester, 2005)

The World Bank is on the fence about state interventions in situations where the finance system is not mature enough to service all the mortgage needs. It advises that countries can institute directed credit schemes for housing in the form of either government-sponsored housing finance institutions, often supported by direct budgetary transfers, or specified lending targets for housing (also often at below-market interest rates) by commercial lending institutions. At the same time, the World Bank warns directed credit lessens incentives for resource mobilization by lending institutions and works against the principles of a well-functioning housing finance system (Mayo & Angel, 1993). The result of directed schemes may sometimes be that lending volumes for housing may be reduced to a level that is below one under a more neutral financial regime which permits lending for housing to seek its own level based on market conditions (ibid.).

The World Bank and international donor community was tasked with the role of disseminating lessons on how to develop sustainable housing finance and to foster housing micro credit institutions. A question which still needs to be addressed, especially in light of the subprime mortgage crisis between 2007 and 2009 which arose from the failure of the financial system is how decent and affordable housing for low income groups can be provided outside a framework of mortgage finance for home ownership (Van Waeyenberge, 2015)

Problems which have been cited in trying to provide finance to the low income groups are that it is difficult to measure their repayment capacity, but also because their income is neither regular nor high enough (Sivam & Karuppannan, 2002). This socialization of credit (Rolnik, 2013)

also comes with other challenges such as risk pricing and difficulties of measuring the repayment capacity (Rolnik, 2013; Aribigbola, 2008; Demirag *et al.*, 2011) given that most of the low income earners have very low incomes which might also preclude them from even qualifying for government guarantees (Mosha, 2013). For risk to be successfully transferred the receiving party has to possess both the competence to assess it fairly and the expertise necessary to control or minimize it (Gallimore *et al.*, 1997).

General movement towards neoliberalism in an economy with inflation, economic recession, escalating building costs is not likely to yield positive results since a stable economy is a critical success factor for the engagement of the private sector in the low-income housing space (Babatunde *et al.*, 2012; Moss, 2003; Stein, 2008). Demand for formal credit by low income groups for purposes other than consumption is low and access to credit by itself is therefore unlikely to be a catalyst for capital accumulation in contexts characterised by lack of investment opportunities, widespread risk aversion and high interest rates (Mooya & Cloete, 2007).

Detailed empirical evidence from countries where credit has been extend to the low income groups for housing purposes has shown that government guarantees were being used (Winchester, 2005). But this presupposes a state which has enough fiscal space to accommodate even the low income groups. This is not the case in most developing countries where the low income housing challenge is most severe. Most of these countries have huge fiscal constraints and large budgets that are not sustainable (Babatunde *et al.*, 2012; Lea, 2005; Loxley, 2013).

Besides access to market provided mortgages for housing, the major housing delivery models that have been used in most countries that have embraced neoliberalism include PPPs and private finance initiatives. These models have however yielded very low percentages of the required stock to the target group (Makinde, 2014; Mashoko, 2012; Ibem, 2011). The major problems that have been cited are the prohibitive cost of the final product resulting in an affordability gap. Contributors to this high cost have been cited to be the high cost of land, high cost of land registration and titling, leading to a conclusion that a neoliberal housing policy is unlikely to help solve the housing shortage.

5.0 COULD NEOLIBERALISM STILL BE THE POTENTIAL PANACEA TO THE LOW INCOME HOUSING CHALLENGE?

Researchers writing on neoliberalism are in consensus over one thing: neoliberalism is not uniform, and its expression at the local level is contingent upon local circumstances (Wang *et al.*, 2012; Fawaz, 2009; Beer *et al.*, 2007; Altmann, 2011) which can be influenced by the macro environment. The implication therefore for low income housing provision is that replication of projects based on successes in other areas will need to be supported by a lot of empirical work as those successful projects can only form the core of a shell and the empirical evidence can then be used to fill in the finer detail. There is thus need to look at each system in detail.

Despite the criticisms of the neoliberal housing production in the low income housing sphere, there have been listed successes. Winchester (2005) details the success of the neoliberal Chilean housing policy. The private sector was tasked with the role of building social **057**

housing and low income housing, and in the 1990s, roughly 800 000 homes were built for a county with 4 000 000 households, significantly reducing the housing backlog. A key feature of the housing policy however was the demand subsidy system that was in place. The government was also willing to offer credit to lower income families and mortgage guarantees for social housing. In China, where the replacement of socialist welfare housing with a market dominated system is hailed as probably the largest neo-liberal reform project ever implemented in the world (Wang *et al.*, 2012), most large banks were owned by the government and subject to centralized government control through a special inspection system. Government could instruct banks, both state and government, on mortgage rates, levels of deposit required, and to whom they should or should not lend. Property developers had strong links to the government, could negotiate planning and design standards and had significant advantages in acquiring land (ibid.)

So, how adopting a neoliberal policy will play out in any scenario in the provision of low income housing, should be a synthesis of ideal-type and contingent neo-liberalism ideas, and these neoliberal ideas should be highly flavored by contextual realities in the market in question. Internalization of policy development i.e. the increasing tendency for policy solutions to be borrowed and adapted across national boundaries (Beer *et al.*, 2007) can also act as a slow puncture in the neoliberal agenda for low income housing. Instead of adopting a top to bottom approach, there might be need to adopt a bottom up approach in solving the low income problem. From the few private players that are active in the low income housing space, why not study the business models and then address the challenges that are being faced

so as to replicate those projects within the same economic context without necessarily inducing any shocks that might destabilize the market. Each market, peculiar as it may seem, given the right support, is capable of eventually finding its own equilibrium point, even in the worst housing sectors. As long as the product is priced just right, there is likely to be a taker.

The World Bank warns that while largely private housing markets produce most of the housing in developing countries, this does not necessarily mean that these markets are either efficient or equitable (Mayo & Angel, 1993). Nor does it mean that these markets completely satisfy all housing needs or help attain broader development goals. Housing sector policies must be based on a positive view of how the sector actually works in a given context, and, as well, with specific notions of how it could work better (Mayo & Angel, 1993). The interplay between structure and agency should be investigated in a neoliberal context, and this calls for more empirical work on the low income housing space to substantiate the criticisms of neoliberal policies where they have been applied and to also detail their successes.

Policy makers have a choice: either to view the low income housing challenge from a problem based perspective, or to tackle this challenge through policies that seek to take advantage of the opportunities in urban economies. One way to do this is through viewing cities as motors for development, and as instruments for the growth and development of regional economies (Winchester, 2005). If there is a way that the housing challenge can be tackled through private sector involvement, then policy should be used to leverage those who are willing to try and serve this market. Use of capital in return for profit would require enterpris-

ing actors, and that would attract more and more players, resulting in economic growth. It is known that cumbersome and lengthy regulatory approval processes involved in land acquisition and development tend to limit the private sector participation in the housing industry. The bureaucratic processes lead to inefficiencies, wastefulness, exploitation, delays and high project cost (Makinde, 2014), and this insight can be a point of entry for the State to use policy to leverage private sector efforts in the low income housing sector.

The private sector has potential to significantly contribute towards solving the housing challenge and the key to involving the private sector in the provision of low income housing could incentives (Winchester, 2005). It should also be acknowledged that the private sector has always been the major contributor in the housing sector (Makinde, 2014; Sivam & Karuppannan, 2002) albeit not to the low income group. What research still needs to uncover is that key which will just sway the private sector towards the low income housing segment, despite there being low profits (Mosha, 2013).

6.0 CONCLUSION
Problems are likely to abound in adopting a neoliberal policy in the low-income sector, chief amongst which is very low-incomes among the targeted group to sustain mortgage finance. Volatile economies with high inflation, economic recessions and lack of primary mortgage instruments contribute towards hurdles in implementing a neoliberal housing policy. Notwithstanding all these similarities in how neoliberalism rolls out in the housing sector, there is recognition that neoliberalisation is spatially and historically uneven globally (Hodkinson *et al.*, 2013). It has a tentative character (Harvey, 2007) which is heavily influenced by political forces and

institutional arrangements, which begs for empirical evidence in the critique of neoliberalism as a possible solution to the housing challenge for the low-income groups.

But, neoliberalism, as has been detailed in the above case studies where it has been successfully implemented takes a slightly different form. It metamorphoses as agents in each economy adapt their strategies to shield themselves from any threats in the market. There is however paucity in empirical data on how the private sector can be incorporated in low-income housing provision as the link between conception and practice has not been made. A complete study on a project that is financed by the private sector under extreme conditions would thus yield results that might fill this literary gap.

Neoliberalism is anchored on markets, property rights and competition. The market can operate as a regulatory principle only if there competition in the market (Lazzarato, 2009). How can states create markets in the low-income housing sector? This is the topical question that should be under debate. This further highlights the need for a lot of empirical research where there is speculative development that is targeted at the low-income groups. From these studies, lessons can be extrapolated, with the aim of identifying any challenges so housing policies can be adjusted accordingly.

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Is the type of developmental local government in South Africa poised to lead the sustainable human settlements agenda?

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Abstract

The advent of a democratic dispensation in South Africa in 1994 has been marked by a passage of a myriad of legislative and policy frameworks aimed at radically transforming both the character and institutional architecture of the civil service into an instrument that facilitates the social, economic and political development of the communities. To this end, the macro and micro government structuring and functioning has been the main focus of the reform processes. The local government sphere has, in this respect, been redefined and accorded a new Constitutional status of existing as a sphere in its own right, though interdependent and interrelated with the provincial and national spheres. This paper critically examines obligations imposed upon the local government sphere by the redefined role of a developmental local government. Furthermore, this paper highlights few international experiences on local government reform that have served as an impetus to this paradigmatic change. A critical review of literature and the policy framework on establishment of the new local government is undertaken. Key interventions, by the national and provincial spheres, to stabilise and support the local government sphere are suggested

Key Words: local, spheres, developmental. communities, sustainability, services, rural, urban, municipalities, reform

1.0 INTRODUCTION

With the demise of the Apartheid system and concomitant replacement by a new democratic form of local government in South Africa, the immediate challenge of the newly-established structures and elected councillors has been to transform deep-rooted socio-political aspirations, particularly of the marginalised poor, into tangible improvement of living and working conditions. Molefe (1999:1) argues that the very definition of local government as a 'sphere' rather than a 'tier' already indicates an ideological shift away from the Apartheid hierarchy towards a democratic cooperative government. This paradigmatic shift has, at a local government sphere, been captured in the introduction of a concept of developmental local government.

The origins and principles under-pinning the developmental local government in South Africa is a matter under review in this article. Firstly, this topic calls for a movement down the memory lane on the history of local government in South Africa and its transition towards the adoption of a developmental local government. Secondly, particular focus is paid to the obligations of a new local government that are enshrined in the Constitution of the Republic of South Africa, Act No. 108 of 1996. Thirdly, the concept of a developmental local government is examined with reference made to international trends on local government reform. The latter analysis is followed by a brief exposition on the challenges that have confronted the developmental local government thus far. Finally, conclusions are drawn from the preceding analyses and recommendations are made to enhance government interventions.

2.0 ORIGINS OF A DEVELOPMENTAL LOCAL GOVERNMENT IN SOUTH AFRICA

Local government reform in South Africa has passed two major, analytical and distinct phases of policy reform, the first phase having been heralded by the Local Government Elections of 1995 and the passage of a new Constitution in 1996. The second phase, enunciated in particular in the White Paper on Local Government (1998), has been that of the establishment of a developmental local government with emphasis on participative planning and local economic initiatives as pre-eminent local government goals (Bekker & Leilde, 2003:144). However, it is important to note that local government reform in South Africa came out of a historical socio-political necessity, and this history is one of the focal points of this article. In addition, there is

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consideration of the Constitutional obligations imposed upon the local government sphere. Furthermore, this section touches on international experiences on local government transformation, from which South Africa could draw important lessons.

2.1 Historical background of local government reform

The White Paper on Local Government (1998) asserts that transformation requires an understanding of the historical role of local government in creating and perpetuating local separation and inequity and the impact of Apartheid policy on municipal institutions. Previously state structures were mechanisms of domination that discounted participation by the masses of the people. According to Mufamadi (2003:2) the totality of the Apartheid state machinery consisted of a central government, four regional administrations, ten Bantustan administrations, and over one-thousand two hundred racially-segregated local government administrations. The Group Areas Act is a key piece of Apartheid legislation that instituted strict residential segregation and compulsory removal of Black people from urban and farmland centres to 'own group' areas. Through spatial separation, influx control and a policy of own management for own areas, Apartheid aimed to limit the extent to which affluent white municipalities would bear the financial burden of servicing disadvantaged black areas. Pass laws served the purpose of restricting the permanent presence of Africans in urban areas.

Molefe (1999:10) furthermore argues that what made local government sustainable in South Africa in the past derived from the spatial arrangements resulting from the Group Areas Act. Government-favoured white municipalities generated their revenue base from the sale of African beer, bus transport from

labourers moving in and out of dormitory townships, rental of township houses by Blacks (who were not allowed to own them), and Apartheid regulations that discouraged retail trading and industrial development in Black areas.

With the establishment of the United Democratic Front (UDF), in the early 1980s, communities began to mobilise against the Apartheid local government system, with anger of socio-economic disadvantagement directed to Black Local Authorities (BLAs) that attempted to enforce rent and service charges on township residents to increase revenue. The chief weapons of black mobilisation against Apartheid local government were organised boycott of rent, service charges and consumer boycotts.

Regional Services Councils (RSCs) and Joint Service Boards (JSBs) were established to channel funds to Black areas, but such interventions were regarded by Blacks as "too little and coming too late" as the whole local government system in the homeland rural areas and townships was collapsing for the emergence of a negotiated settlement. The Local Government Transition Act, No. 209 of 1993, came after a process of spontaneous negotiations that occurred at a local government level and further harnessed at regional and national level, mapping out a process of change.

The Local Government Transition Act (LGTA) sketched out the following three broad phases of transition:

▪ **The Pre-Interim Phase** which prescribed the establishment of local forums to negotiate the appointment of temporary councils which would govern until the democratic municipal elections. This phase saw to the emergence of a two-tier system comprising Metropolitan Councils and Metropolitan Local

Councils for designated areas such as Gauteng, Durban and Cape Town. These councils had negotiating powers and functions.

▪ **The Interim Phase** beginning with municipal elections of 1995 and lasting until a new local government has been designed and legislated upon.

▪ **The Final Phase** when the new local government will be established.

Furthermore, District Councils were established out of old Regional Services Councils and Joint Service Boards. District Councils were tasked with a responsibility of assisting in the establishment of new primary structures in rural areas. A Transitional Local Council (TLC) model was applied in predominantly urban areas ranging from major cities to small rural towns. Three forms of government in rural areas were established. These were the Rural Councils, Transitional Representative Councils and Transitional Rural or District Councils for Remaining Areas.

2.2 Constitutional obligations for local government

In South Africa, the signing of the new Constitution in 1996 heralded the adoption of local government as the epicentre of the government delivery system, and at the heart of the poverty eradication initiatives (Department of Provincial and Local Government, 2002). Furthermore, the Constitution signified the adoption of a relatively new and innovative concept of 'spheres' as opposed to 'tiers' of government, which seek to establish new relations between public institutions, government structures and civil society.

Section 40 of the Constitution of the Republic of South Africa (1996) states that government is constituted as: national, provincial and local spheres which are 'distinctive,

interdependent and interrelated.' According to Reddy (2001:24) the word 'distinctive' grants local government some autonomy in terms of introducing variations within the defined structural frameworks. Consequently, local authorities should be able to individually determine how they intend fulfilling their Constitutional mandate relative to capacity, size, location and the historical and social context. The Constitution accords the local government sphere a legal status. As such, its role as a legal government structure functioning within a broader framework of a cooperative governance has been constitutionalised. The implications of this are that local authorities cannot be viewed as exercising delegated powers, but as a sphere in their own right.

Dikgetsi (2001:1) puts the concept of a 'sphere' quite succinctly when he says that local government is not a third level of government subordinate to a provincial and national government, nor is it a function of provincial and national government. This distinctiveness of local government from both the provincial and national spheres carries particular obligations for this sphere of government.

Section 151 of the Constitution provides for the establishment of municipalities with legislative authority vested in their councils. Municipalities have the right to govern on their own initiative the local government affairs of the community, subject to provincial and national legislation (Reddy, 2001:26). National or provincial government may not compromise or impede a municipality's ability or right to exercise its powers or perform its functions.

Apartheid policies have fundamentally distorted and damaged the spatial, social and economic environments in which people live, work, raise families and seek to fulfil their aspirations (Department of Provincial and Local Government, 2002:4). Given this context, and the urgent need to eradicate historical and socio-economic backlogs through accelerated service delivery to communities, the Constitution of the Republic of South Africa had no choice but to provide for greater powers and authority to the local government sphere rather than letting community development regenerate to the fate of organisational development. In this regard, Section 152 of the Constitution mandates local government to strive within its financial and administrative capacities, to:

- Provide democratic and accountable government for local communities.

- Ensure the provision of services to communities in a sustainable manner.

- Promote social and economic development.

- Promote a safe and healthy environment.

- Encourage the involvement of communities and community organisations in the matters of local government.

Furthermore, Section 153 of the Constitution provides for the developmental duties of municipalities, in that a municipality must:

- Structure and manage its administration, budgeting and planning processes to give priority to the basic needs of the community and to promote social and economic development of the community.

- Participate in national and provincial development programmes.

The Constitution of the Republic of South Africa has set a tone for the new local government. However, a closer examination of the concept of developmental local government is necessary to comprehend properly the obligations that are imposed upon municipalities by this new mandate.

2.3 Developmental local government defined

The White Paper on Local Government (1998) defines 'Development Local Government' as:

> Local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives.

According to Nkwinti (2000:1) the above definition translates into a reworked service delivery protocol at municipal level that addresses the needs of the poor and disadvantaged. Local budgets are required to flow from Integrated Development Plans (IDPs), and these plans have to be prepared through the most comprehensive process of public participation.

Local government legislative and policy framework that has been developed since the passage of the Constitution of the Republic of South Africa (Act 108 of 1996) enabled the establishment of wall-to-wall municipalities.

The concept of 'wall-to-wall' municipalities renders the distinction between what constitutes 'rural' and 'urban' rather fluid (Nkwinti, 2000:3). Where the municipal boundaries have in the past been confined to cities and towns, municipalities today include the rural areas. The newly-established municipalities in South Africa are expected to perform their developmental role in respect of the newly-established area, including what would traditionally be termed 'rural' and 'urban.' However, due to inherited disparities between the rural and urban areas, a primary responsibility of municipalities is to address the inequalities which fundamentally characterise the so-

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called rural areas.

One defining feature of the new system of local government is the space it offers to the ordinary people to become actively involved in governance. This move is supported by the enabling legislation which defines a municipality not just to be constituted of councillors and administration, but to include the local community as well. According to Bekker and Leilde (2003:146) the emphasis on local democracy promises residents engagements as:

- **Voters**: to ensure maximum democratic accountability of the elected political leadership for the policies they are empowered to promote.

- **Citizens** affected by local government policy: who express, via stakeholders' associations and ward committees, their views before, after and during the policy development process in order to ensure that policies reflect community preferences as far as is possible.

- **Consumers and end-users** of municipal services: who expect value-for-money, affordable, courteous responsive service.

- **Partners** in resource mobilisation: for the development of municipal area.

Although not compulsory, the new system provides for ward committees to be set up in each ward of a municipality in order to enhance participatory democracy. A ward committee comprises the ward councillor as the chairperson and up to ten other people representing a diversity of interest in the ward (Municipal Structures Act, 1998).

Van Rooyen (2003:1) holds the view that, indeed, traditional South Africa never had a culture of engaging communities in local government development affairs. Democracy brought new empha-sis to transparency in government activities, more public accountability and the notion of respect of human rights.

The adoption of the concept of developmental local government in South Africa has also been influenced by a general trend of local government transformation worldwide. It has generally been recognised that earlier centralised approaches to development that were adopted by most African countries were not effective in improving people's conditions, and that a different approach that allows beneficiaries to have a bigger say in priority-setting, allocation of resources and implementation of development programmes is more likely to generate the desired results.

Bekker and Leilde (2003:146) point out that, for South Africa, the failure of the Reconstruction and Development Programme (RDP) 'Ministry' (own emphasis) promoted the idea of decentralisation. The four priorities of the RDP, namely: meeting basic needs; developing human resources; building the economy and democratising the state and society were devolved, through an enabling legislation, to the local government sphere. While the country was pressed upon by its local socio-economic development needs, mechanisms to respond to such needs had to take due cognisance of international experiences, hence the disestablishment of the Ministry of the RDP in favour of a decentralisation of a special type, dubbed as developmental local government.

2.4 Overview of international local government transformation experiences

Some countries have adopted decentralisation as the main vehicle for transforming their societies, although the forms adopted range from a high degree of central control to extensive devolution of powers to local government. While decentralisation has, undoubtedly, gained popularity in the 1980s to 2000s, it has not been a new concept (UNDP, 2002). The term attracted attention in the 1950s and 60s when British and French colonial administration prepared colonies for independence by devolving responsibilities for certain programmes to local authorities. In the 1980s decentralisation came to the forefront of the development agenda alongside the renewed global emphasis on governance and human-centred approaches to human development. Today, both developed and developing countries are pursuing decentralisation policies.

As Ebel (2002:12) points out in his overview of decentralisation:

- The western world sees decentralisation as an alternative to provide public services in a more cost-effective way.

- Developing countries are pursuing decentralisation reforms to counter economic inefficiencies, macro-economic instability and ineffective governance.

- Post-communist transition countries are embracing decentralisation as a natural step in the shift to the market economies and democracy.

- Latin America is decentralising as a result of political pressure to democratise.

- African states view decentralisation as a path to national unity.

The UNDP defines decentralisation as the transfer of responsibilities for financing, management and resourcing and allocation from the central government and its agencies to the lower levels of government. There are three broad types of decentralisation: political, administrative and fiscal. Furthermore, there are four major forms of decentralisation: devolution, divestment, delegation and de-con-

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centration. These decentralisation approaches are analysed below:

- **Political decentralisation** refers to situations where political power and authority has been transferred to sub-national levels of government. This mainly manifests itself in elected and empowered sub-national forms of government.

- **Devolution** refers to the full transfer of responsibilities and authority to the local government level public authority that is autonomous and independent.

- **Administrative decentralisation** aims at transferring decision-making authority, resources and responsibilities for the delivery of the selected number of public services from the central government to other lower levels of government agencies.

- **Fiscal decentralisation** refers to the resource allocation to sub-national levels of government.

It should be important to note that all governmental systems are likely to have elements of devolution, de-concentration and delegation. As such, a clear delineation of forms of decentralisation is not possible. However, a general understanding of the various forms should assist in deepening our understanding of the direction local government transformation is likely to follow in various countries.

Decentralisation in Morocco, for instance, is not a new experience. Since the 1960s the country tried to respond to growing social pressure assigning certain management and decision-making functions to the local government level. A decentralisation law was passed in 1973, and two constitutional reforms were introduced in 1986 and 1992. The process undertook the form of moderate devolution. While sub-national authorities can exercise a number of legislative and administrative powers, the central government limits the resources allocated to sub-national governments. In addition, the local entities have only some degree of autonomy in the allocation of resources since they are under the authority of the Ministry of Interior.

Uganda, on the other hand, had started its reforms to decentralise to the district level since the early 1990s. The new Ugandan constitution adopted in 1995 devolved responsibilities and powers to local government. The Uganda Local Government Act of 1997 deepened reforms by giving authority to local councils at the sub-country level to raise resources and initiate development projects. Local councillors were elected in 1998 at various levels of government, though their responsiveness to the electorate is still to be tested. Fiscal decentralisation has accompanied the decentralisation of responsibilities. However, overall resources remain meagre and transfers from the central government are low and increasingly tied to conditions, leaving little room for local discretion. Furthermore, broader reforms are necessary to achieve effective participation by villagers. Local elites still exercise more influence in determining how funds are used. A number of local leaders are held back by illiteracy, lack of knowledge of government procedures and low awareness of their rights.

A brief journey throughout international local government reform has generated important lessons for South Africa. Firstly, it has been observed that even where there is a thorough going devolution of decision-making power to local government, the poor may still be effectively excluded. The domination by elite groups which characterised the Bantustan local government processes may still prevail in a democratic dispensation. Elite groups usually act solely out of self-interest or are regarded as mere capable representatives of local communities.

Secondly, the ability of decentralisation to promote local economic activity, which is crucial for human development, as would be the case under a centralised system, has not been clear. While some successes of decentralised systems have been recorded elsewhere, positive economic consequences are said not to flow automatically. There are instances where decentralised government structures failed to provide a positive link which promotes local economic activity.

3.0 KEY PRINCIPLES OF A DEVELOPMENT LOCAL GOVERNMENT

Traditional and developmental local governments are, inherently, two distinct behavioural and functional entities in the context of the South African civil service reforms. Outlined in the next section is the new role, principles and approaches that underpin the developmental local government.

3.1 New Vision – New Mandate – New Role

Local government in South Africa has been given a new constitutional mandate of creating and maintaining a humane, equitable and viable human settlements (White Paper on Local government, 1998). It is the intention of the White Paper that a developmental local government should have a positive impact on the daily lives of South African citizens. Where municipalities do not develop strategies to meet community needs and improve the quality of life of people within their jurisdiction, national government may have to adopt a more prescriptive approach towards municipal transformation.

Moosa (1998:1) contends that local government, in South Africa, has been given a distinctive status and role in building democracy and

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promoting socio-economic development. This is a role that should be successfully carried out by each municipality to avoid constant interventions from national and or provincial government

In addition to the traditional functions performed by a municipality such as the provision of essential services such as water, electricity and refuse removal, municipalities are, in terms of the newly-defined mandate, required to lead, manage and plan for development of communities (Taylor, 2004:217).

3.2 Characteristics of a developmental local government

The four characteristics of a developmental local government are viewed as:

- Maximising social development and economic growth.

- Integrating and coordinating government, business and non-profit sector activities.

- Democratising development through empowerment and redistribution.

- Fostering social capital at the local level via a leadership approach committed to learning (Swilling, 1998:1).

One of the most important methods for achieving coordination and integration is integrated development plans that should be prepared in collaboration with local communities. The preparation, implementation and review of IDPs will seek to achieve the four ideals of a developmental municipality in a more integrated manner.

3.3 Development approaches

To achieve the developmental outcomes that are enunciated in the Constitution of the Republic of South Africa (1996) will require quite significant changes in the manner local government operates. The White Paper on Local Government presents three interrelated approaches which can assist munici-

palities to be more developmental. These are:

- Integrated development planning and budgeting.

- Performance management system.

- Working together with local citizens and partners.

These approaches which have been introduced with the passage of the Municipal Systems Act (2000) have at their centre a need to promote community participation. Masango (2002:52) asserts that public participation lies at the heart of democracy.

Municipalities are required to employ whatever possible mechanisms, including participatory planning and performance management to promote community participation.

4.0 CHALLENGES FACING DEVELOPMENTAL LOCAL GOVERNMENT

As it has been alluded elsewhere in this article, developmental local government followed in South Africa is not without its own challenges. Some of these challenges are analysed below.

4.1 Ensuring community participation

Addressing citizen apathy is a duty imposed upon each municipality by the Constitution of the Republic of South Africa (1996). Promoting broad community participation requires resources within a municipality. It is almost a universal norm that participation in local government elections is significantly lower than in provincial and national government elections. Given the new mandate of local government in South Africa, this situation will require to be turned around.

Distinction should furthermore be made between domination by the elite and the voice of the poor in municipality affairs. Factors which consistently limit the meaningful participation by the poor and the

historically-marginalised societal groupings such as women and people with disabilities will require a focused attention if the ideal of local democracy shall be realised in the future.

4.2 Developing human resources

For the new local government to succeed in its mandate there shall have to be a concerted effort to invest in capacity building interventions for elected councillors, municipality officials and the community members. The ability of elected councillors to comprehend huge documents generated by consultants appointed on various local government matters has remained a cause for concern. In addition, the municipality administration needs strengthening in key competences of financial management, information and communication technology, development planning, engineering and other technical skills.

4.3 Responding to the massive service delivery backlogs

Despite the efforts that are made to expand municipal services and address unmet basic needs of the poor and eliminate socio-economic backlogs, accumulated over the years of colonialism and Apartheid, the task ahead remains huge.
By 2000 the Development Bank of Southern Africa estimated the investment required to clear service backlogs in municipalities to vary between R47 billion and R53 billion. The Development Bank of Southern Africa furthermore noted that at the investment levels in infrastructure (including electricity, refuse removal, telecommunication, housing, water and sanitation) existing backlogs could only be met in 2065 through public sector investment.

5.0 INTERVENTIONS TO STRENGTHEN LOCAL GOVERNMENT CAPABILITY

With new systems and structures in place, strategic interventions have been required to support and transform local government into an effective instrument for socio-economic development. Some of these interventions are outlined in brief below.

5.1 South african local government association (SALGA)

National Parliament of the Republic of South Africa passed the Organised Local Government Act, No.52 of 1997 that recognises the establishment of SALGA as a collective voice for local government, thereby enhancing its collective strength in cooperative governance matters. SALGA is an association of municipalities in South Africa, whose objectives include:

- Promoting sound labour relations practices that can achieve high levels of performance and responsiveness to the needs of citizens.

- Representing, promoting, protecting and giving voice to the interests of local government at the national and provincial spheres, in intergovernmental relations and policymaking fora.

- Building the capacity of local government to contribute towards a developmental and democratic governance system that can meet the basic human needs (Tsatsire, 2008:86).

5.2 Project consolidate

This is a hands-on initiative premised in forging partnerships between the three spheres of government that will result in practical improvement in the quality of life of people at local level.   Project Consolidate was launched at a national level in 2004 with intentions to systematically analyse and evaluate the challenges that must be addressed in each municipality, focusing on institution-building, service delivery and economic growth and development. Project Consolidate commenced in earnest in 2005 with the establishment of Programme Management Units at national and provincial government spheres and coordinating structures within municipalities. The key focus areas of Project Consolidate are:

- Municipal transformation and institution development.

- Municipal financial viability and management.

- Basic service delivery and infrastructure development.

- Social and economic development.

- Good governance and public participation (http://www.dplg. gov.za).

5.3 Siyenza manje (we are doing it now)

The Siyenza Manje (English translation: we are doing it now) initiative was launched by national government in June 2006 and is managed by the Development Bank of Southern Africa's Development Fund, with an objective of building capacity at municipal level. The initiative was aimed at complementing the government's Project Consolidate, which identified underperforming municipalities to provide them with assistance. Siyenza Manje focused on deployment of experts to municipalities to assist with the implementation of infrastructure projects, planning and financial capacity building (http://www.dplg.gov.za).

5.4 Five-year local government strategic agenda

Building on previous interventions in local government, National Cabinet adopted a 5-year Local Government Strategic Agenda for the 2005 – 2011 electoral cycle. The 5-year Local Government Strategic Agenda had the following key objectives, commonly-known as the strategic priorities:

- Mainstreaming hands-on support to the local government sphere to improve municipal governance, performance and accountability.

- Addressing the structure and governance framework of the state in order to effectively support and monitor the local government sphere.

- Refining and strengthening the policy, regulatory and fiscal environment for the local government sphere, and giving more attention to the enforcement measures.

Each strategic priority was broken down into key performance areas, and each KPA had clear interventions, high-level activities and deliverables or outputs expected within pre-determined timeframes by responsible institutions, across the three spheres of government (Department of Provincial and Local Government, 2005).

5.5 Municipal turn around strategy (MUTAS)

With the coming of new administration in 2009, National Government, led by the Ministry of Cooperative Government and Traditional Affairs undertook a country-wide assessment of the 283 municipalities. The main purpose of the assessment was to ascertain the root causes for poor performance, distress or dysfunctionality in municipalities. From these municipal assessment reports a State of Local Government Report was consolidated and released after an extensive consultation with stakeholders. Following the analysis of the findings of the municipal assessment studies a Local Government Turn Around Strategy was developed. Some of the root problems identified during the assessment of functionality of municipalities included:

- Systemic factors.

- Policy and legislative factors.

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- Political factors.
- Weaknesses in the accountability system.
- Capacity and skills constraints.
- Intergovernmental fiscal systemic factors.

The LGTAS was premised in the following assumptions:

- Local government is everyone's business.
- The structure of local government system remains the same.
- The local government system is still new and evolving.

The LGTAS is a high-level, government-wide response aimed at stabilising local government and putting municipalities back on a path of responsive and accountable service delivery. The LGTAS is premised upon a methodological approach that there must be a differentiated and targeted support system for local government. This support system focuses on two interrelated streams:

- Institutional measures to facilitate improved service delivery of infrastructure and services in the short- to medium-term.
- Structural, policy, legislative and capacity building measures in the medium- to long-term (Department of Cooperative Government and Traditional Affairs, 2009).

6.0 CONCLUSION

It is clear that the legacy of geo-spatial development inequalities and urban inefficiencies in South Africa, which came as a result of racially-based Apartheid policies, has been carried over as a new responsibility of the new democratic order. The legislative and policy framework of the past regime has been abandoned in favour of a new policy dispensation which places participation of the communities in municipal affairs at the centre of

development. The local government sphere has been accorded a legal and constitutional status of being distinctive though interrelated and interdependent with the national and provincial government spheres.

Although the transformation of the South African local government into a democratic and people-centred dispensation has been triggered by a mounting socio-political pressure during the 1990s, it was equally met by a global movement, at the time, from centralised development approaches to more decentralised forms of development management. Decentralisation, which is characterised by community participation and empowerment on issues of governance, has been viewed as central to market liberalisation and sustainable community development.

Despite the national and provincial government interventions that have been made to stabilise the local government sphere in South Africa since 1994, municipalities are still faced with challenges that hinder their ability to lead societal development and economic growth. However, the notion of local government being everyone's business emphasises the importance of partnerships between government, communities, civil society and the private sector in addressing the constraints bedevilling the local government sphere.

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Assessing the condition of "as built" innovative building technology homes against theoretical expectations

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Abstract

The housing sector in South Africa is facing many challenges to meet the ever growing demands of the poor. There is a need for the country to find more sustainable and innovative ways to solving many of the housing challenges. It is generally accepted that Innovative Building Technologies (IBT) can become a way of solving some of the performance issues, especially if certified systems are used for large scale projects. Due to a shortage of technical skills at the levels where housing projects are procured and managed, more guidance is required to ensure good quality houses are rolled out. However, it is not known how the "as-built" IBT systems perform in terms of its certification, of which the theoretical evaluation is accepted to be enough verification on the outcome of the end product. An assessment tool was developed that evaluates the physical condition of constructed IBT homes. This study aims to determine the condition of IBT houses through establishing the latent defects any time after the construction process. The paper mainly focusses on the results of a starting phase of inspections and pilots the tool for a number of IBT systems in the country. Using descriptive statistics one can measure the dispersion around the central tendency of the inspected IBT houses. The results indicated a median and mean of the overall performance in terms of defects that is acceptable, but provides a variance or dispersion that is negatively skewed and can be a cause for concern.

1.0 INTRODUCTION

Government and human settlements' stakeholders have committed to deliver 1.5 million housing opportunities by 2019 to address the growing housing shortages (Petterson, 2014). Going forward, the Minister of Human Settlements put emphasis on the delivery; the ability to deliver faster, better and more efficiently (SA Government, 2014). National Department of Human Settlements has encouraged the use of innovative building products as a means to solving the housing problem, and that these must preferably be localised to contain costs (SA Government, 2015). However, there have been issues raised by Human Settlement's department on current IBT low-income housing projects concerning structural problems, possible high construction costs, poor accessibility to the supplier, lack of proper maintenance plans, and lack of inspection skills (PMG,

2011). This study focused on the technical performance issues, which were further investigated to be able to reduce the risks to government in terms of protecting the consumer from housing defects (South Africa, 1998).

2.0 RESEARCH ON PERFORMANCE OF IBT AT POST-CONSTRUCTION PHASE

Limited research has been done on the general performance of low-income houses built using Innovative Building Technology (IBT). Although critical studies have been completed on evaluating the thermal performance of IBT in the country, based on simulations or through controlled experiments (Conradie, 2014; Van Wyk, 2010) for different climatic zones, not any monitoring has yet been done on the condition of constructed IBT homes.

The country does not know how subsidised IBT homes occupied by

low-income persons and built by the IBT system owner are performing technically. The answers will guide the country to know what regulatory measures need to be put in place to reduce the risks to government and beneficiaries from housing defects (South Africa, 1998). This has become essential, as innovation could become a means of solving subsidised low-income housing challenges (Burger, 2014).

3.0 METHODOLOGY

The approach used for determining the condition of "as-built" IBT homes was to follow an inspection process. Inspectors from regulatory institutions assessed the condition through establishing the extent of visual defects using a measuring tool. The condition of a building was ascertained through identifying defects as a result of design errors by professionals, a manufacturing flaw, defective materials, improper use of installation of materials, not conforming to the design by the

contractor, or any combination of the above (Findlaw, 2011: online; Ahzahar *et al.*, 2011: 250). A final score ascertained the general technical performance which was analysed using descriptive statistics to determine the general performance of homes using IBT. The intention would be to obtain results from an adequate representation of IBT homes in South Africa to make related generalisations.

Of interest is a condition assessment tool standardised by the Dutch Government Building Agency in 2002, which was chosen to base the development of the South African Condition Assessment Tool (SACAT) on. An advantage of this tool is that most South African building inspectors from regulatory institutions will be able to apply this in the case of innovative building technologies due to its usefulness and efficiency. The aim of such a tool was an objective visual assessment of the technical quality to provide property managers with unambiguous reliable information about the technical status based on assessed defects.

One third of the Dutch housing associations (associations providing decent, affordable rental housing to lower-income households and managing building maintenance processes) use condition rating to record the technical status of the building components (Vijverberg, 2004). But condition assessments vary for the hierarchal classification of building components, classified defects and the use of condition parameters. Several condition assessment methods lead to variable condition rating results, while examining the same defects (Straub, 2003).

This standard tool can be used by property owners, tenants, consultants, contractors and inspectors of control bodies. Application of the standard can include the following:

- visualisation;
- maintenance planning;
- prioritising of maintenance budgets;
- control of physical conditions; and
- communication about the actual assessed physical condition and desirable condition (Netherland standardisation institute, 2006).

The Dutch assessment provided a scoring in terms of the critical defects (symptoms) identified. This type of assessment would allow South African government to choose from those IBT systems on the ground that qualified (with a qualifying score) to be placed on an IBT database. It needs to be highlighted that it is not the intention of the tool to ascertain the origin of the deficiencies in this phase.

4.0 METHOD USED

A systematic process for data collection was followed of which subsidised IBT homes for the poor persons were sampled, constructed by the IBT system owners. These homes were taken from the NHBRC IBT database. This dynamic IBT database was established by NHBRC through advertising in newspapers; calling upon all interested IBT system owners that can assist government with IBT housing projects, as well as obtaining a list of certified systems from Agrément South Africa. To qualify to get on the IBT database for inspections, the IBT system owner must have an Agrément certificate or rational design approval and have constructed IBT homes in the country. The processes included stages whereby the SACAT tool was pretested and then piloted. In the pretesting phase, two rounds of inspections were carried out on unoccupied IBT show houses at Eric Molobi Housing Innovation Hub in Soshanguve. The purpose of pretesting was to ensure uniformity in application.

Five inspectors tested the tool's scoring to preferably converge within at least 10 points and reflect the severity of the defects in terms of health, safety and the environment. The tool was thus calibrated for the first two rounds by means of changing the weighting of the components. In this context the structural safety was weighted higher than the other components. The tool also included the minimum energy efficiency requirements in terms of checking the roof insulation, and whether there were air leaks around openings. Thereafter, the tool was piloted on IBT houses in provinces in which beneficiaries lived. The first 12 IBT homes on the NHBRC database were inspected for the piloting stage in 6 provinces such as Limpopo, Gauteng, Eastern Cape, KZN, Western Cape and Freestate, using a condition assessment tool. The names of the different IBT systems are not mentioned, as this study aims to establish general performance.

Visual assessments were performed by trained inspectors using some small equipment and measuring tools. An inspector passed through the following SACAT condition parameters: importance of defects, intensity of defects and extent of defect. The extent of the intensity of a defect combined with the importance of the defect lead to a condition rating, with a defect score (Straub: 2009:26).

The main components of this study's assessment tool encompassed the sub-structure, superstructure, roof, services and finishes concerned with health, safety and the environment. Scoring differed from the Dutch condition assessment tools' six-point scale (Straub, 2009:25) in that the extent and intensity was measured by a five-point scale with 1 being critical and 5 minor to make the distinction between the points easier. The importance of the elements

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(component type) was weighted in terms of the defects that can directly harm the function of the building component. Once all the elements were evaluated the scores were carried over to be weighted again in terms of the key components that are a high risk to the NHBRC mandate, which focuses on the structural strength and stability. The overall score was indicated as a percentage and categorised in grades of A, B and C. A good score would preferably be accepted as an A Grade. The grades and related percentages are indicated in **Table 1** below. The theoretical expectation would be that IBT homes with certification should be able to attain these scores.

Grades	Percentages
A	≥ 81%
B	61% – 80%
C	≤ 60%

Table 1: Performance grades

Those scores that were on the borderline were given an additional opportunity to qualify by adding percentages of between 1% and 5% to the total end score. The additional score was to provide a higher reward to those houses that were older and still performing well. This resorted to 1% extra for a house 0 – 5 years old; 2% extra for house 6 – 10 years old; 3% extra for a house 11 – 15 years old; and 5% extra for a house 16 – 20 years old. If the wall element score was 75% or more the system would qualify for an additional percentage to possibly get a qualifying score. The older the system was, of which the superstructure was still functioning well, the higher the additional score became.

5.0 ANALYSIS AND RESULTS

Measures of average such as the median or mean were used to represent the typical value for a dataset. Within the dataset the actual values usually differ from one another and from the average value itself. The extent to which the median and mean are good representatives of the values in the original dataset depends upon the variability or dispersion in the original data. Datasets are said to have high dispersion when they contain values considerably higher and lower than the mean value (Powers, 2013:83 – 85). For this study the degree of dispersion in relation to the mean in terms of the interquartile range and possible outliers to the latter was critical (Van Elst, 2013:22).

The results indicating the magnitude of the defects for each IBT house inspected are provided in **Table 2.**

Using descriptive statistics the central tendency for both median and mean were calculated, as well as measures of dispersion. In addition to the central tendency the IQR explains where the middle 50% of the data is located, while the SD provides clarity about the spread of the data. It is also known that the IQR is very resistant to outliers (and to some degree skew) while the SD is not. The results of the minimum (Min.), first quartile (Q_1), median (M), third quartile (Q_3), interquartile (IQR), maximum (Max.) and outliers are indicated in the **Table 3** and the boxplot in **Figure 1**.

The results indicated that for the 12 assessments completed the median was 86.27%, which means that 50% of the data is situated there and measures the central tendency. The Q_1 (also called the lower quartile) was 68.48% and is the num-

Labels	Sample 1
Min	60.15
Q1	68.48
Median	86.27
Q3	93.94
Max	96.14
IQR	25.45
Upper Outliers	0
Lower Outliers	0

Table 3: Results of the central tendency using the median
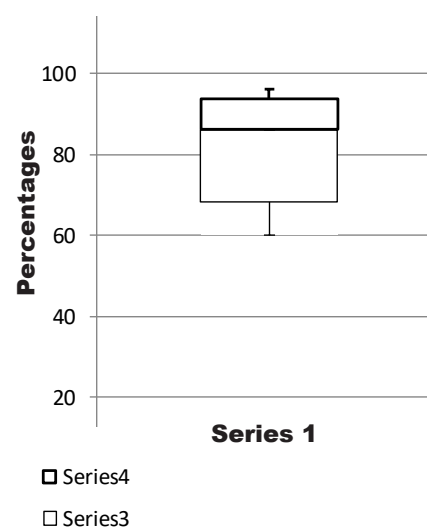

☐ Series4
☐ Series3

Figure 1: Boxplot displaying the distribution of data

ber below the median, which was situated within the 25 percent of the bottom data. The Q_3 (also called the upper quartile) was 93.94% and had 75 percent of the data below it and the top 25 percent of the data above. This indicated that the Q_1

IBT Building	1	2	3	4	5	6	7	8	9	10	11	12
%	60.75	95.12	92.42	86.14	62.20	82.23	70.58	93.55	60.15	96.14	96.00	86.41

Table 2: Results of the inspected IBT buildings

was further away from the median than the Q_3 of which the lower quartile skews the central tendency results. The results are negatively skewed as the distance from the median to the minimum is greater than the distance from the median to the maximum. The IQR calculated as the difference between upper and lower quartiles (Q3 – Q1) was 25.45%, which is quite far apart. These results therefore question whether the median is a good representation of the central tendency.

The SD is a measure that summarises the amount by which every value within a dataset varies from the mean. Generally, when the values in a dataset are tightly bunched together, the SD is small. When the values are spread apart the SD will be relatively large. The results for the SD calculation are indicated in **Table 4**.

Measurement	Result
Mean	81.81%
Variance	191.46
Standard Deviation	13.83%

Table 4 : Standard deviation calculation results

6.0 CONCLUSION

By comparing the median to the mean, one could get an idea of the distribution of a dataset. When the mean and the median are the same, the dataset is more or less evenly distributed from the lowest to highest values. If a distribution is not normal it is said to be skewed and is not symmetrical and the values of mean and median are not the same. If extreme scores are on the lower end of a distribution it is said to be negatively skewed. A negatively skewed result occurred due to the mean of 81.81% being less than the median of 86.27%. Moreover, the IQR of 25.45% indicated how spread out the middle half of the data was and the SD

of 13.83% indicated a wide error range. The nature of the distribution therefore increases the uncertainty of the results.

When we compared the results to the expected "good" results for this study, graded as ≥81%, then both mean and median complied. However, the skewed and wide distribution of data increases the level of uncertainty and therefore justifies the requirement for further investigation.

7.0 DISCUSSION

The description of the dataset for the pilot study suggests that there are questions as to the true central tendency. Further investigation is required by extending the study to draw inferences from a larger sample size that is a better representation to make generalisations. Not only should the sample size be increased, but IBT homes should be monitored at a relevant frequency to compare the results of the same homes that can establish possible degradation over time. Future investigations could also provide more insight as to whether the IBT database is really necessary and could shed light on the components of a home that will require more scrutiny during general inspections of IBT systems.

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The governance of increasing precariousness in wealthy settings: The case of Msawawa informal settlement, Johannesburg

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Abstract

Informal settlements have been a necessary part of the City of Johannesburg since its inception, providing much needed living environments for those excluded from its formal residential areas. In the past two decades, informal settlements have emerged on the city's northern expansions, where peri-urban smallholdings are rapidly subdivided and developed into exclusionary gated estates. New informal settlements have accompanied this expansion, responding to opportunities in domestic employment and more precarious livelihoods such as waste picking and recycling. This paper focuses on Msawawa, an informal settlement that emerged rapidly on an abandoned smallholding as adjacent properties were being transformed into gated developments. The paper presents both quantitative and qualitative data on the precariousness of households in this settlement within their socio-spatial context.. The paper places this profile of precariousness of the residents of Msawawa in relation to the governance structures and processes through which this condition is sought to be addressed. On the basis of an approach to gathering empirical data, combining a quantitative survey with qualitative key-informant interviews, we are able to show an interconnection between household socio-economic conditions and governance. This allows us to conclude that more effective forms of governance are required to counter the pressures that would have residents displaced rather than lives improved in informal settlements such as Msawawa.

1.0 INTRODUCTION

Over the past two decades, the City of Johannesburg has faced challenges in guiding development in its peri-urban areas. On the one hand, landowners and developers used political connections, as well as loopholes in the spatial land use management framework, to realise their aspirations of profitably, subdividing and developing smallholdings into gated townhouse developments or exclusionary upmarket estates (Harrison, Todes & Watson, 2008; Murray, 2011). A fragmented environment has resulted in contravention of successive municipal spatial frameworks which envisaged nodal and corridor development, urban compaction and the containment of urban development with an urban edge (Harrison *et al.*, 2008). On the other hand,

unplanned informal settlements emerged in pockets on abandoned or poorly controlled smallholdings, due to labourer displacements from former smallholdings, as well as the growth of domestic employment with the suburban expansion (Beall, Crankshaw & Parnell, 2002; Huchzermeyer, Karam, & Maina, 2014). Informal settlements in this context remain unwanted, both by landowners and the municipality. They are earmarked for future relocation to socio-economically segregated, planned developments. As the Sustainable Development Goals bring questions of justice, inclusion and equitable cities to the fore, the South Africn peri-urban context requires urgent attention.

In this paper, we provide a snapshot of an informal settlement that exists within the 'poorly planned landscapes' of this 'contemporary

peripheral urbanisation' (Murray, 2014:184). We situate the settlement within its transforming surrounding and socio-economic context, including the web of informal settlements that has succeeded to superimpose itself upon what Murray (2011:216) refers to as a landscape of 'anxious urbanism'. Honing in on the conditions of precariousness of Msawawa's households, a profile of particular precariousness emerges, accentuated by the setting of wealthy smallholding and gated development. From this socio-economic portrayal of the settlement, we proceed to explain the governance structures and processes through which the current situation is sought to be addressed. We draw on findings from data mainly collected in March 2013 through an approach involving a quantitative survey of sixty-five households and

qualitative key-informant interviews spanning community and political leadership and officials in the City of Johannesburg (Nenweli, 2016). The quantitative survey drew a sample of 65 households across the settlement through a stratified grid, whereas the qualitative sample was drawn purposively. An engagement with spatial and socio-economic conditions, as well as with governance structures and processes, allows us to point to the importance not only of decisive programmes for in situ upgrading, but also for governance structures that mediate divides and foster meaningful integration.

2.0 MSAWAWA WITHIN ITS CHANGING SOCIO-SPATIAL CONTEXT

Residential development in Johannesburg has long reached across the N1 Northern bypass of Johannesburg, expanding into former farmland long subdivided into smallholdings. Jukskei Park is a relatively small portion of ungated suburban development, established in the apartheid years and now interspersed and surrounded by a patchwork of gated developments. On maps, these are distinguishable by their single entrances and names which include the word 'Estate'. A further ungated though internalised suburb, Bloubosrand, borders onto the industrial area of Kya Sands. Thus a mosaic has emerged of industrial area, apartheid era suburb, post-apartheid gated estate and small holding, bisected by the Klein-Jukskei River and its tributaries. It is in this rapidly changing landscape that three informal settlements emerged within 1.5km of one another. They are Riverbend (Plot 5 Riverbend AH), Msawawa and Kya Sands. According to a City of Johannesburg data-base (CoJ, 2010), the settlements originated in 1985, 1995 and 1998 respectively. However, the community leadership in Msawawa recalls a more recent origin of

Msawawa around 2000 when the settlement began spilling out of the informally subdivided and rented farmhouse (Phalanndwa, personal communication, 24 May 2013).

In the urban literature, Msawawa receives little more than a mention (see Huchzermeyer *et al.*, 2014; Nenweli, 2016) whereas Kya Sands has recently been the site of student research (e.g. Weakley, 2013). However, in most accounts of this region, a wider net is cast to include the informal settlements Zandspruit (some 6km to the south west, established in the wake of the elections of 1994) and Zevenfontein (5km to the north and established in 1992) (see Figure 1). Along with Riverbend the state had long earmarked these informal settlements for relocation to Cosmo City, an embattled plan for low income development (Murray, 2011; Adegun, 2016).

Cosmo City was envisaged as early as 1992 for the relocation of informal settlements in the area, but legal resistance from landowners in its surrounding delayed its implementation by over a decade (Murray, 2011; Haferburg, 2013).

Despite its apartheid era origins, Cosmo City has gained iconic status in the post-apartheid policy imaginary, first as mixed income and inclusionary housing (Haferburg, 2013) and more recently as an exemplary mega-project (Gauteng Province, 2015). With this continues vision of mass formal housing provision, the provincial government has remained 'committed to eradicate informal settlements' (Gauteng Province, 2014:2).

Despite promises of relocation, Zandspruit residents were not granted housing units in Cosmo City (Sailbul, 2010; Dawson, 2014). However, relocation to Cosmo City meant that the light footprint of Riverbend and Zevenfontein informal settlements has been wiped off the peri-urban landscape. A further informal settlement, Skosana, which predated all others in this region, was on the land subsequently developed as Cosmo City, its residents being among the first to receive housing in the new development (Adegun, 2016).

Msawawa is accessed on the gravel extension of Main Road.

Figure 1: Msawawa as part of a fragile peri-urban web of informal settlements on Johannesburg's north western edge (author's own construction on a 2016 Google Map aerial image)

The settlement reaches from the road down a slope and ends at the Klein-Jukskei River. Immediately across the river is the perimeter wall of the exclusive Cedar Creek Estate which stretches up the opposite slope and includes a tributary to the Klein-Jukskei River, landscaped with several ponds (Figure 2). In a stark display of spatial disparity, some 55 stands within Cedar Creek Estate cover the equivalent 15ha of Msawawa on which an estimated 1 500 households resided in 2007 (CoJ, 2010). According to the ward councillor, the residents themselves counted well over 2 000 households by 2009 (Mafokwane, personal communication, 15 May 2013).

At the time of writing mid-2016, various property websites advertised luxury houses in Cedar Creek Estate upward of R3 million, and vacant stands from R700 000. On the Cedar Creek Estate website, the development is promoted through 'splendour of the surrounding natural environment'. The homepage, which displays the slogan 'Step into a new world' includes a view across the valley – Msawawa is blotted out through over-exposure on that side of the photograph (Cedar Creek Estate, undated) (Figure 3).

The property advertising website Property 24 is less discrete, or more confident in sales and property prices not being affected by the adjacent informal settlement. It advertises a 1 010m² vacant stand with photographs showing a full view of the informal settlement (Property24, 2016) (Figure 4).

During an exceptionally dry spell in Johannesburg in November 2015, a fire in Msawawa destroyed 200 shacks. Fourways Review (2015) reported Cedar Creek Estate's sentiments towards the informal settlement, with two reasons put forward for pursuing its removal, one being the unhealthy conditions in the settlement, the other the unease for Cedar Creek Estate residents having to watch a shack fire without being able to assist. In 2013, an online petition titled 'Remove Shebeens from Msawawa' yielded 167 signatures from neighbouring estates and residen-
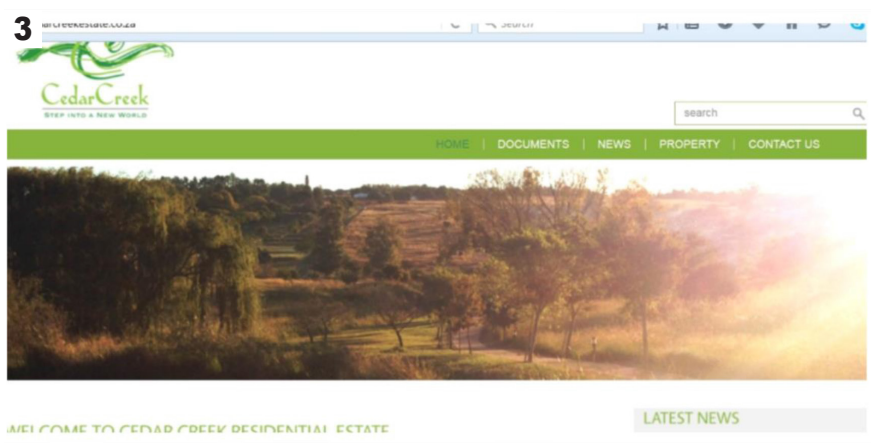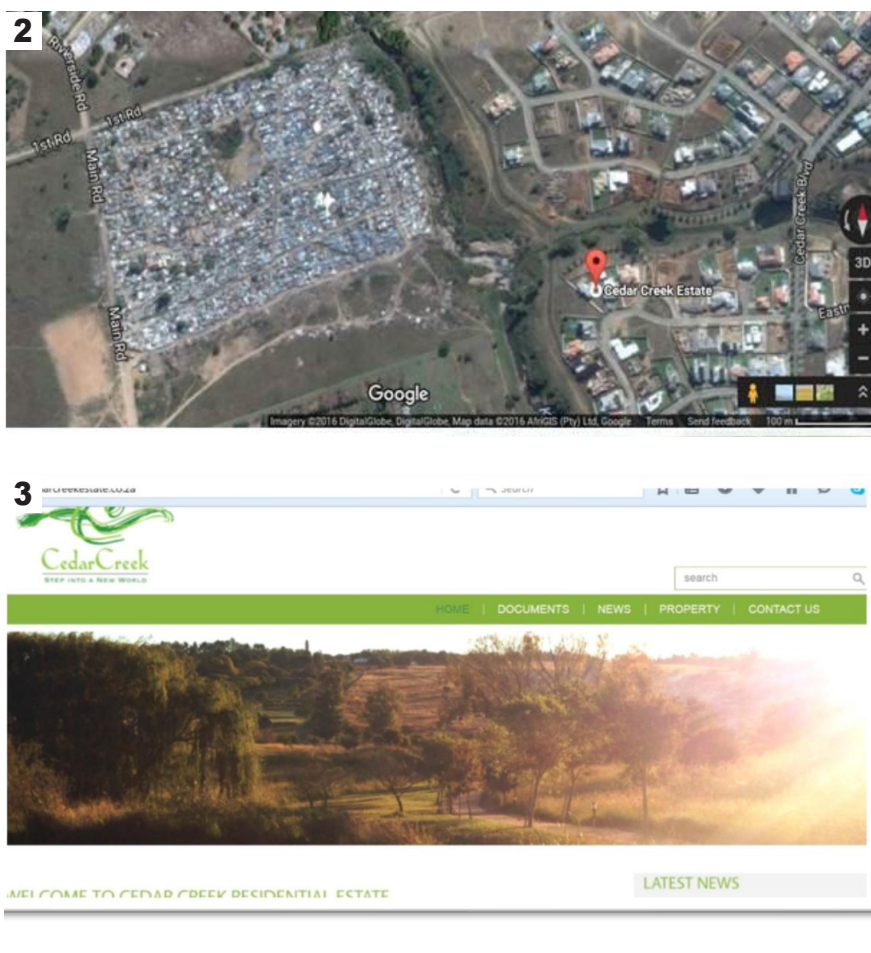

Figure 2: Msawawa and the adjacent Cedar Creek Estate (source: Google Map, 2016); the landscape masterplan for Cedar Creek Estate does not show evidence of the informal settlement to its immediate east (source: Cedar Creek Estate, undated – http://cedarcreekestate.co.za/wp-content/uploads/2014/04/Cedar-Creek-site-map.pdf).

Figure 3: The homepage of Cedar Creek estate uses over-exposure to blot out the view of adjacent Msawawa informal settlement.

Figure 4: Property24 advertising a vacant stand in full view of Msawawa (source: Property24, 2016).

tial areas (Three River Residents, 2013). Those petitioners who have allowed their comments to be publically displayed present middle class entitlements to undisturbed life, most calling for the removal of the entire Msawawa settlement, with complaints that the squalor affects property prices in the area.

The Msawawa settlement, however, predates its middle class suburban neighbours across the Klein-Jukskei River. It emerged from informal renting in an existing farmhouse. Landowner Deon Delport's abandoning of the smallholding might well have related to the suburban development planned around his property. However, Msawawa's leadership mentioned continuous court battles as residents resist Mr Delport's attempts at removing them (Phalanndwa, personal communication, 24 May 2013). The leadership recalls being informed by the City of Johannesburg that the reason it cannot provide basic services such as electricity is that the land is privately owned; the same reason is given as to why Msawawa is earmarked for relocation to a new development that will take place in Lion Park, to the north of Cosmo City, approximately 10km away. In 2013, the leadership

was uncertain when this would take place as various relocation dates previously announced had passed (*ibid*.).

3.0 SOCIO-ECONOMIC AND LIVING CONDITIONS WITHIN MSAWAWA

A small section of Msawawa is located below the 1:50 year flood line, with households residing below this line occasionally affected. Due to the slope, pathways leading through the settlement double up as storm water gullies. Surface water run-off is exacerbated by leaking municipal stand pies and the absence of any provision for grey water drainage. In places this has led to deep erosion which in turn hampers pedestrian circulation through the settlement (see Figure 5).

Socio-economic challenges of poverty, unemployment and lack of facilities such as schools are evident to the settlement leadership (Phalanndwa, personal communication, 24 May 2013). A government clinic is located immediately to the south of Msawawa, operating once a week. The nearest schools are in Randburg and Fourways, and they are accessed mainly through public transport. For fuel, households in Msawawa depend on wood (leading

to the depletion of trees in the vicinity), paraffin, plastic and coal (Mafokwane, personal communication, 25 May 2013). As the settlement committee has taken the decision not to allow the pirating of electricity due to the risk of electrocution in particular for children (Phalanndwa, personal communication, 12 June 2013), the notorious shebeens which middle class neighbours campaign against are powered by generators. According to the City of Johannesburg, Msawawa has seven communal taps, 450 VIP toilets, 20 chemical toilets and waste collection services scheduled once a week (Vermeulen, personal communication, 17 January 2013). However, some of the VIP toilets can no longer be desludged due to densification with shacks barring access by conventional tankers. Given the large population, residents in Msawawa also resort to using self-constructed pit latrines, as well as the open veldt for sanitation (Phalanndwa, interview, 24 May 2013).

Physical structures in the informal settlement mirror the residents' socio-economic situation. In our quantitative survey, 92% of the respondents in Msawawa stated that they own the dwellings in which

Figure 5: Water run-off and erosion on pathways through Msawawa — the mansions of Cedar Creek Estate ahead (Photographs by Marie Huchzermeyer, 10 May 2013)

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they were residing. Interestingly, 52% said that they own another dwelling elsewhere/outside of the settlement. This sense of ownership in the informal settlement, and yet attachment elsewhere, might be explained by the fact that Msawawa is a relatively recent settlement, with a proportion of residents feeling that their life in the urban area is temporary.

The nature of dwelling structures is an important indicator of how vulnerable the households are to extreme weather conditions including wind which fuels fires as in the case mentioned above. Table 1 below indicates roofing material. Whereas corrugated iron or zinc for roofing is common in formal as in informal dwellings, reused zinc in Msawawa is often supplemented with plastic, increasing the flammability of the dwelling. Understandably some households indicated during the survey that they feel that ownership of formal, subsidised low-cost housing could help improve their quality of life.

Various walling materials in Msawawa are flammable and don't withstand extreme weather events (see Table 2). Whereas quite a few households had consolidated their dwellings into brick structures, over half of dwellings are constructed of wood or board. Most of the material was recycled.

The quantitative survey revealed that 54% households in Msawawa have members who are economically active. According to Everatt (2014), the measure of indigence in South Africa is household monthly income of R800 or less. In Msawawa sources of income in the households were formal employment, informal businesses and social grants. Figure 6 shows the income distribution, with a worrying 26% indicating no income, whereas the largest proportion earn between R1 000 and R4 000 per month. 33% of those with income had members with some form of employment, 31% had small and mainly informal businesses, and the remainder relied fully on social grants.

Area		Number of households surveyed
Msawawa	Zinc	41
	Zinc and plastic	16
	Tent material	7
	Tiles	1
	Total	**65**

Table 1: Predominant dwelling roof material in Msawawa

Area		Number of households
Msawawa	Brick	11
	Zinc/Corrugated iron	20
	Plastic	2
	Other: Wood or board	32
	Total	**65**

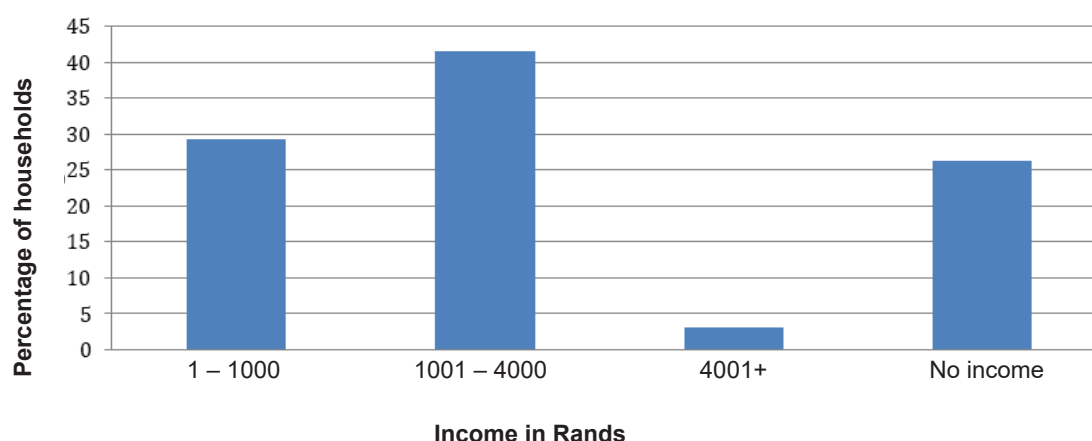*Table 2: Dwelling wall structures in Msawawa*

Figure 6: Household income per month in Msawawa

Both Councillor Mafokwane (personal communication, 25 May 2013) and community leader Phalanndwa (personal communication, 24 May 2013) expressed the view that the majority of people in Msawawa have limited skills and they mainly perform jobs such as domestic and casual work for households in the surrounding affluent estates, and offering labour in the construction sector. The lack of schooling and unequal access to education and skills development play an important part in the activities households can pursue in the economy; this in turn affects the socio-economic status of such households, rendering them socially vulnerable (Cutter & Finch, 2008). According to the GCRO (2012), higher levels of household income in the City of Johannesburg are significantly linked with the post-matric education of household members.

Councillor Mafokwane (personal communication, 25 May 2013) estimated unemployment in Msawawa to be at least at 70%, noting that this is evident in high attendance at public meetings that take place during working hours. The Councillor also explained that when there is a call for people to apply for Expanded Public Works Programme (EPWP)[1] jobs, there are over 1 000 applications from Msawawa (Mafokwane, interview, 25 May 2013). However, as matric is required for these positions, in most instances less than 100 people receive these temporary positions.

4.0 PLATFORMS FOR PARTICIPATION AND EMPOWERMENT? RELATIONS BETWEEN CITY OF JOHANNESBURG AND MSAWAWA'S RESIDENTS

Ward Councillors play an important role in ensuring that households in informal and formal settlements across a ward participate in city planning, budgeting and policy processes (Mohamed, 2006). In Msawawa, we found limited knowledge[2] of the local Ward Councillor, showing a disconnect between the local community and the municipality. This may have contributed to limited improvements in the lives of households in Msawawa. The challenge with this situation is the fact that the local Ward Councillor is the *de facto* link between local households and the City of Johannesburg (although legislation is more nuanced). Community leader Phalanndwa noted the following during the in-depth interviews:

> The relationship is not good. The community is tired of the government because they are not providing them with services. They are tired of the promises. The people want only to be told that next year or this year they are going to move to this place. Tomorrow we are going to erect this or that. They do not want to hear things like we are planning this and we are here to report to you. That is why it has broken down communication with the City (Phalanndwa, personal communication, 24 May 2013).

A GCRO (2012) study on quality of life in Gauteng Province pointed out that approximately 50% of the respondents were unhappy with local government delivery of services in the Province in general. From our household survey in Msawawa, the figure on dissatisfaction relating to access to services was 77%. Mirroring the socio-economic conditions set out above, the challenges indicated by the households included lack of services and infrastructure such as schools, limited basic facilities, low-cost housing, burst water pipes, corruption, unfulfilled promises, limited public participation, lack of communication, unemployment, lack of electricity, increased crime and lack of service delivery. Reflecting the complexity of a settlement of this size, and the difficulty that the municipal relations presents for its leadership, 77% of the households also indicated dissatisfaction with local community leaders' inability to provide assistance in addressing local challenges. The twenty-three percent of households indicating that they received assistance from local leaders referred to the leadership's work in relation to community policing, conflict resolution and dealing with criminals.

Households were asked whether they thought that in the future they would be able to play a positive role in investing in their dwellings and living conditions. 99% responded in the negative, indicating almost complete absence of hope, also reflective of 'waiting' for housing evident in other recent studies on informal settlements in South Africa (Dawson, 2013; Kornienko, forthcoming). As Kornienko (forthcoming, p. 4) points out, waiting for low-cost houses in informal settlements has limited the potential for 'self-fashioning' and consolidation of their living spaces. Respondents did not indicate awareness of proposed developments to improve

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1   This is a government-funded programme that provides short-term employment opportunities and training to local communities, targeting mainly youth, persons with disability and women.

2   Knowledge here is referring to knowing the name of the Councillor and the role that he/she plays in the local community. It is also about his role in relation to the local community and the City of Johannesburg.

their lives, perhaps due to the long horizon of this promise – the Ward Councillor for Msawawa referred to the relocation of the households to Lion Park by the latest in 2022 (Councillor Mafokwane, personal communication, 25 May 2013).

An un-appealed High Court judgment related to the Slovo Park informal settlement in Johannesburg in April 2016 (Strauss, 2160, however, makes an end to long term plans for the relocation of informal settlements, finding it unlawful that the City of Johannesburg does not apply for funding from the provincial government under the Informal Settlement Upgrading Programme (UISP). This programme seeks to unlock the self-provisioning by residents and consolidation of their lives where they already live. While strengthened by provisions in the *Spatial Planning and Land Use Management Act No. 16 of 2013*, its implementation in situations such as Msawawa will, however, have to counter both community expectations of a delivered house, as well as intense pressure from wealthy residents whose lifestyle aspirations are reflected in collective mobilisation against the proximity of poorer communities.

Given the weak governance context presented above, and general sense of despair, we were surprised that our survey found relatively high awareness of the municipal Integrated Development Planning (IDP) process among residents of Msawawa. The IDP guides all planning, investment, development, management and implementation at a municipal level in 5-year consultative cycles (Mohamed, 2016). The Ward Councillor made the interesting observation that in areas such as Msawawa the presence of non-South Africans and the different languages limits engagement between the City and the local communities in the IDP process (Mafokwane, personal communica-

tion, 25 May 2013). Yet he pointed to inclusionary potentials of the IDP process that went beyond national citizenship:

Informal settlements people … first of all see themselves as outsiders … They do not see themselves as part. They are always of this view that 'let them decide, they [City of Johannesburg] will tell us anyway, we do not have a say'. As much as we tell them that as a resident, you have got a bigger say than you think. In fact, to me being an IDP participant and a voter participant is the same. If not, being an IDP participant is in fact more valued than being a voter participant because a Zimbabwean does not have to vote to put provision of services.

However, households' trust in processes such as the IDP are also determined by their experience of the municipality in their more immediate struggles for a daily survival. The leadership gave the following comment when asked about the City's support for economic activities in the informal settlement:

The City is doing nothing to help the people here. What they are doing, it is like they just come and raid if you are selling beer illegally then they collect everything and take [it] away. But for helping the people here, more especially those ones with small businesses, not at all (Phalanndwa, personal communication, 24 May 2013)

Contrary to the Msawawa leadership, the Ward Councillor (Mafokwane, personal communication, 25 May 2013) commented that the municipality had organised discussion forums with local business people to try and create employment opportunities. He went further to state that 'they approached me as a Councillor and said we [foreign nationals in Msawawa] have a club

comprising of painters, electricians, carpenters and other trades' (Councillor Mafokwane, interview, 25 May 2013). In addition, he had developed a skills database in Msawawa that is shared with local business to encourage employment. However, Msawawa's residents are at times required to offer cheap labour that does not provide them with the necessary economic resources at household level. Councillor Mafokwane (personal communication, 25 May 2013) seemed aware of this dilemma, stating that residents of Msawawa were exploited by people who give them menial jobs in the surrounding upmarket suburbs.

Municipal LED programmes, despite good intentions, have not managed to provide opportunities to households in Msawawa. The relevance of and need for effective LED programmes was pointed out by a manager for Economic Policy and Planning in the City of Johannesburg:

LED is very critical especially in informal settlements. This is where there is room to be innovative, explore new technologies and to get people to be involved. These settlements have labour, poverty and people are eager to be involved to explore because they understand their situations better. They are forced to become innovative in order to survive. Thus, informal settlements are where you can introduce new technologies and replace products easily. This way you create a demand and stimulate growth of new businesses and sectors. (Mrs. Manzini, personal communication, 28 March 2014)

However, she confirmed that LED mainly benefits residents of formal areas and it has also not managed to attract any notable business activities into informal settlements such as Msawawa. Therefore, LED has been limited by its failure to effectively engage households in

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meaningful economic activities and it cannot be considered to have provided an effective basis for improving people's quality of life.

5.0 CONCLUSIONS

In this paper we have attempted to paint a picture of poverty and informality in strained co-existence with wealth through the case of Msawawa informal settlement within its spatial setting of a rapidly changing mosaic that includes expanding gated estates. The tendency among middle class residents and property owners is to take exclusive privilege for granted. This is coupled with an economic exploitation through precarious labour, although initiatives exist to address the situation. The physical conditions in Msawawa are a display of socio-economic deprivation and state neglect, coupled with uncertain promises of housing elsewhere. At the same time, expanding communities of the middle class add pressure for relocation of the informal settlement. Prolonged uncertainty over residence in the area weakens informal communities' ability to engage effectively and with any optimism of the situation improving in the informal settlement. This weakens potentially inclusive statutory participatory planning and budgeting processes IDP. The absence of informal settlement communities' in these processes gives way to the realisation of the vision of developers and middle class landowners. With the legally underpinned requirement that City of Johannesburg upgrades its informal settlements in situ through the Upgrading of Informal Settlements Porgramme, there is an urgent need for the development of governance structures whose premise is not the ultimate relocation of informal settlements from areas in which the property market is expanding. Instead, governance structures and processes are required that secure locational permanence and ensure improve-

ment and integration for informal settlements such as Msawawa in the a rapidly changing peri-urban development context.

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Natural disaster occurrences and poverty linkages in rural communities in Vhembe district municipality with a focus on service and housing conditions

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Abstract

The purpose of this study is to examine the service and housing conditions, as well as the socio-economic status of rural communities of the natural disaster prone Vhembe District Municipality. The literature review highlighted the possible causes of natural disasters (climate change and deforestation), compliance to building standard and the level of socio-economic activities which exacerbate the level of poverty when natural disaster strikes in rural communities. The study adopted a case study approach utilising questionnaires among sampled respondents of Vhembe District Municipality. The main findings include: lack of adequate supply of basic services to rural communities by municipalities such as water, energy source and proper sanitation; high rate of unsustainable housing structures increase the likely vulnerability to natural disaster events. Unsurveyed residential sites which do not adhere to land use planning, as well as housing structures being built in areas not suitable for residential purposes, pose a challenge of exposure to natural disasters. The study emphasizes the need to adhere to proper planning activities and familiarize rural communities with building standards, as well as the need for the district to find an equitable resources allocation which will help in terms of alleviating poverty and mitigating natural disasters in the area.

Key words: Housing conditions, natural disaster risk management, rural areas, service delivery, sustainability.

1.0 INTRODUCTION

In recent years, there has been an increase in the frequency of natural disasters, coupled with a number of emerging threats and trends, leaving people vulnerable to the effects of disasters and inflicting damage, loss and displacing of vulnerable people worldwide (Saunders, 2011). In South Africa, the increasing level of disaster risk and great exposure to a wide range of weather hazards including drought, cyclones and severe storms tend to trigger widespread hardship on poor rural communities (South Africa, 2005). Siwele (2011) reports that disasters in South Africa have been dominated by localized incidents such as veld fires, seasonal flooding and drought. In addition to

the natural and man-made threats and despite on-going progress to extend essential services to poor rural communities, numbers of people in rural communities are forced to live in unbearable conditions of chronic disaster vulnerability wherein they are faced with recurrent natural disasters (South Africa, 2005).

The study area is located 22º 56'S and 30º 28'E, occupying approximately 25 597.42km² of area which forms part of the Northern side of Limpopo Province with approximately 1 294 722 total population (Statistics South Africa, 2011). The area usually experiences a variety of natural disasters such as floods, drought and fire, which often expose the area to high risks, making

the recovery process difficult for the community members due to lack of resources and the high poverty rate. Most of the rural population are not employed and are unskilled laborer. Vhembe District Municipality is one of the districts in Limpopo Province where natural disasters, particularly floods, often cause enormous damage to infrastructure and property in the area. According to Dau (2010), the area experienced devastating floods in the year 2000 which destroyed properties and road infrastructure, and this has been an ongoing activity which tends to disrupt the functionality of the Municipality, as well as the community at large. Furthermore, there were some occurrences of floods during January 2013 (City Press,

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2013). Recently, the province was declared a drought stricken zone with the inclusion of five other Provinces, namely KwaZulu Natal, Northern Cape, Mpumalanga, North West and Western Cape (South Africa, 2015a).The effect of drought in Vhembe District has severely affected agricultural productivity economy, while exposing livestock to very limited access to drinking water and resulting in an increased number of livestock mortality in the area. The effect of drastic change in rainfall patterns causes the climate change to increase the frequency of climate related disaster shocks such as floods, droughts and extreme temperatures (South Africa, 2015a). Despite government efforts to invest in disaster mitigations and recovery measures, there is limited understanding and knowledge of dealing with the after effects of disaster in the area. The purpose of this study is to examine the service and housing conditions, as well as the socio-economic status of rural communities of the natural disaster prone Vhembe District Municipality.

2.0 LIMITATIONS OF THE STUDY

The empirical study is limited to Vhembe district municipality due to the fact that the frequency of natural disasters has been increasing over the years, resulting in loss of life, damage to property and destruction of the environment (South Africa, 2015a). In terms of the household survey, only 50 respondents participated which might limit the findings.

3.0 LITERATURE REVIEW

3.1 Natural disaster framework and socio economic livelihoods of people

The occurrences of natural disasters have been increasing over the past years resulting in high loss of life, environmental destruction and damage to property infrastructure such as roads and houses. The Disaster Management Act 2002 stipulates that disaster occurrenc-es are a serious disruption of the functioning of a society, causing or threatening to cause widespread human, material, or environmental losses that exceed the ability of the affected community to cope using only its own resources (South Africa, 2002).

Drankenberg *et al.* (*2*014) suggest that different population segments can be exposed to greater relative risks such as floods, drought, earthquakes and cyclones because of their socio-economic conditions of vulnerability. Quite often people who are poor are more vulnerable to disasters due to lack of resources which will enable them to prepare for and be able to respond to such threats and shocks as natural hazards. Disasters are now occurring at a scale and frequency that is causing unprecedented impacts worldwide, and this is due to increasing population leading to more people being forced to live in high-risk areas.

3.2 Poverty gap and vulnerability

Madzivhandila (2010) views vulnerability as an event that captures the processes of change, the multifaceted nature of changing socio-economic well-being and the circumstances and concerns of the poor. Skoufias (2012) defines poverty as a low level of income, whereby income is believed to be more accurately measured in the data than consumption is. The South African economy exhibits an uneven spatial pattern of economic activities, socio-economic development and extreme degrees of inequality in the distribution of income, assets and opportunities (Harmse, 2010). According to Museskene (2013), the South African economy comprises a high unemployment rate within its working-age population, with a large proportion of the population lacking skills to enable them to participate actively in the economy.

Poverty gaps have existed for decades, both in developing and developed countries, despite interventions to eliminate them. South Africa has the second highest inequality coefficient in the world with about 10% of the poorest of the population receiving 1.4% of the total income (South Africa, 2013). There are estimates that over twenty two million people in South Africa live in poverty (Development Bank of South Africa, 2005a). Although exposure to risk vulnerability could affect everyone, people will become more vulnerable if exposed to such risks compared to affluent people because when shocks occur, severity, resilience and coping mechanisms depend on the capabilities, assets and resources that households and individuals possess (Khandlhela, 2006). The poor suffer disproportionately from hazards relative to the rich due to their inability to cope with disaster occurrences.

According to Dutta (2013), poverty is mostly measured in terms of income or consumption expenditure. Hofmeyer (2013) asserts that poverty, environmental degradation and structural unemployment go together. People living in rural areas are particularly vulnerable to shocks due to poor environment such as poor soils, poor infrastructure and lower access to markets due to lack of capacity to diversify their income sources (Echevi, 2014). Dutta and Kumar (2014) add that poverty and vulnerability are closely related concepts in that the poor are typically most exposed to diverse risks and have the fewest instruments to deal with these risks. Summing up the discussion, vulnerability happens to be a future expected poverty measure (Dutta & Kumar, 2014).

3.3 Land use and build environment standards

Historical and existing patterns of land use and allocation in most rural areas tend to exhibit planning

pattern challenges due to improper planning and failure to adhere to planning rules and regulations. It must be noted that every country has different sets of rules and norms which guide the utilisation of space by individuals. Land use planning (LUP) is an iterative process based on the dialogue amongst all stakeholders aiming at negotiation and decision making for a sustainable form of land use utilization, as well as initiating and monitoring its implementation (Schwedes & Werner, 2010).

The process of land use involves identification of spatial development potentials and issues of importance, land use potentials, conflicts, environmental problems and structural deficits and address them in an integrative way, by incorporating all national, regional, local and sectorial plans which will produce the overarching harmonized regional Land Use plan as an output with realistic action plans to improve land use and resource management in the region (Schwedes & Werner, 2010). In a highly complex society, measures of control and restraints affecting the utilization of land are regulated through various legislations and policies. The South African Constitution approves a binding framework in terms of planning, coordination and implementation of development everywhere including rural development as one priority area (South Africa, 2006). The poor utilization of planning tools and non-conforming property zoning results in improper planning which exposes people to risks. Land use and territorial planning are key factors in risk reduction strategies and the environment offers resources for human development at the same time, as it represents exposure to intrinsic and fluctuating hazardous conditions (Cardona *et al*. 2012). It is also worth noting that rules and regulations applicable to development are meant to strictly

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areas such as flood prone areas.

Infrastructure development is an important part of every country's economic growth which seeks to improve the conditions of life by addressing unemployment, inequality and poverty gap. The country's electricity, water, transport and telecommunications networks are being extended, education and health capacity is being expanded, and human settlements are being built and upgraded to strengthen the fabric of communities (South Africa, 2012). The creation and functioning of infrastructure needed to ensure a country's competitiveness require the determination of priorities and the construction of key objects for subsequent integration into highly productive systems (Oreshin, 2014).

According to Kedaitiene (2013), the developed physical infrastructure, such as roads, ports, energy supply grids, broadband internet, hospitals and schools are of outmost importance for economic development and economic growth. Oreshin (2014) adds that well-developed infrastructure is a key element in the stable growth of international trade and in the expansion of its potential, hence countries that put more effort in the development of infrastructure benefit more.

4.0 METHODOLOGY

A non-probability survey was conducted in four Local Municipalities of Vhembe District. The survey consisted of 60 Households (15 households in each Local Municipality). Questionnaires were distributed to the local municipality where 15 randomly selected participants were expected to answer them. Semi-structured interviews were also conducted as a way of complimenting the data collected through the survey. A variety of secondary data sources such as photographs, maps and newspaper articles were also used. The primary data was collected using the Global Position-

ing system (GPS) through mapping and capturing of each household affected by natural disasters. The GPS which was used to collect data had an accuracy level of 0.5m.

Data collected was exported from the GPS and converted into a Geographic information system (GIS) shape files for analysis purposes. The GIS system enables the researcher to pinpoint the exact location of the household using the latitude and longitude coordinate system.

5.0 RESULTS AND DISCUSSION

Figure 1 displays the employment status which is very low in the area. Evidently high unemployment will contribute to poverty levels in the area. As Museskene (2013) indicates, the South African economy consists of a high unemployment rate within its working-age population, with a large proportion of the population lacking skills to enable them to participate actively in the economy. Thus, unemployment rate attributed to high level of poverty in the area.

Figure 2 represents the employment status in relation to the study area. This item helps to understand the security and source of income for each household and displays the means of survival of each household. Children's grant and pensioner's grant seems to be the major survival factor, followed by other salary earnings. People who are represented on other columns are those who are not working, but rely mostly on temporary jobs for their survival. Based on the research findings, the majority of the people seem to be relying on the children grant and pensioner's grant, which is evident that poverty in the area is high, and the recovery process during disaster occurrences could pose a huge challenge.

Figure 3 represents the occupancy ratio in the area which plays
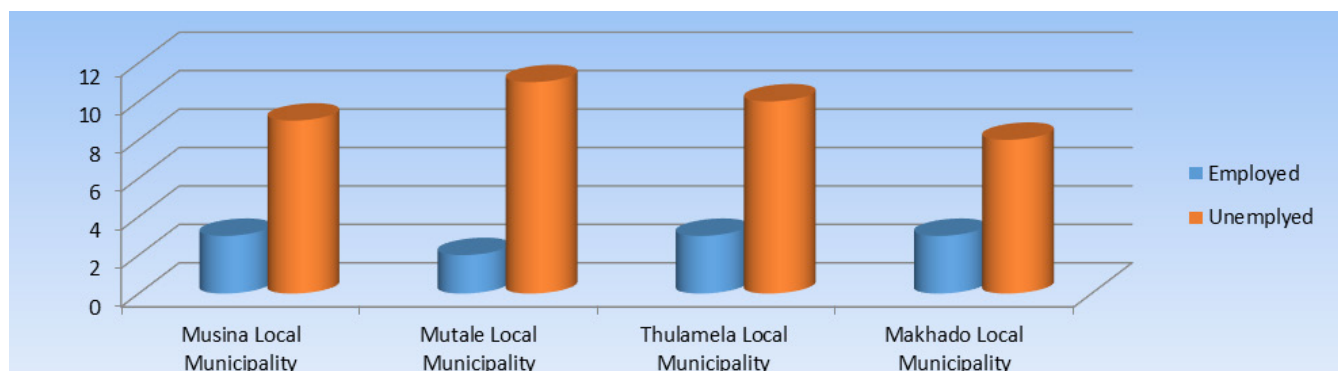
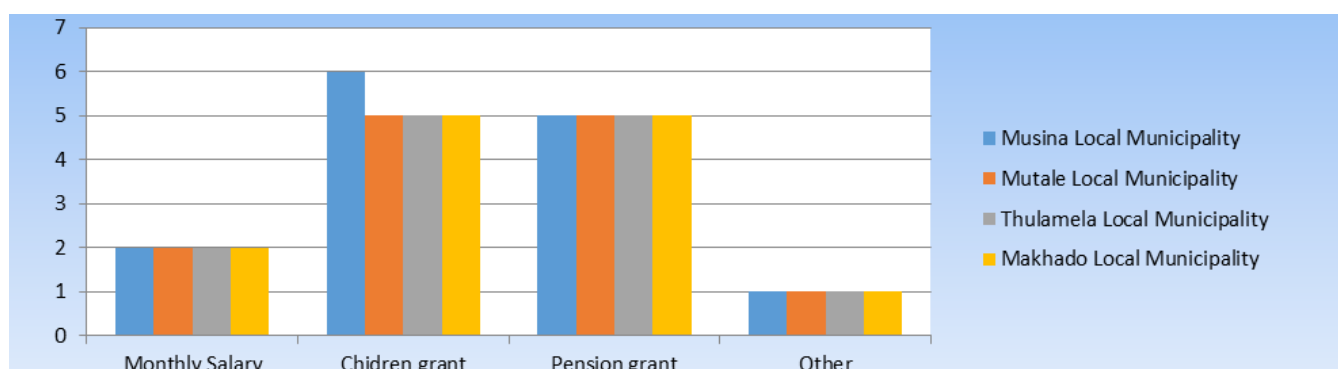*Figure 1: Employment Status | Source: Researcher, (2015)*

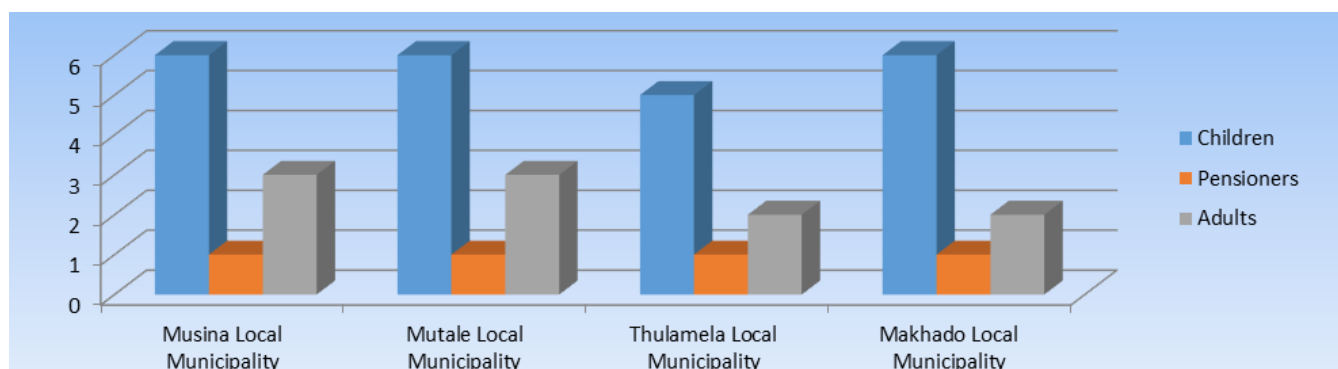*Figure 2: Means of survival | Source: Researcher, (2015)*
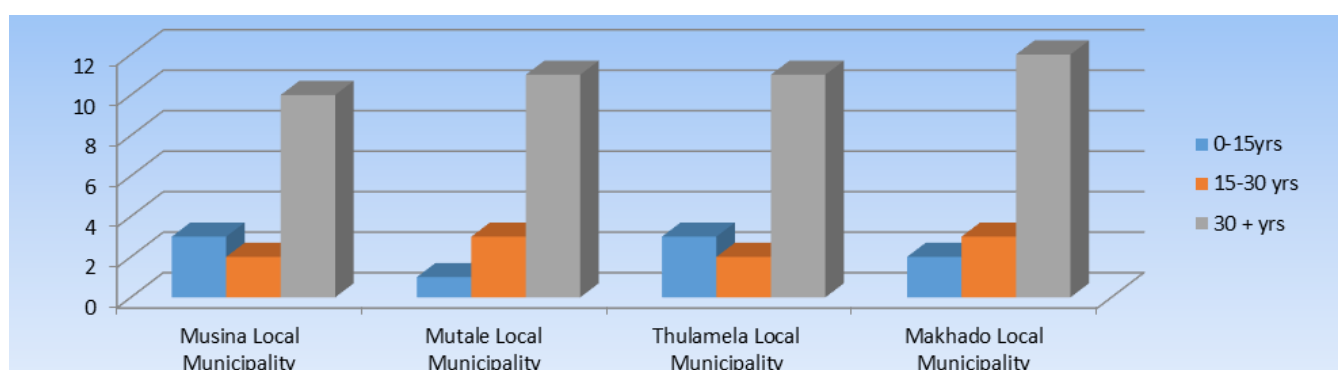

Figure 3 No. of occupants per household

Figure 4: No. of Years occupying same household

a role in determining the number of individuals occupying a single household for more than four days in a week. Based on Figure 3, the number of children seem to be very high in all the Local municipalities, meaning there is high fertility rate. This is due to the fact that most rural people are using this as a tool to fight poverty, as they are aware that they will benefit from child grants. The high occupancy rate has been observed during the study where a single household has been occupied by a maximum number of 6 children, 1 pensioner and 4 adults.

In Figure 4, the occupancy ratio is presented per household, with the highest rate people older than 30 years staying in the same household. Usually people who stay in rural areas do not encourage relocation quite often; more movements can be noticed in the urban areas due to factors such as change of job and rental issues. Therefore, the highest occupancy rate which

has been observed during the study is 30 years and above, and this is an indication of how valid the study is since people who have been surveyed stayed within the area for a very long time.

Figure 5 represents the educational level of the respondents. According to the results, more respondents had the opportunity to attend the lower primary school (grade 0 – 7) in all Local Municipalities and the dropouts are being noticed in grade 8 – 10, whereas very few people managed to obtain their tertiary education. In this study area, it seems most respondents are uneducated, and this also reflects the social attribute of poverty in the area.

Figure 6 represents the availability of sanitary facilities in the area. Looking at the graph below, pit toilets are the only sanitation used, followed by others. The provision of proper sanitation facilities is still a challenge for the whole District

municipality. People who fall under the category of others mean they do not have any toilet facility to use at all. Most of them still utilize the bush or share the next door infrastructure. Generally, environmental hygiene plays an essential role in the prevention of many diseases which may arise due to poor sanitation facilities. Lack of proper sanitation facilities also impacts on the natural environment and the preservation of important natural assets such as water resources. The usage of pit latrines compromises the hygiene of the rural community and subjects them to more health risks. Therefore, the level of poverty is also being demonstrated through the lack of sanitation services in the area. Thus proper toilet facility in a household represents the affordability of such household within the entire community. Hence proper sanitation is one of the key elements in improving environmental sanitation.
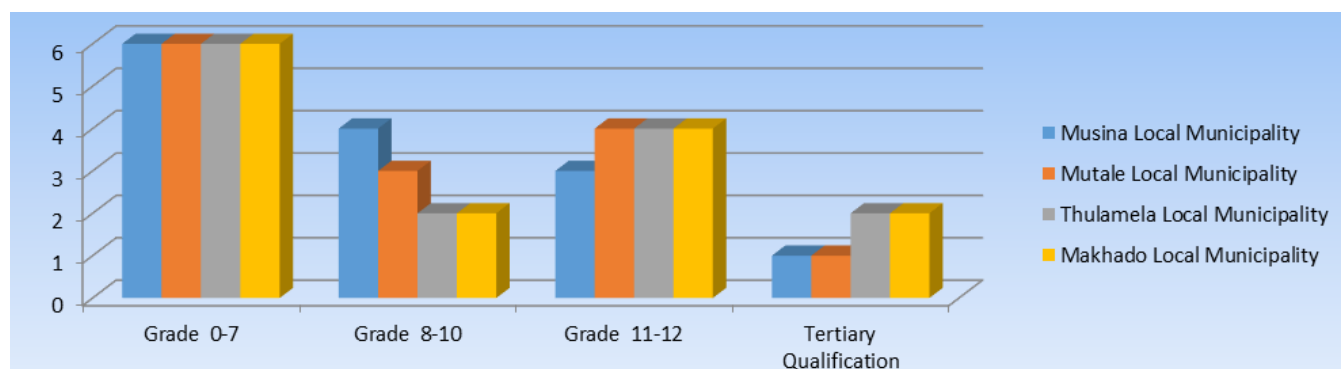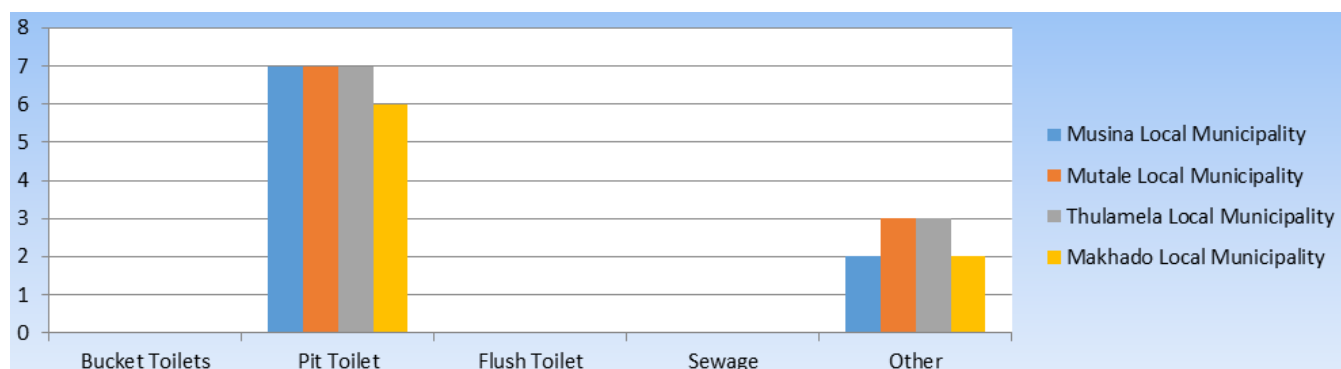

Figure 5: Educational level

Figure 6: Sanitation services

Figures 7 and 8 represent the distribution of water in the area. Shortage of water seems to be a challenging factor for the Municipalities. River water is the leading water supply in the area followed by borehole water and water tankers provided by the municipality to compliment water shortage in the area. Very few households have access to borehole water services, and some community embark on buying water from water vendors which is a very taxing exercise for the rural community. The study also found that the utilization of a borehole indicates the affordability of the individual household to own a borehole. Due to the high level of poverty in the area, only few people who are working and are able to afford it have the opportunity to own a borehole. Rain water is scarce in the area since the area is characterized by low rain fall.

In the literature, Khandlhela and May (2006) also reported that areas in Limpopo showed that the standpipes erected more than 3 years earlier were not functioning and alternative water sources were unreliable. Looking at the study area, there is still a huge backlog in terms of infrastructure provision water services in the area. Although it is a right to have basic services such as water, it is a challenge in the area to secure those rights. Similarly, Vhembe Integrated Development Planning (IDP) reported a huge water backlog in the area which hinders proper supply of services to the communities (South Africa, 2015b). The District Municipality has opted to supply water to its residents through water tankers.

Figure 9 represents the availability of source of energy in the area. There is a high availability of electricity in all local Municipalities followed by the utilization of wood and candles. Based on the findings, people mostly use wood for cooking. This is because they are

unable to pay for electricity usage even though they have electrified households.

Figure 10 represents the findings on the type of dwellings in the area. In all four Local Municipalities, the type of housing structures seem to be characterized by a high volume of traditional structures which are very prone to natural disaster incidents such as floods and fire. There is also high visibility of the Reconstruction and Development Programme (RDP) Houses in both Local Municipalities, which complement the traditional dwellings.

The traditional structures are built using a mixture of mud and some cow dung and have thatched roofs. In support of Khandlhela and May (2006), rural population living in a marginalized area resides in traditional dwellings with a thatched roof and walls constructed from sun-baked bricks which cannot stand extreme weather conditions such as heavy rains, storms and floods. Such houses are prone to damage from floods and 81% of the surveyed households indicated that they had lost huts during the flooding incidents.

It was found that the study area comprises of building structures which are not well designed and lack proper foundations. Hence, the poor design subject most of the traditional structure to the negative effects of natural disaster such as floods. In most cases, some households were constructed without proper land use planning advice and approved building codes and are situated in a flood line plane. Thus, it is important to analyze the area before construction in order to avoid building in a hazardous area.

From the data analysis, it is suggested that the community within the study area is poor based on the housing structures they live in, as well as the type of building materials they use to erect their houses.

Figure 11 demonstrates the type of natural disaster which the study area is mostly exposed to. The study area has experienced different types of natural disasters such as floods, fires, droughts and severe storms. Flood incidents seem to be high in all local Municipalities followed by fire incidents and drought incidents due to factors such as deforestation and climate change. These findings support the literature as claimed by Lukamba (2010) that the occurrences of natural disasters in African countries undermine the economic survival of poor communities, exposing many populations throughout the continent to suffering under the impact of such hazards, which tend to have killed thousands and caused injuries to many others.

Based on the findings, factors such as deforestation, over grazing and poor soil structures and poor planning are the biggest contributors to flooding. According to the study, the majority of people reported that they have been exposed to floods in the area, which have left them stranded without shelter and food as indicated in Figure 11. In Vhembe District, the flood incidents attributed to climate change, poor planning and failure to follow proper building procedures.

Although natural disasters cannot be prevented, measures to mitigate the occurrences can be of vital importance. Based on the findings, it is evident that the study area is prone to a variety of natural disasters, however the most prevalent threat in the area are floods.

6.0 CONCLUSION AND RECOMMENDATIONS

This study outlined the frequently occurring shock in Vhembe District after the occurrences of natural disasters such as floods, drought and extreme weather. The study also demonstrated that natural disaster occurrences and poverty have an adverse impact on the socio-eco-
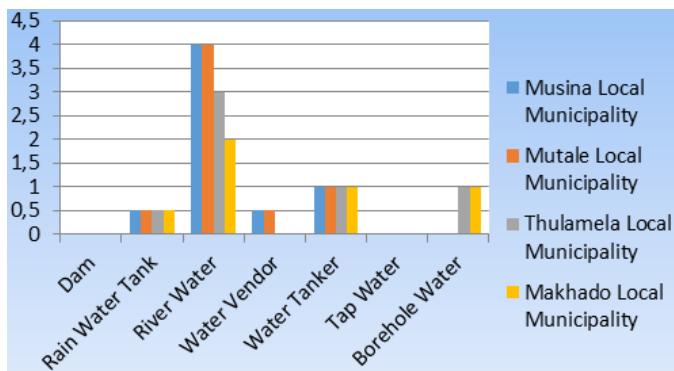
Figure 7 Water Services
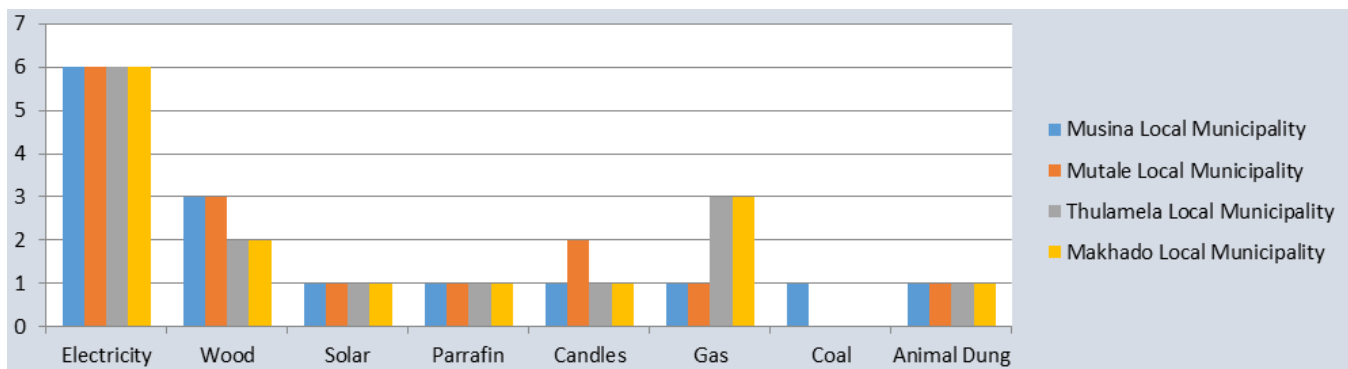

Figure 8: Municipal water Tanker
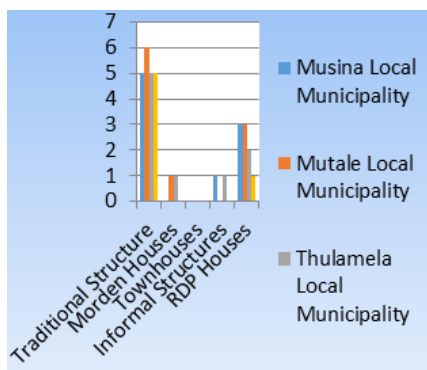

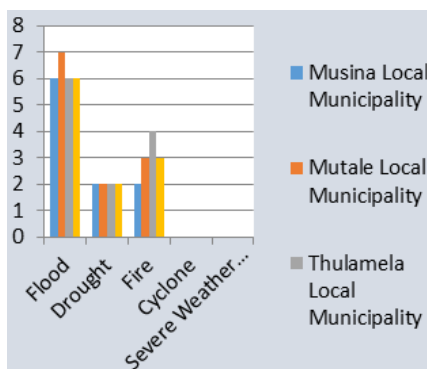**Figure 9: Source of Energy**

Figure10: Type of Dwelling

Figure 11: Types of Natural Disasters (Households affected by floods)

nomic livelihood of people in Vhembe District, putting more risk on the food security and recovery system. It is evident that based on the surveyed sampled data that households which have been affected by natural disasters are those which are of poor quality and whose owners are not able to recover quickly enough after a natural disaster has struck. Provision of basic services is a great challenge as most of the people are unemployed and could not afford to secure a decent house, proper sanitation, proper health facilities, as well as having the opportunity to utilised regulated source of energy such as electricity. The findings imply a linkage between natural disaster occurrences and poverty in rural communities. Thus, there is a need to familiarize the community with proper building standards, proper residential allocation and to allocate resources equally as a way of alleviating poverty and mitigating natural disasters in rural communities.

In order to mitigate natural disaster occurrences in the areas, the following recommendations are given:

- Better infrastructure and services should be provided equally throughout the local Municipalities. This will discourage migration from one local Municipality to a better municipality looking for better jobs and life style creating overcrowding in some municipalities.

- Suitable allocation of land should adhere to the spatial planning tools and spatial development frame work of the municipality to avoid utilizing areas not suitable for residential purposes. Communities living in hazard-prone areas should be made aware of the hazard within their jurisdiction, and if possible arrangements for their relocation should be put in place.

- Provision of better social ameni-

ties and services to address the inequality problem in the area should be dealt with urgently. Engineering and construction measures should be prioritized, creating structures which are disaster resilience through the implementation and adherence to design standard and building codes.

- The District Municipality must provide natural disaster awareness to the communities so as to prepare them during the occurrences of disaster events.

- Local authorities and planners should adhere to and enforce proper planning to minimize the occurrence of natural disasters.

- Government should come up with a new strategy of dealing with poverty, as offering people government grant is not a sustainable way of improving people's conditions.

For the effective implementation of the above recommendations, practical implications require all role players in the area such as District municipality, local authorities, as well as the community to work together. Hence, there is need to develop better and integrated measures that will deal with poverty levels in the area and to mitigate the effects of natural disaster occurrences thereof. The study was limited to a small sample size. A study involving a wider sample is recommended.

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An investigation exploring alternative renewable energy sources in South African rural areas

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Abstract

This study investigates the feasibility of adopting more sustainable renewable energy sources in rural areas in order to address the lack of access to electricity and to enhance the integrated sustainable human settlements approach in rural areas. After a literature review, an empirical study was undertaken using questionnaires and interviews among respondents of Oqungweni, a village outside Ladysmith town and from Indaka Rural Local Municipality, as well as Ladysmith Eskom branch respectively. The key findings include that there is a low level of renewable energy knowledge and perceptions are that renewable energy is less reliable compared to the traditional fossil fuel power plants used to generate electricity. Further, the rural local municipality does not have the financial and technical capacity to provide electricity either from fossil fuel or renewable energy sources, and incentives such as rural renewable energy policy frameworks and financial support are required. The study suggests that fossil fuel power plants in rural areas pose many challenges which involve financial and technical aspects and despite solar energy technologies still being costly, they hold great potential to be used as alternatives. However, income and lack of renewable energy awareness amongst the rural residents and unavailability of legal frameworks to guide the use of renewable energy in rural areas call for the establishment of legal, financial and education incentives to enhance the feasibility of renewable energy technologies in rural areas.

Keywords: Green energy, incentives, renewable energy, rural areas, sustainable.

1.0 INTRODUCTION

The use of energy from fossil fuel is becoming a major threat and less beneficial to humans because of its carbon dioxide emissions that cause environmental problems (Bazmi & Zahedi, 2011). For this reason, the use of renewable energy sources such as solar, wind and nuclear energy have become a trend because they do not deplete the earth's natural resources, are environmentally benign and can be managed and used without degrading the environment (Renewable Energy Association, 2009).

Whilst millions of South African households have received electricity from the grid since 1994, there are still many rural areas that experience challenges in relation to both electricity deprivation and provision of electricity (Chellan, s.a.:

online). These challenges stem from the high cost of distributing electricity because rural settlements are scattered (Perret *et al.*, 2005), coupled with the failure to make upgrades on electricity transmitters as rural communities increase in size (Sebitosi, 2008). Further, even where there is access, electricity is not usually affordable. Odeku, Meyer, Mireku and Letsoala, (2011) state that there have been reports of persistent default or non-payment of electricity bills and sometimes, people have improvised and connected to the grid illegally. Despite the substantial household electrification programmes with one of the lowest electricity prices in the world to the consumers, over half of South Africa's rural households still use fuel-wood energy because they cannot afford the monthly costs and appliances that use electricity (Shackelton *et al*, 2004).

The purpose of this study is to investigate the feasibility of adopting more sustainable renewable energy sources in rural areas in order to address the lack of access to electricity and to enhance the integrated sustainable human settlements approach in rural areas.

2.0 RESEARCH SIGNIFICANCE

South Africa is expected to experience electricity shortfalls in the near future, hence the need to consider renewable energy as alternative to energy efficiency (Mail & Guardian: online). The majority of rural areas have no access to electricity and rural local governments, on the other hand, are struggling to provide electricity in rural areas. Further, there has been growing recognition of the need for integrated sustainable human settlements in South Africa. The integrated sustainable human

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settlements approach advocates for human settlement planning that is coupled with a coordinated integrated development planning approach such as the consideration of bulk infrastructure (electricity, sewage etc.) (South Africa. Western Cape Department of Human Settlements, 2010:40).

Therefore, the study views the use of the sources of renewable energy technologies as an important initiative, not only in urban areas, but also in rural areas because rural areas, just like urban areas, are vulnerable to climate change. The study also perceives the use of renewable energy technologies in rural areas as a tool for government to alternatively provide electricity to rural areas to the benefit of the communities and thereby enhancing these areas into integrated sustainable human settlements. The study is beneficial and will raise awareness and inform the rural communities, local governments and other stakeholders in renewable energy.

3.0 LITERATURE REVIEW
3.1 Energy poverty and usage in rural South Africa
Odeku, Meyer, Mireku and Letsoala, (2011) indicate that there have been reports of persistent default or non-payment of electricity bills and sometimes people have improvised and illegally connected themselves to the grid. A study by Aitken (2007) on rural household energy use across KwaZulu Natal province, North West province and Eastern Cape province revealed that the most commonly used energy sources were wood, cow dung, crop residues, paraffin and liquid petroleum gas for cooking and heating whilst candles and kerosene were used for lighting. The fact that traditional fuels (such as wood, crop residues and cow dung) are not used to produce a range of modern energy services such as electricity limits the ability of rural communities to

improve other aspects of their lives, as they spend substantial time and effort collecting traditional resources of fuel which sometimes are sourced from further afield (United Nations, 2010). Furthermore, energy poverty has gender impacts because it is women who remain a huge part of the rural poor and spend large amounts of labour and time making important decisions on household energy (Lebelo, 2009).

3.2 Potential sources of renewable energy technologies in rural areas
Solar Photovoltaic Electricity generation-photovoltaic (PV) is defined as the conversion of light directly into electricity through semi-conductor materials (Prasad, 2011: 206). The International Energy Agency estimated a reduction in solar technology costs in the order of 30 to 50 percent per decade for each of the next two decades as a result of learning and market growth (International Energy Agency, 2003). To contrast, the World Bank (2004) claims that solar PV is unlikely to play a role in generating grid-connected power because of its costs, regardless of its estimated reduction costs. However, according to Banks and Schaffler (2006:18), there are several reasons why solar PV is expected to play a highly significant role and the ease of use.

Solar Thermal Electric—solar thermal can be used directly for heating purposes (Holbert, 2011:225). According to Solar Palaces (2005) Concentrator Solar Power (CSP), a form of solar thermal technology, has the lowest costs for large-scale power generation. Similarly, Holbert (2011) points out that a key advantage of solar thermal compared to solar photovoltaic is the capability of integrating thermal energy within a CSP plant. Additionally, not only can such a thermal energy storage system allow the plant to continue generating electricity during brief periods of sunlight loss, but also

the electricity production can be continued after sunset and into the evening, which generally corresponds to the peak utility period.

Wind Farms — a wind farm is a site with a group of wind turbines, which are machines that convert kinetic energy from the wind to electrical power (Yao, Bansal, Dong, Saket & Shakya, 2011). According to South Africa, Department of Energy (2013), the potential of wind power in South Africa is generally good along the coastal areas, moderate on inland areas of KwaZulu Natal and the Eastern Cape and low for the remainder of the country. Within the context of rural electrification, wind turbines used to construct a wind farm can be used for their diversity of size and for the fact that they have been the most proved form of renewable energy. For Coppez (2011), wind turbines of different types can range from generating power of 1kW to 7kW and can be suited to whatever load size is needed to be supplied. Furthermore, Hermann, Helm, Grim, Grassi, Lutter, Grassi, Adeniji and Salawu (2001) claim that if there is good wind speed, which is estimated at an average of 7.5 m/s or more, wind turbines can be seen as a technology with a potentially large capacity of electricity generation and can be cost-competitive even in grid-connected situations, depending on the wind conditions and local electricity tariffs.

3.3 Benefits of renewable energy to rural areas
Renewable energy offers significant economic, environmental and political advantages such as the replacement of fossil fuel with permanently available energy rather than importing conventional energy from outside and being able to generate reliable and cheap energy can trigger economic development (Odeku, 2012; OECD, 2012). Also, it considerably reduces infrastructural requirements (Scheer, 2006).

Renewable energy can lead to job creation (such as operating and maintaining equipment) and improved livelihoods, both which can contribute to significant increases in productivity in rural areas (Steger, 2005; OECD, 2012). Renewable energy technologies can produce electricity, thereby making it possible for the refrigeration of vaccines and operation of medical equipment in rural health clinics (United Nations, 2010).

Most renewable energy technologies are virtually free of emissions. For instance, wind and solar power have zero emissions (Brebol, Henriksen, James-Smith & Sommer-Kristensen, 2003). Brebol *et al.*, further state that renewable energy is endowed with natural distribution close to the demand in contrast to the conventional energies which tend to create excesses in market prices and uncontrolled industrial development policies that place priority on financial profit that enriches the emitters and negatively impacts on the environment. Renewable energy has an edge over conventional energy, as it may take a whole decade to get a new conventional plant or stream, but only a few months to build a solar plant (Patlitzianas, Flamos, Doukas & Kagiannas, 2004) Renewable energy offers environmental, social and economic advantages because it is one of the major factors in reducing poverty in rural areas (Patlitzianas *et al.*, 2004). Renewable energy will continue to play a significant role in providing basic services to rural areas (Odeku, 2012).

3.4 Cost of renewable energy technologies

A major setback to Africa's efforts to change to renewable energy and the associated technologies is cost (Kaggwa, Mutanga & Simelane, 2011). This is because the conversion technologies determine the unit cost of renewable energy harnessing, and these technolo-

gies have an impact on the price that consumers will pay for using a specific renewable energy source (Amigun, Kaggwa, Mutanga, Musango, Simelane & Stafford, 2011). Technology learning is an important driver of energy development and technology costs change over time (Wrinkler, Hughes & Haw, 2009). Technology learning rate refers to the reduction cost to construct and operate new technologies (South Africa, Department of Energy, 2013: 79).

According to Wrinkler, *et al.*, (2009), there is evidence that the unit costs of new technologies decline as more are built and technology design gets smarter. The unit price is an important factor that countries should consider when wanting to supplement energy with renewable energy (Kaggwa *et al.*, 2011). In South Africa, the prices for renewable energies are managed and controlled under the Renewable Energy Feed-In Tariffs (REFIT) programme which is aimed at encouraging private producers to supply renewable energy to the national grid at a fixed price (South Africa, Department of Energy, 2011). Kaggwa *et al.*, (2011) state that the South Africa unit production cost of energy using renewable energy technologies is relatively high when compared to international unit energy production costs owing to the fact that the market for renewable energy technologies in South Africa is still very young and lacks maturity, thereby posing a great risk for investment. Kaggwa *et al.*, (2011:9) argue that the unit prices of renewable energy technologies, particularly those of solar energy are too high and unrealistic for a developing country such as South Africa and thus prices need to be reassessed.

4.0 METHODOLOGY

The study used a survey utilising questionnaires and interviews to collect data. The questionnaire was distributed by hand among rural

residents of Oqungweni village, a rural area outside Ladysmith, Kwa-Zulu Natal. The purpose of the interviews was to uncover the underlying problems and the potential of renewable energy technologies in the area. The study used random sampling to select the respondents. To obtain the sample, the following formula was used: n=; where n is the sample size and N represents the population (N was 443). 94 questionnaires were distributed by hand. A response rate of 69.1% was achieved.

Two interviews were held with the Director of Technical and Planning from the Indaka Rural Local Municipality and the Planning and Coordinator of electrification from Ladysmith Eskom. The quantitative data collected from the questionnaires was analyzed using frequency distribution. The qualitative data was analyzed for trends and patterns.

The study acknowledged the possibility of the respondents not being able to read and write in English. Therefore, the questions in the questionnaire were asked in IsiZulu. However, this was a constraint to the data analysis process of the study. The responses to the questionnaires were translated into English and transcribed into text before being analysed. This was time-consuming. Further, the study was focused on the case of Oqungweni village in Ladysmith; therefore, the findings are not fully representative of all rural areas in South Africa.

5.0 PRESENTATION AND ANALYSIS OF FINDINGS

5.1. Demographic background

The majority of the respondents (74%) were female indicating that most of the surveyed households are female-headed. This is in line with the literature where Lebelo (2009) claims that women spend most of their time making household energy decisions. The remaining 26% were male. Regarding

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age, most respondents fell between 21 – 30 which represented 37%, 29% were between 31 – 40, 32% were 40 and above and only 9% were 20 and below.

The monthly household incomes indicated that the majority receive a low income, whereby 91% earn R3 000 or less per month with only 3% of the respondents earning more than R5 000 a month. Income is an important factor in determining whether the respondents can afford the use of renewable energy technologies. The source of income of the respondents helps to understand the security of income of the households and is linked to the affordability of adopting renewable energy technologies. The findings indicate that the majority of the respondents (40%) receive their income from social grants, whilst 25% from old age pension, 18% from employment, 8% from business and 9% from other sources. It can be deduced that many households rely on government grants and using renewable energy technologies such as solar panels might be an expensive option in terms of affordability. From the literature, it was shown

that the cost of renewable energy in South Africa is still relatively high, as the renewable energy industry is new.

5.2. Energy use and problems
5.2.1 Energy Type used
The findings are shown in Table 1 below. Just over half of the respondents (51%) indicated that they use wood for cooking followed by 25% using other energy sources, 17% using paraffin and 12% using gas for cooking. The study established that there is no piped water available in the area. Similarly, 51% of the respondents use wood to heat water followed by 25% who use dry aloe, paraffin (12%) and gas (12%). The study noted that there was a relationship between the household income and the energy sources used by the households. For instance, the majority of the households with low income (R3 000 and less) were found to be relying more on wood and dry aloe plants, while the households earning more than R3 000 were found to be using paraffin or gas.

In terms of energy for lighting, the majority of respondents (60%)

indicated that they use candles while the remaining 40% indicated that they use kerosene lamps. The findings show a high number of respondents using paraffin (kerosene lamps) lighting compared to those using it for cooking as shown in Table 1.

5.2.2 Energy source challenges
The findings are indicated in Table 2. The findings from Table 2 show that 35% of the respondents, mostly those that use wood or dry aloe plants, indicated that the energy sources were time consuming because they must be collected. Some of the respondents (23%) who use wood or dry aloe plants indicated that they had problems with the scarcity of these energy sources. This finding could also suggest that there is an excessive use of wood and dry aloe plants in the area, such that they are becoming scarce. A total of 22% indicated that the energy sources they were using were costly, whilst the remaining 20% of the respondents indicated that they were satisfied. These findings are consistent with the findings from the literature review where the United Nations (2010)

Energy source for cooking	No. of respondents	Percentage %	Energy used for water heating	No. of respondents	Percentage %
Wood	33	51	Wood	33	51
Paraffin	8	12	Paraffin	8	12
Gas	8	12	Gas	8	12
Other (specify)	16	25	Other(specify)	16	25
Total	**65**	**100**	**Total**	**65**	**100**

Table 1: Energy used for cooking and for heating water

Challenge	No. of respondents	Percentage %
Time consuming	23	35
Costly	14	22
Satisfied	13	20
Scarcity	15	23
Total	**65**	**100**

Table 2: Main challenges experienced with energy sources

claims that rural households spend substantial time and effort collecting the traditional resources of fuel which sometimes are sourced from further afield.

5.2.3. Awareness on renewable energy

The results are depicted in Table 3. Table 3 indicates that all of the respondents are aware of solar energy to varying degrees, with solar being the most common (85%), and biogas the least with 0%. The respondents were asked if they were interested in using electricity from the renewable energy sources listed in Table 3. The finding was that the majority (60%) said they were not interested in renewable energy and 40 % said yes. In order to understand the factors influencing the responses, the respondents were asked to provide reasons which were as follows:

1. Theft of solar panels: some households in the community had previously been using solar panels which unfortunately were stolen.

2. Some said they did not know what wind and biogas energy are and for that reason would not be interested in using the sources because they do not know how they function and how much they cost to use.

3. Instead of stating their reasons, some questioned the reliability and the need for them to use renewable energy technologies to source energy for electricity if the other 11 sub-villages in the area were able to receive con-nection to the electricity grid.

4. Other respondents indicated that they were willing to use electricity from renewable energy sources provided it would not be costly and would be more convenient than collecting wood and plants.

The study noted a relationship between the level of knowledge and interest on renewable energy. The aspect of theft in the area influenced the perceptions and attitudes of the respondents towards renewable energy technologies. Contrary to the negative responses, the 40% of the respondents who indicated that they are willing to use renewable energy technologies is a good indication of the potential acceptability and need of renewable sources.

5.2.4 Interview Findings: Challenges, Potential and Implications

From the interviews, the respondent from the Indaka Municipality (respondent A) indicated that constitutionally, the municipality was responsible for the provision of services including the distribution of electricity to households. However, because the municipality does not have the financial capacity and skilled workers such as electrical engineers to do so, Eskom holds the electricity license for the direct supply and maintenance of electricity to all households within the municipal jurisdiction.

The respondent from Ladysmith Eskom (respondent B) indicated that their branch had not made any plans and were not ready to venture into renewable energy because of current technical and financial issues existing which involve not having skilled and trained personnel for renewable energy installation and financing which the Department of Energy would need to provide to Eskom as an implementing agent of energy provision in the country. Respondent B indicated that renewable energy in rural areas was needed as an alternative for those areas that are not yet connected to the electricity grid because there are problems in rural areas where there is access to electricity. These problems include: the residents from electrified remote rural areas are struggling to purchase electricity because there are no places to purchase the Eskom electricity unit cards; rural residents are generally illiterate technologically and do not know how to purchase electricity units using cell phones; and the maintenance of electricity grids is a constraint in remote rural areas due to the lack of infrastructure and financial costs.

Both respondents had similar responses when asked about the incentives that they thought were important for renewable energy in rural areas. Respondent A indicated that very often, projects regarding development in rural areas are unsuccessful because of policies not being clearly formulated to accommodate the rural realities and as a result urban type of designs and strategies are adopted in rural areas. The implication is that there is a need for policy frameworks to guide

Have you heard of the following renewable energy sources?	Yes		No	
	No. of Respondents	Percentage %	No. of Respondents	Percentage %
Solar energy	65	100	0	0
Wind energy	10	15	55	85
Biogas	0	0	65	100

Table 3: Awareness on renewable energy

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the use of renewable energy in rural areas. Respondent B also indicated that Eskom provides energy based on policy guidelines that are provided by the government, therefore a policy for rural areas would be needed. Respondent A mentioned that rural residents would require financial support for them to have renewable energy technologies, whilst respondent B was of the view that Eskom, being an energy implementing agent for the Department of Energy, would need financial support from the government to conduct research and investigate potential renewable energy sources and technologies in rural areas.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of the findings

There is a need to adopt the use of renewable energy technologies in rural areas because electricity generated from fossil fuel power plants poses more problems than benefits in rural areas, especially in remote rural areas. Maintenance is difficult and places to purchase electricity are not easily accessible. Solar energy and wind energy and their technologies have potential.

In terms of cost, it seems rather unlikely that rural households can currently afford to use renewable energy technologies for electricity. Rural residents lack knowledge on renewable energy sources and their perceptions and attitudes on renewable energy show minimal willingness to adapt to the use of renewable energy technologies because of factors that influence their perceptions. This raises a concern, as it can be seen as a social barrier to the feasibility of adopting renewable energy technologies in rural areas. This might negatively affect the success of adopting renewable energy technologies in rural areas.

Institutions of energy supply such as rural local municipalities, Eskom and the Department of Energy recognize the need and demand

for renewable energy technologies in rural areas. However, financial and technical problems make it difficult to provide electricity through renewable energy technologies and this can be seen as a barrier to the feasibility of adopting renewable energy technologies in rural areas. For renewable energy technologies to be well initiated and used in rural areas, there is a need for legal incentives such as a policy framework specifically formulated to guide the use of renewable energy technologies in rural areas. It is important to make use of the currently available laws and policies on renewable energy and align them with rural realities and rural energy needs because what exists in the currently available laws and policies on renewable energy may be successfully implemented in urban areas, but not in rural areas unless proper studies and identification of rural needs and rural energy needs are done. This will enhance the feasibility of adopting renewable energy technologies in rural areas because not only will it help in setting the basis for initiating the use of renewable energy technologies in rural areas, but it could further open room for private investors to invest in rural renewable energy technologies because there would be policies used as the basis of what they can do, and how they can do it to implement rural renewable energy use.

6.2. The practical implications of the findings

The findings to the study particularly have implications on the current government policies. The currently available laws and policies on renewable energy in South Africa have been developed to enable the implementation of renewable energy in urban areas. The findings to the study indicate the need for legal incentives such as a policy framework that is specifically formulated to guide the use of renewable energy technologies in rural areas

and aligned to rural realities and rural energy needs because what exists in the currently available laws and policies on renewable energy in South Africa may be successfully implemented in urban areas, but may not be necessarily implementable in rural areas. Further, this will help set out the basis for initiating the use of renewable energy technologies in rural areas, thus enhancing the feasibility of adopting renewable energy technologies in rural areas.

The spatial location and pattern of the rural areas has been a major constraint to connecting the rural residents to the electricity grid, whilst theft of solar panels has also been a challenge. These findings to the study further indicate a need for the government to initiate a more coordinated planning approach to energy provision in rural areas which will, in turn, enable for integrated sustainable human settlements in these areas. The recently enacted Spatial Planning and Land Use Management Act No 16 of 2013 has the potential to assist the planning of energy provision in these areas, as it compels all municipalities to develop Spatial Development Frameworks (SDFs) and Land Use Schemes (LUSs) for rural areas. Through the use of SDFs and LUMSs, the spatial patterns of rural areas can be determined and energy provision can be planned for. Moreover, through the use of SDFs and LUSs, the government can explore on the integration of different renewable energy technologies to accommodate the existing spatial patterns and locations of the rural areas.

There is a need for financial incentives such as governmental financial support to enable the conducting of research studies and investigations with regard to the availability of renewable energy sources in rural areas and potential renewable energy technologies.

Financial support for the rural residents will also be required as an incentive to enhance the use of renewable energy technologies. The study recommends that there is a need for the government and other stakeholders to raise public awareness on renewable energy, its technologies and potential benefits to the rural communities before renewable energy technologies can be implanted in rural areas. The study recommends for these institutions to take the initiative to raise funds in order to finance the use of renewable energy technologies in rural areas.

Some limitations in the study were noted. There was no meteorological data collected in the study to properly assess the availability of different renewable energy sources at Oqungweni, the initial costs of renewable energy technologies and their maintenance because it would have needed more time to be verified. Further studies could be conducted by focusing on these aspects that were missing in the present study. Further research could also be conducted to review the rural energy realities in rural areas that have received renewable energy technologies already in order to evaluate the effectiveness of these technologies and establish further benefits and experiences that that exist.

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Strengthening service delivery with ICT based monitoring and reporting systems: The CSIR's municipal services corrective action request and report system (CARRS)

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Abstract:

In the advent of the democratic dispensation, government crafted and implemented new strategies and programmes that would ensure that everyone had equal access to basic services. However, many studies show that there are still significant gaps and challenges in the delivery of some basic services to the poor. To address some of these challenges, government has in the recent years crafted the National Development Plan (NDP), supported by strategies such as the Back to Basics (B2B), which put some emphasis on creating platforms through which municipal councils could engage with citizens. In a bid to strengthen the Back to Basics strategy, the CSIR has developed the Corrective Action Request and Report System (CARRS), which is an incident management and an ICT workflow system that provides a platform through which communities can report service delivery and infrastructure failure issues to municipal councils. The system is being piloted with a focus on water services in selected communities in eight of the priority districts. Findings of the pilot indicate a warm reception of the CARRS system by municipal councils and communities in the pilot sites, with more incidents being reported and managed, thus intuitively translating to an improvement in the delivery and quality of basic services.

Key words: local government, service delivery, ICT, incident management system, corrective action

1.0 INTRODUCTION

In the advent of the 1994 democratic dispensation, the national government crafted and implemented a number of strategies that were aimed at ensuring that everyone received services equally. To speed up equality and the delivery of basic services to the previously disadvantaged and underserved communities, service provision was then decentralized from one sphere of government with the establishment of provincial and local governments (i.e. district and local municipalities), with the latter seen as a vehicle for service delivery. However, this approach has also been fraught with a number of daunting challenges. There are still a lot of communities that do not enjoy their rights to basic services as a result of some complex intricacies in local government. In the recent years, statistics have also shown that more and more people are getting dissatisfied with the level of service provision in many municipalities. This has manifested in demonstrations and a rising number of service delivery protests which are also becoming violent. While service delivery protests may be complex in nature, it is also interesting to note that there is a trend in a growing number of service delivery protests that are linked to or driven by service delivery failures where infrastructure (to deliver such services) already exists.

This paper uses a mixed approach by providing some insights into some of the key strategies and programmes that have been developed and implemented by government, while also identifying some gaps that still exist, and uses a case study approach that takes a look at some of the successes, lessons learnt and policy recommendations that emanated through piloting of Corrective Action Request and Report System (CARRS).

2.0 BACKGROUND

2.1 Municipal Infrastructure Maintenance

"As municipalities pursue the eradication of backlogs in basic services, concerns are emerging over the deterioration of existing

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infrastructure and the sustainability of the new infrastructure being built. The problem is worst at municipalities where revenues are under pressure due to either large indigent populations, poor debt collection performance, or both" (DPLG, 2006:1 – 2).

In 2006, government approved the National Infrastructure Maintenance Strategy (NIMS), which highlighted infrastructure maintenance as a powerful tool for economic growth and service delivery. The strategy puts emphasis on the role that all spheres of government, together with state-owned enterprises, have to play in ensuring the sustainability of state-owned infrastructure. Over time, it has become clear that the successes in infrastructure maintenance were attributed to proper planning and budgeting, crafting and implementing policies to support infrastructure maintenance, making available skilled personnel and providing good leadership.

Although there has been some good performance with regard to infrastructure maintenance in some sectors, there have also been some worrying concerns in other sectors. While maintenance of wastewater treatment works were of great concern, other key infrastructure points such as water treatment works, water and sewer reticulation, on-site sanitation, some provincial and municipal roads and some provincial health and education facilities did not receive satisfactory maintenance (CIDB, 2007). All these concerns actually cut across the big four services provided by most municipalities. With water being the largest of the four (Stats-SA, 2015a), it is concerning that operation and maintenance thereof will become even more challenging for smaller and rural municipalities. Van Der Mescht and Van Jaarsveld (2012) argue that smaller municipalities across South Africa are facing crises and are at the verge

of collapse as a result of difficulties in contending with human resource issues, huge dependence on grant funding for financial support and critical operational deficiencies within technical departments.

2.2 The Priority Districts: An approach to tackle slow service delivery

While recognizing that some sectors performed well in terms of maintenance of state-owned infrastructure, there were significant and notable challenges in the manner in which local municipalities, especially those serving rural communities, planned for new infrastructure and conducted infrastructure maintenance (CIDB, 2007). In response, the Presidency declared some 23 districts, in 2012, to form part of government's priority (DRDLR, 2013). To foster local economic development, among other strategies, infrastructure development planning and the provision of social and economic infrastructure was seen as key towards addressing the many challenges faced by these municipalities. A framework for economic transformation, which included, amongst other things, the identification of infrastructure needs and the creation of maintenance jobs, was then developed (DRDLR, 2015). However, the implementation of these strategies was faced with funding challenges and insufficient coordination across government spheres.

2.3 Towards a Developmental State: The National Development Plan (NDP) and the Back to Basics (B2B) Strategy

In 2013, government launched the National Development Plan (NDP), which offers long-term perspectives in terms of the roles that different sectors of society need to play in reaching developmental goals. Amongst others, the NDP identifies capacity constraints as a critical challenge that hinders a capable and developmental state of the public service and local government

(NDP, 2013). To achieve a developmental state, the NDP further highlights the need for longer-term strategies.

Responding to local government challenges, the Department of Co-operative Governance and Traditional Affairs (CoGTA) established the Municipal Infrastructure Support Agent (MISA), in line with the Back to Basics Strategy, as a programme targeted at improving municipal infrastructure provisioning and maintenance for accelerated service delivery (www.cogta.gov.za). While MISA focuses largely on infrastructure provisioning and maintenance, the Back to Basics strategy, announced in 2014, looks at how to build responsible and accountable local government. The strategy provides a step-by-step plan of what needs to be done in the inter-governmental sphere to improve the performance of municipalities. It places open communication at the heart of what municipalities do by insisting that they establish platforms through which communities can interact with officials. It further emphasises that the interactions should ultimately result in timeous response to challenges.

2.4 Customer Care and Service Delivery

"When communication channels between communities and local authorities are perceived to be closed or unresponsive to community need, protest action becomes an avenue of engagement" (SALGA, 2015:7).

"…where there is both incapacity and low delivery on average, protest has escalated …" (SALGA, 2015:8).

In 2012, South Africa saw a peak in service delivery protest (Municipal IQ, 2013). Chief amongst issues raised in those protests was water services delivery (Tapela, 2013). According to the Municipal IQ Hotspot Monitor report of 2013, most service delivery protests had been

as a result of failures in local government institutions to deliver on promises that have been made. On the other hand, some studies show that municipalities that had strong customer relations management practices also experienced less incidents of or could better manage service delivery protests (Nicol, 2006), therefore suggesting a need for a local government customer relations management or customer care strategy.

Section 95 of the Local Government: Municipal Systems Act 32 of 2000 makes it a requirement for municipalities to establish customer management systems that aim to create positive relationships with their customers and through which customers can give feedback regarding the quality of services received. The Act further highlights the need for municipalities to provide accessible mechanisms for dealing with complaints from their customers, in addition to implementing corrective action. However, these provisions are only specified in Chapter 9 on "Credit Control and Debt Collection" in relation to levying of rates and other taxes by municipalities and the charging of fees for municipal services. Statistics show that most rural municipalities (e.g. mostly category B4) receive about 73% of their total budget from grants and subsidies (StatsSA, 2015b). This could inadvertently imply that municipalities largely serving indigent communities where services are not charged or rates and taxes are not collected may be exempted from having to establish customer management systems.

It is also clear that there is no distinctive policy governing all local government institutions or municipalities in establishing customer care systems irrespective of their category. Most municipalities have developed different variations of a customer care policy, which identifies the need to implement custom-

er service charters and standards that ensure that citizens receive services adequately. In addition, whilst other municipalities have yet to achieve this, most municipalities have also developed some Customer Care Centres and Toll Free Help Lines, which customers can use to report poor service experiences. However, an analysis conducted by the South African Local Government Association (SALGA) in June 2013 highlighted some predicaments in the effectiveness and functionality of the customer care service in most municipalities (SALGA, 2013). Some of the challenges identified in addition to the SALGA findings relate to poor responsiveness of call centres and customer care services, poor timeframes in resolving queries, inadequate human resources and lack of technology or relevant technical systems (PricewaterhouseCoopers; SALGA, 2013).

Customer relations management should be built around five pillars, which are: people, processes, information, infrastructure and technology, as argued by Nicol (2006:12), and not only be seen as an "option" for municipalities collecting revenue. In principle, customer care should embrace the concept of service delivery by putting people first.

3.0 THE CSIR'S MUNICIPAL SERVICES CORRECTIVE ACTION REQUEST AND REPORT SYSTEM (CARRS)

3.1 Introduction to the IPRDP

The Department of Science and Technology (DST) initiated the Innovation Partnership for Rural Development Programme (IPRDP) as a platform to drive science, technology and innovation that would improve service delivery in local government. Under the programme, innovative technologies would be implemented to demonstrate their suitability in improving service delivery while also contributing to a body of knowledge and policies

that could be used to build capacity in local government, especially that of rural municipalities. Five focus areas were identified as investment areas for the IPRDP – i.e. water, energy, ICT, sanitation and human settlements. The CSIR's Municipal Services Corrective Action Request and Report System (CARRS) initiative was conceptualized to respond to the IPRDP thematic areas that cut across the ICT and water and sanitation themes.

The CARRS project is currently being piloted in eight district municipalities, namely Amathole in the Easter Cape, Capricorn and Vhembe in Limpopo, Ehlanzeni in Mpumalanga, iLembe in KwaZulu-Natal and Dr Ruth Segomotsi Mompati, Ngaka Modiri Molema and Bojanala Platinum in the North West. These municipalities were also selected out of a list of the Priority Districts to form part of the IPRDP initiatives for purposes of demonstrating science and technology relevance in improving service delivery.

3.2 CARRS Framework

CARRS is an ICT service system and an Incident Management System (IMS) aimed at documenting incidents such as leakages, broken pipes, loss in pressure or any total lack of water services delivery within the municipal water services portfolio. Through the system, municipalities can respond to the reported issues within reasonable time and also provide feedback to their consumers or communities.

The incident management component of the system has four distinct functionalities:

Firstly, it serves as a communication tool through a specialized two-way electronic communication platform between communities and municipalities. Communities are represented by Task Teams that have been established out of already existing community structures.

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Secondly, the system serves as a receiver and processing centre for reported incidents. After verifying the validity of issues reported by communities, Task Teams capture and submit the reports on the CARRS system using internet enabled desktop computers. The reports are then automatically routed to the responsible persons within the municipality for further action. In the process, the system generates electronic notifications (i.e. email and SMS) with unique ID numbers for every report. The responsible persons are then expected to assess the nature of the incidents reported, prioritise and prepare necessary remedial actions in response.

Thirdly, the system provides feedback to customers (through their respective Task Teams) on remedial actions undertaken and implemented by the municipality. This aspect fosters transparency at all stages of incident management.

Lastly, in addition to the latter, accountability is further fostered by introducing automatic and manual escalation procedures. Depending on their priority levels, issues that take too long without being actioned in the CARRS system are automatically escalated to senior management. Manual escalation procedures are also made available to allow escalations of issues that require non-technical intervention.

3.3 Conceptual Design Principles: A service delivery oriented approach

The underlying design principles of CARRS have largely been guided by best practice of the British Parliamentary and Health Service Ombudsman's Principles of Good Complaint Handling (2009) and the Ombudsman Western Australia's guidelines on The Principles of Effective Complaint Handling (2016). These principles have been discussed in relation to CARRS functionality, largely according to the Ombudsman Australia's guidelines.

A good complaints management system should feature some elements or principles of effective complaint handling in about three steps, namely: 1) enabling complaints, 2) responding to complaints and 3) accountability and learning.

3.4 Enabling complaints

Enabling complaints refers to arrangements that a public institution has made for its customers to report issues or complaints. The arrangements have to be customer focused, visible, and accessible.

Customer Focused — In the initial stages of the CARRS project, buy-in from participating municipalities was sourced through rigorous engagements with officials at different levels. Such engagements were fostered through initial presentations at management committee levels. Municipalities supported this by committing staff ranging from Executive Managers to Technical Services Directors, Water Services Managers, Customer Services and Call Centre Operators.

Visibility — CARRS was made visible through establishment of Task Teams in communities. Community engagement processes of municipalities, which entailed observing all active leadership and community structures, were followed in the establishment of Task Teams. While some municipalities utilized their Institutional and Social Development (ISD) functions to foster community engagements, others engaged their Customer Care divisions for the same function. In addition, the CARRS project was also made visible through the Youth Journalism media programme of the National Research Fund (NRF) and the South African Agency for Science and Technology Advancement (SAASTA). Community media, which were largely in a form of local community radio interviews and local newspaper articles, were used as a platform to introduce and provide information about the CARRS project to communities.

Accessibility — The concept of establishing Task Teams within communities embraces the idea of making the CARRS system more accessible to complainants. The Task Team approach somewhat eliminates issues, such as literacy, that ordinary consumers may have otherwise faced as the system is ICT based.

3.5 Responding to complaints

Responding to complaints refers to the handling of complaints by a public institution in an objective and fair manner, and with confidentiality. The handling of complaints must have corrective actions and should end with a review of what led to a breach in delivery of a service.

Responsiveness — As the system is ICT, reports are captured into the workflow processes in real time and unique report ID numbers are generated for each report captured. The report IDs can be used to track the statuses of the reports. Escalation procedures also give the CARRS system an edge in responsiveness and less latency.

Objectivity and Fairness — The system has built-in service standards, which are effected per category of issue reported, also guided by the issue's priority level. Certain issues, such as water quality, are only captured as high priority issues and thus receive utmost attention at all times. In addition, only Task Teams can close a reported issue once a closure request has been sent by a municipal official or responsible person.

Confidentiality — Customer information is protected, and only active system users assigned to manage reported issues can have access to some personal details such as telephone contact numbers of the complainants.

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Remedy — The CARRS project approach embarked on a basic assumption that municipalities mandated to provide water services (i.e. WSPs) should have Operation and Maintenance (O&M) capabilities or should have outsourced. Therefore, these municipalities should have capability to provide necessary remedial actions on reported issues.

Review — The CARRS Incident Management Framework (IMF) makes it a standards procedure to conduct "Root Cause" analyses on all issues reported. This procedure is yet another way of ensuring that when corrective measures are implemented they address the real cause of the reported issues and not only the effects.

3.6 Accountability and learning

Accountability and learning refers to establishing clear lines of reporting for complaint handling and making available names of staff responsible for handling complaints. Learning entails creating enabling environments for future improvements of complaint handling processes.

Accountability — The CARRS incident management framework (IMF) identifies specific staff members that are actively responsible for handling reported issues at all stages of the workflow. When the reported issues progress from one stage to another, such information is made available to all active system users. In instances where responsible persons do not take action on reported issues, the system automatically escalates such issues to senior management for internal intervention.

Learning — It can be expected that as a result of the escalation procedures, municipal officials will eventually learn how to improve their efficiency in the manner in which they manage reported issues.

4.0 RESEARCH LIMITATIONS

The main limitation that this paper should highlight is the lack of a review of existing or similar customer care systems that are geared towards improving service delivery. This is due to the fact that the CARRS initiative was a response to a specific thematic call made by the Department of Science and Technology (DST), which required a response to a specific challenge; Innovation Partnership for Rural Development Programme (IPRDP). Within the ambit of the IPRDP, there was less room for "research", as those responding to the call were expected to present technologies that had a higher readiness level or almost ready to go to the market. Thus, the innovation value chain paid particular focus on demonstration.

5.0 PRELIMINARY FINDINGS

5.1 CARRS Technology Adoption and Usage

It is encouraging to note that the CARRS system is progressively being adopted by the targeted municipality and that usage by both municipal officials and community-based Task Teams is also increasing. Findings thus far indicate that municipalities are slowly starting to get used to the new ways of managing incidents in a smarter way through the CARRS system and initiative.

Three municipalities have been used as case studies for the evaluation of adoption and use of the CARRS system. These are Amathole District Municipality (ADM) in the Eastern Cape, Capricorn District Municipality (ADM) in Limpopo and Ehlanzeni District Municipality (EDM) in Mpumalanga. These municipalities, with the exception of Ehlanzeni DM, are also both Water Services Authorities (WSAs) and Providers (WSPs). Ehlanzeni DM has decentralized the WSA and

WSP functions to all its local municipalities. Further engagements with regard to piloting of CARRS in Ehlanzeni were made with two local municipalities, namely Nkomazi and Bushbuckridge. These municipalities also have, with the exception of Capricorn DM and Nkomazi LM, some sort of a paper-based customer care call centre. Capricorn DM does not have a customer call centre and is currently in a process of implementing a new call centre system. Nkomazi LM has a mobile-based call centre system that acts as a notification system only.

To support the arguments made in this paper, data was sourced from the CARRS database and was analysed by drawing frequencies and categories of issues reported. A further analysis on the responsiveness of municipalities to the reported issues was also done. The analysed dataset ranges from reports made from October 2015 to the end of September 2016. Other sources, such as planning documents, were also used to triangulate and draw some conclusions.

5.2 Amathole DM

Amathole DM is the first municipality where implementation of the pilot was done. This is a municipality that contends with serious issues of water service backlogs, with 80% of the backlogs largely being in Mbhashe and Mnquma local municipalities.

Figure 1 shows the types of incidents currently being reported while Figure 2 shows the average statuses of these incidents.

As depicted in Figure 1, 40% of incidents reported are related to water leaks, followed by reports on complete network failure at 36%. Other incidents such as water supply disruption, intermittent water supply and low water pressure have also been reported. It can be seen that when fully implemented, the CARRS system will support

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strategic programmes such as the national Department of Water and Sanitation (DWS)'s War on Leaks (WoL) programme while at the same time improving on how municipalities deliver services in a sustainable manner.

Figure 2 below summarily highlights the gap that still exists within Amathole in terms of its capacity to manage reported issues and incidents. This gap could also be attributed to the need for continuous training, further engagements and technical support to ensure that officials adopt the CARRS technology fully. Figure 2 shows that of the total incidents that have been reported by communities since the implementation of the CARRS sys-

tem, only 33% have been closed. It should also be noted that the status of closed incidents do not necessarily translate to incidents being resolved, but may effectively mean that there has been a reasonable agreement reached between the municipality and the communities in terms of a solution or alternatives. However, the closed incidents status also somewhat reflects some satisfaction with regard to a proposed solution to address the reported incidents.

As depicted in Figure 2, there is a need for continuous engagements with the municipality and the need to provide more support in addressing reported incidents.

5.3 Capricorn DM

A rapid analysis of incident management in Capricorn DM indicates that there is still a gap in how municipal officials use the CARRS system to manage incidents on the ground. All incidents that have been reported by Task Teams have not yet been closed on the CARRS system. An observation in the workflow of the reported incidents also indicates that the incidents were not assigned and allocated responsible persons to work on. On the other hand, a follow up with Task Teams regarding the reported incidents indicates that the municipality had addressed some of the incidents on the ground. This indicates that there
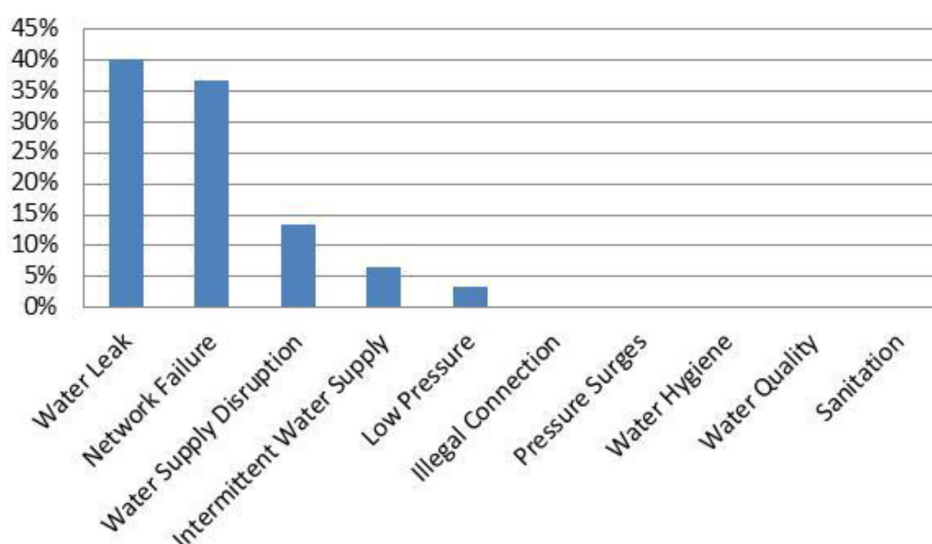

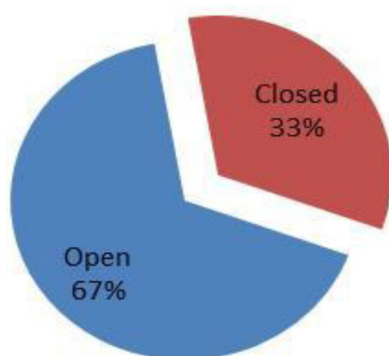*Figure 1: Amathole's CARRS reported incidents by category*

Figure 2: Amathole's CARRS incident management status

is some level of use of the CARRS system, however, not in an effective manner. This could also reflect the need for further training reinforcements.

Figure 3 shows the reported incidents by category. About 36% of the reported incidents are related to water supply disruptions. Other challenges such as Illegal water connections, low water pressure, water leaks, intermittent water supply and network failure have also been reported through the CARRS system. Whilst Amathole DM had water leaks and network failures as the highest reported incidents, Capricorn DM has water supply disruptions as their biggest concerns.

5.4 Ehlanzeni DM

Ehlanzeni DM is neither a WSA nor a WSP. Both functions are carried out by all its local municipalities. At the initial engagements with Ehlanzeni DM, both Nkomazi and Bushbuckridge were chosen as priority sites for the piloting of CARRS. Analysis presented hereunder was done on the Nkomazi municipality.

As depicted by Figure 4, five different categories of incidents have been reported since the inception of the project in Nkomazi LM. Almost 42% of reported incidents are related to Low Water Pressure, followed by Water Leaks at 25%, Water Supply Disruptions at just under 17%, Intermittent Water Supply and Illegal Connections both

at just above 8%. It is interesting to note that the two highest incidents reported were on Low Water Pressure and Water Leaks. These two categories have a very intricate relationship. A change in pressure within a water distribution system often has a direct effect on the leakage behaviour of that system. It could be possible that the Nkomazi LM have a pressure regulation process as a way to manage leaks within their distribution network.

Of all reported incidents in Nkomazi LM since the inception of the CARRS project, none had a closed status.
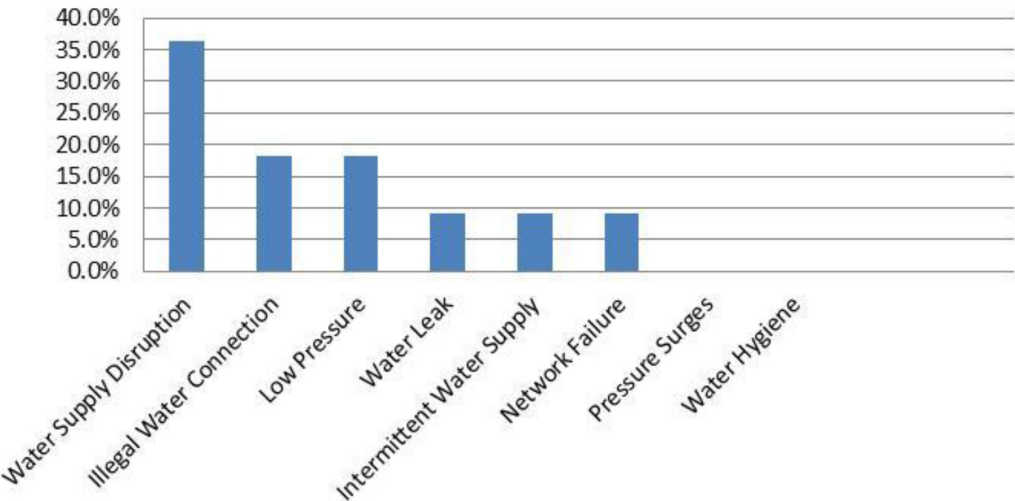

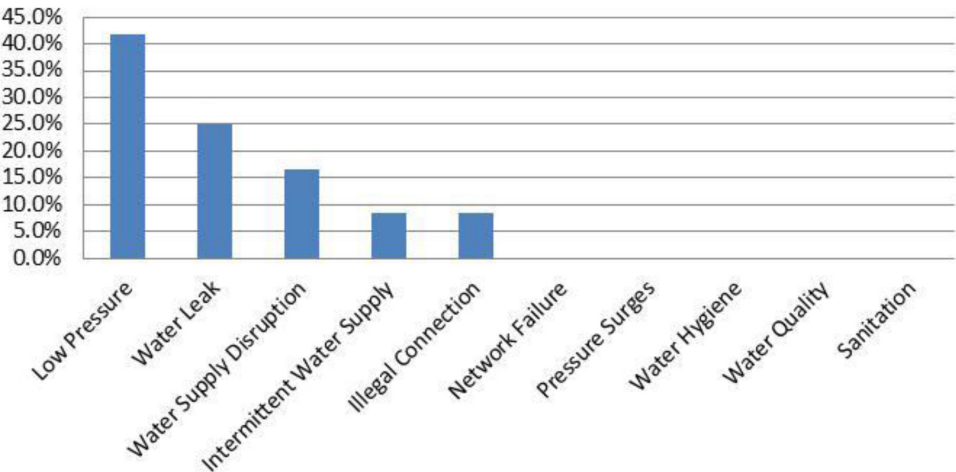*Figure 3: Capricorn's CARRS reported incidents by category*

Figure 4: Nkomazi CARRS reported incidents by category

5.5 Challenges and Lessons Learnt

Through the implementation of the pilot project, the following challenges were experienced. These challenges have contributed to a body of knowledge with some policy implications discussed in the next subsection of this paper.

No standards for infrastructure monitoring and fault reporting systems—Although not all municipalities had systems for monitoring faults on their infrastructure, some municipalities, such as Amathole DM and Rustenburg LM, had purchased extensive ICT service systems that they used for reporting and managing workflows for repair work. A key finding is that there are no standards that govern how such systems should be designed, therefore leaving the market monopolized by vendors and service providers. CARRS offers an opportunity for introducing standardization on monitoring systems.

Resistance to change—Some municipalities that were characterized by high political turmoil also demonstrated resistant to accept CARRS as monitoring and reporting tool. The assumption that this paper makes is that although ethical issues around data management were outlined at the inception of the project, CARRS still presented some form of a threat, such as lack of full control over the management of system generated data and over who else may have access to it.

Literacy and productivity issues—Municipalities that absorbed staff from the former Department of Water Affairs and Forestry (DWAF) through the DWAF Turn-Around Strategy had issues relating to qualifications and literacy of the so called "DWAF Staff". Most of these staffs, especially those who were nearing retirement, were somewhat computer literate. This, for the CARRS project, presented a challenge. However, this presented an even bigger challenge for municipalities migrating from paper-based to ICT systems.

Commitment to serve and the "Over Committed-ness Syndrome"—Whilst some municipal officials demonstrated commitment to serve and were dedicated to CARRS, there were also officials that were committed to many other activities such as serving on too many committees and structures. This presented a challenge, as most of such officials had critical roles to play on the CARRS system and their roles were subsequently compromised as a result of their unavailability.

Lack of critical information—During planning and at the inception phase there were critical documents that could not be retrieved from some municipalities such as as-built drawings of water distribution networks. Municipalities did not have proper archiving systems and, in worst cases, had lost important documents over time. Some documents were retrieved from service providers that were appointed to do some work for municipalities, therefore demonstrating poor control over ownership of data and information generated out of publicly funded programmes.

High staff turnover—This has been experienced largely in smaller and rural municipalities where there are strong elements of frequent 'acting' in senior positions. This factor often results in loss of "institutional memory" and subsequent poor service delivery as a result of appointment of inexperienced staff in key positions.

5.6 Policy Recommendations

In light of the preliminary findings and lessons learnt though interactions with municipalities from implementing the pilot project, the following policy recommendations are made:

- There is a need to develop an enforceable policy and a Customer Care Strategy specific to local government and public service institutions. Revise the Local Government Municipal Systems Act 32 of 2000 to include a dedicated chapter on Local Government Customer Care. Currently, the Act, under Chapter 9, only makes it a requirement for municipalities to establish customer management systems only as mechanisms for supporting credit control and debt collection measures. The Customer Care Strategy needs to be binding even for small rural municipalities that are largely dependent on equitable share and other government grants.

- In addition to the above, there is a need to develop and implement an Accountability System that is customizable to different levels of municipal structures and systems, ranging from municipal managers to senior managers, directors and general staff, programmes run from within the institutions and projects implemented in communities, and the Performance Management Systems used municipalities. The Accountability System should be aimed at eliminating the tendency of "getting away with it as it is not punishable", which has led to a plight in the quality of delivery of services in most municipalities.

- Develop a skills focused Inter-Local Government Relations Strategy. The manner in which local government institutions currently utilize the Inter-Governmental Relations (IGR) strategy, especially rural municipalities, is largely through cooperation on cross-border infrastructure and service delivery programmes. There are less practices of capacity building and skills transfer initiatives between and amongst local government institutions. The benefit of the latter would

be in terms of relevance, experiences and successes shared, as opposed to power over authority.

- Improve the local government employee incentive scheme and staff retention mechanisms with sustainable incentive systems. The public service and local government are sectors in their own right and are challenging environments that should not be taken lightly. Working in these sectors should therefore be rewarded by establishing a "local government service" point system that can be paralleled to other point systems such as the Continued Development Points (CDP) system that is commonly used in sectors such as Engineering.

- Establish an electronic and a centrally managed local government sector-based information and knowledge management system. The aim is to curb challenges in the poor management and loss of local government documents and information, which is often as a result of premature staff resignations. In addition, document management ISO standards should be implemented and made enforceable for all municipalities.

6.0 CONCLUSIONS

Despite considerable progress made since 1994, it is clear that more still needs to be done especially in the local government sphere. This paper outlines ongoing work, successes achieved and policy recommendations as informed by piloting of the CSIR's CARRS project. The CARRS intervention offers a 'back to basics' approach that supports service delivery strides made by national and local governments. While CARRS is gradually being adopted by municipalities in the pilot sites, there is need to change the current traditional culture and understanding of customer care within local government and

encourage local government institutions to adopt more apt approaches that are centred around accountability and service delivery. An important conclusion that is drawn is that service delivery should not only be seen as rolling out of new infrastructure, but should also be accompanied by related services such as monitoring, operation and maintenance and customer care programmes.

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The plight of women against housing challenges in the Mdantsane township, Eastern Cape province of South Arica[1]

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Abstract

This paper touches on day-to-day social and economic issues affecting women, bearing in mind the historical difficulties women in South Africa experienced during the apartheid years to participate in the main stream of the economy because women were not permitted to own their own houses. The paper provides an empirical narrative account of the plight of women in housing. The paper argues that housing in South Africa is still one of the greatest challenges in the post-1994 dispensation due to a complicated and disintegrated bureaucratic system that was inherited from the apartheid government. Issues of homelessness, unemployment, poverty and inequality are crucial in understanding why women's rights were violated and account for the reason for the transformative shift to restorative justice in the post-apartheid democracy. After 22 years of democracy, human rights violations and problems of home-lessness still present significant challenges despite progressive improvement in human settlement. A qualitative study was employed based on historical facts, but also on triangulated empirical evidence informed by observations and key informant interviews to draw compelling conclusions and propositions.

Key words: *public participation, poverty, inequality, human settlement, self-help, empowerment, housing project, informal settlement, funding*

1.0 INTRODUCTION AND BACKGROUND

Housing problems in South Africa date back from the colonial era to apartheid and straddles post-apartheid South Africa. The main argument in this paper is an interpretation of how previous state structures, with associated spatial practices, have influenced housing delivery in post-apartheid South Africa, which led to the inclusion into the constitution of a right to have access to adequate housing. Despite this constitutional imperative, housing remains a challenge in South Africa.

The Eastern Cape has the third largest provincial population in the country. What is today the Mdantsane Township, the second largest township in South Africa after Soweto, was born out of apartheid, which pushed black people into the periphery; women in particular were affected negatively. The legacy of apartheid is now, today, causing unstable movement from rural to urban areas from which Mdantsane has mushroomed, leaving the delivery of housing under serious stress to accommodate the increased demand for housing. In doing away with the legacy of the painful past, women should play a role and be involved in every decision in the mainstream of the economy. Housing projects should be built according to a standard that does not compromise human dignity and respect for black people who equally deserve a decent life, and their livelihood should be of good quality no matter where they are in rural areas, townships, towns and cities.

It is the basis of this paper to emphasise the plight of women in the ensuing discussion underpinned by social theories and empirical evidence. Unfortunately, even today after 20 years of democracy, women are still struggling; they have rights, but their rights have not yet translated into meaningful, quality living experiences.

2.0 SOCIAL THEORIES

Social theory informs our understanding of issues that, in turn, assist in making decisions and sense of the world around us. In other words, there is a constant

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1   This article was informed by the research published by the author in his 2015 self-published book entitled 'Women Participation in Housing Re-examined, Wandsbeck, South Africa: Reach Publishers

relationship that exists between housing and social theory. Almond (1998:872) states that it is fairly clear that there can be no return to the state of any simplistic political reductionism that denies women participation in housing delivery programmes or neglects wider social forces and their operations through the state to determine or influence rural housing. The state reacts to the preference of electors, but such inactive views of state intervention are unsatisfactory. It should no longer be good enough for any study of housing to be undertaken without first explicating a position on the extent to which the state is seen as an autonomous actor in housing delivery.

Modernisation scholars held the view that social change was evolutionary; it would take generations to complete and its impact would be felt only through time (Chinchilla, 1983). These modernisation scholars drew their assumptions from the functionalist theory, which emphasised the interdependence of social institutions, the importance of pattern variables at the cultural level, and the built-in process of change through homeostatic equilibrium. Parsons (1966) was one such theorist. Among other things, modernisation meant the transformation of communal land ownership to a system of private ownership. In housing, modernisation meant the adoption of industrialised housing based on Western culture and technical standards. The dominant form of shelter was conventional housing and this led to the bulldozing of slums and rehousing of the occupants in public housing (Burgess, 1982; Hardoy & Satterthwaite, 1989).

Later critiques of modernisation arose from scholars of opposing ideological leanings (Alvin, 1991; Valenzuela & Valenzuela, 1993). Samuel Valenzuela and Arturo Valenzuela state that modernisa-

tion theory relied on a reductionist approach, inadequate for the study of a complex phenomenon such as development or underdevelopment (Valenzuela & Valenzuela, 1993). Neoclassical critiques of modernisation gave rise to two development strategies: the basic need approach and redistribution with growth in the 1970s and 1980s respectively (Burgess, 1992). The underlying assumption was that growth could be achieved by addressing the triple problems of poverty, unemployment and inequality (PUI). The right-wing supply-side economics that underpinned these strategies was critical of the Keynesian basis of modernisation, which argued that development problems were a result of insufficient aggregate demand. The redistribution with growth strategy posed that the objectives of growth and equity were not in conflict. Growth could be achieved by focusing on the growth of income of the targeted poverty groups such as women. Income could be improved through transfers and subsidies and improved access to goods and services such as water, electricity, roads, housing, health and education. The basic goal of redistribution was an improvement in the absolute income of the poor rather than the redistribution of existing assets, output and employment of the poor and labour-intensive measures aimed at increasing productivity. This resulted in the adoption of self-help housing in the 1970s.

To this end, the liberal neoclassical view says that the housing problem is a result of natural causes such as population growth, but it is not these pressures alone that are to blame. It is the interventionist and discriminatory policies, as well as the more recent patent lack of policy or action on the part of the government, which have exacerbated the problem to the extent that it has become a crisis. The legacy of apartheid in the very form of the city itself is a sustaining factor and

major barrier to solving the problem. The neoclassical vision is that in setting out to solve the housing shortage by freeing up the housing market, the production of housing will become a major stimulator of economic growth in the country and thus solve many other economic problems at the same time.

This neoclassical view was however objected to by the neo-Marxists in their attempt to explain the housing crisis in South Africa. The neo-Marxists have a refreshingly radical view of the past and a rather visionary view of the future. Their solutions are revolutionary and much wider in their implications for a changed society. This possibly makes these solutions less useful as long as the present economic system remains in place. Where their solutions are relevant to present changes that are being implemented, it is in the emphasis of redressing past injustices. Their analytical framework could also be of great value in avoiding the inherent inequalities of past systems and policies. There is no doubt that the women participation in the housing delivery problem in South Africa is complex in origin and difficult to solve. It is for this reason that Davids *et al.* (2005:9) emphasise the need to consider public participation approaches that promote women participation in development.

3.0 EMPIRICAL ANALYSIS

Early on the morning of 24 March 2012, I set off from the university in search of the urban housing projects. As I drove around the urban areas, I wondered how the use of traditional rondawel architect was thought through. These urban areas of the defunct Ciskei are comprised mainly of scattered and occasional closer settlements. In this area, most houses were linked to gardens of varying size. As I drove further on the poorly maintained dirt roads, **111**

I wondered how the Eastern Cape Department of Housing officials would engage villages in alternative models for urban housing design. I also wondered how housing development would be connected to farming and urban livelihood pursuits and problematic issues of insecure tenure would be introduced and discussed. I also reflected on questions of governance and authority and the fraught relationships between traditional leaders who controlled land allocation whilst local government officials controlled housing project funding.

Nearly half of the key informants are still waiting for the government to provide them with houses. An interview with a household in Hipell-crest Extension (2008) lamented that:

"This community has lost hope, our complaints have not been received and they serve nothing. There is no response by anyone. The role of the municipality should make sure that delivery of houses is speeded up – this project developed very slowly."

This shows that the problem of housing is still enormous and most people need housing to deal with problems of inadequate shelter, homelessness and poverty in low income areas in the Buffalo City Metropolitan Municipality. Some key informants who are renting houses do not have sufficient income to sustain their living. There are also no measures in place to help the poor realise their rights to acquire decent housing. Key informants state that houses are given to unintended beneficiaries, whereas the deserving beneficiaries are left out. Some people have multiple ownership of housing, whilst others do not have access to any.

About 40% of the key informants cited inequality and discrimination against disabled people in attaining RDP houses. At least 70% of the interviewees raised concerns over the exclusion of women. Women are not recognised as home owners. Hence, it can be very difficult for most of the women to acquire government free housing facilities in Mdantsane Township. As stipulated by the local government, the eligibility criterion is based upon a person being a South African citizen. However, 75% of the key informants asserted that foreigners are currently occupying RDP houses in the local areas. This shows irregularities in the provision of housing, hence targeted areas and vulnerable groups such as women, elderly persons and the disabled are not sufficiently catered for.

According to the study, 95% of the key informants in the Mdantsane Township, most of who were women, find it harder to gain access to housing, which was allocated by an ability to pay rather than by housing need. Changes to housing policies since 1962 made it increasingly difficult to gain access to public sector housing and there was greater emphasis on finding housing in the private sector, especially through owner occupation. Such a trend causes increasing disadvantage to women.

Ninety-five percent of the key informants from the Mdantsane Township disagreed that available funds were adequately spent for housing development, since their houses are on the verge of collapse. Constant review of the delivery of houses and housing services is of paramount importance in our contemporary and fast-growing society. Key informants would like to see improvements made to their houses that were built some fifty years ago. According to the study, 95% of key informants from the Mdantsane township were of the view that housing services were not continuously monitored by the mu-

nicipality; thus, everything is falling apart without help and response from the authorities.

The study has also revealed that women were not satisfied with the pace, the quantity or the quality of houses built for them. Houses were too small to accommodate their traditional functions such as weddings, circumcision, heritage days and other special occasions. It has shown that 96% of the key informants were Xhosa women, most of whom were pensioners, who are forced to stay with their grandchildren since most of the parents have either died as result of the scourge of HIV/AIDS or travelled to Cape Town, Johannesburg or Durban to look for greener pastures — jobs — or *umsebenzi*, as it is called in Xhosa.

Young women do not wish to remain in the family home, or find that they are unable to stay there because of personal circumstances. They have a very limited range of housing options available according to the current housing policy in South Africa. Homeless young women have no right to accommodation under homeless legislation. Many beneficiaries agreed that they were facing serious challenges pertaining to the low-cost houses allocated to them. They also reported that, since they had applied for housing in 1998 and 1999, they had not received any report on the progress of their applications until 2003 when the Provincial Department of Local Government and Housing started to revive the housing project. Most of the beneficiaries indicated that they used to go to the department to enquire about their status of housing provision. They indicated that, due to the lack of information in terms of the project, some of the people were unable to resort to other means of accommodation, such as renting, to accommodate their families. The other challenge was that most of

them were not working, and it was difficult for them to get money for transport to the department to make inquiries about their applications.

The statistics presented in Table 1 show that there was a huge demand for housing in these urban areas. One sees from the statistics that the housing waiting list has been growing over the years. In 2002, for example, there were 1 946 people on the waiting list and the corresponding figure for stands allocated was 834. As the waiting list increased, the number of stands allocated decreased, which meant that the figure for stands or houses stayed very low. The key informants expressed concern that some applicants either become inactive or completely drop from the housing list because they would not know about their chances of owning a house. As such, this brought about substandard illegal structures built in the hope of waiting for housing delivery.

Many key informants pointed at the inefficiency of the local municipality in providing housing to the urban populace as the main reason for inadequate housing delivery in the area. One respondent states that:

> "I am not happy with them: they call us for meetings, promise this and that, even things they know they cannot deliver."

While beneficiaries appreciate that the government built houses for them, they were still not satisfied, as a number of problems are still eminent in the area. Community participation, if employed, will presumably ensure that the deserving people get the houses due to them without nepotism hampering the process.

There are several factors that prevent communities from participating in housing provision. These include lack of information and lack of understanding of the roles and responsibilities of various stakeholders in local governance. The community representatives interviewed felt that the top-down bureaucratised and centralised strategies of addressing issues of housing has led to poor planning and implementation. Moreover, the apparent inaccessibility and lack of visibility on the part of officials in the community has meant that the needs of the vast majority of people were largely unresolved. The community members interviewed in this study emphasised great concern about the absence of regular feedback from meetings with representatives of community groups, demonstrating unwillingness on the part of the government officials to share their decisions made. Some meetings and workshops do not accommodate all the people, for they are convened during working hours instead of being held after hours and in venues closer to the communities. Generally, community organisations and councillors have not developed strong relationships based on clearly defined terms and roles and participatory decision-making in keeping the community informed.

Most key informants said that the process of women participation in local government is complex and must be addressed at several levels. Access to quality housing should not be understood as a privilege to be enjoyed by a few. Women participation should be used as a means of empowering communities. This implies that community involvement should be understood as to benefit communities not only through the development itself, but also by establishing a relationship with the community that will ensure sustainable growth. For example, if communities are part of the whole process and are seen as important stakeholders, they are more likely to own the housing delivery project (Pieterse, 2001). Pieterse further contends that public participation gives people a better understanding of their own interest and the interest of others and, in some cases, brings them to see what would be best for the entire group.

One argues that it is not sufficient to support women's empowerment in policy while sabotaging their participation at the implementation level. One way to reconcile policy and practice is to recognise the role of women in the production and distribution of material in their own communities. Government bodies could move a step further and give contracts to women to supply building material in the construction

Year	Total number of those on the waiting list	Number of stands allocated
2002	1946	834
2003	3017	1079
2004	4740	2065
2005	5313	2860
2006	6430	3795
2007	6956	3800

Table 1: Low income housing list | Source: Buffalo City Metro Municipality: Department of Housing, 2008

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of government-funded utilities such as schools, halls, clinics and other similar projects. Bypassing women, who are the local material suppliers in the community, denies the opportunity for local economic development. However, supporting women would benefit the whole community, for it would result in more employment and more money to spend, and therefore result in sustainable local economic growth.

The other factors that contributed to the decline in housing provision in the Mdantsane Township can be attributed to the unequal land ownership, discriminatory land use regulations and insecure land tenure systems, which marginalised the majority of the urban and urban poor populations. This view is supported by Maqhasha (2003:43), who writes that since people do not have access to land, this fact inhibits their access to housing, whereas housing is a right. The process of acquiring land and letting people build houses is significant because it provides the poor with access to security of tenure and encourages them to progressively build or extend quality standard houses and increasingly improve their infrastructure.

The legacy of racially unequal land control that confronted the former settler colonies was, at independence, maintained through constitutions that guaranteed the protection of private property and sanctified yet aborted 'willing buyer, willing seller' approaches to the redistribution of freehold land. More harm to the housing service delivery was the neo-liberal tendency of the South African government to enhance a market-based economy, or rather, a gradualist approach to land reform. One argues therefore that there must be equitable distribution of land, and the state must acquire more land for housing projects and ensure that interplay of intergovernmental relations within

and across the spheres of government is effective.

Key informants argued that duplication of housing institutions and funding mechanisms caused tremendous constraints in delivery. They said that:

> "Fragmentation of the housing function racially between the previous own affairs administration and the department of housing has resulted in a large amount of overlap, duplication and confusion within and between housing institutions, which results in significant inefficiencies and wastage."

Tomlinson (1999:76) states that project-linked housing has relied on assumptions that those communities could be active participants in the projects and equal partners with the developers through social compacts and banks would grant low-income households credit to finance construction of a structure once they had obtained their serviced lots. Unfortunately, this has not been the case.

4.0 FUNDING MODEL FOR HOUSING PROJECTS

The local municipality gets the majority of its revenue from the public. Due to funding constraints, it is difficult to provide services to the communities to their satisfaction. This view is also echoed by Park (1998:6), who states that lack of financial support for the housing sector has made attempts to increase housing supply ineffective. According to a local government official, about 35% of the Mdantsane Township's revenue comes from other sources or donors, as the private sector is also involved in funding housing projects in low income areas. The budget allocation from the state singlehandedly cannot meet the housing expectations in the area. The system is driven by narrow budget allocations, not actual human settlement need. Howev-

er, the stakeholders themselves are providing little to enhance housing projects.

Considering that Buffalo City Metro Municipality has more than 21 housing projects with an estimated 4 000 approved beneficiaries, it will be very difficult for the municipality to reach these targets. The annually allocated budget for the municipality is not sufficient to spearhead housing projects in its surroundings. Delivery mechanisms are bureaucratic and slow, hence the available housing budgets are persistently underspent. Currently, the major sources of income for the Buffalo City Metro Municipality are the land rents from people who occupy council houses. Most key informants cited lack of funding as the major challenge faced by the local municipality to effectively deliver social services such as housing to the people. Even the money or funds acquired from banks that have sponsored some housing projects and other stakeholders are not enough to help deliver cost-effective services that meet minimum standards. Buffalo City Metro Municipality's lack of funding has affected service delivery to its surrounding areas and that makes it unable to meet the housing demand of its people.

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With the initiation of the RDP in 1995, the government increased

its allocation to the municipalities between 1995 and 2002. However, from the period 2004 to date the government has suspended these allocations and consequently has not been providing sufficient funds to the municipality to build houses for the people. This impedes the provision of housing to the intended beneficiaries. The role of the municipality as the implementing agency has been affected by lack of funding. About 90% of the key informants indicated that some projects have been blocked and others have gone several years without completion due to lack of funds, examples being the Ntselamanzi and Alice Golf course housing projects run by the Buffalo City Metro Municipality. These projects have been severely affected due to financial difficulties. However, all efforts to overcome this stumbling block are being undermined by key factors that are entirely avoidable such as corruption and financial mismanagement.

Key informants further argued that lack of end user finance is one of the contributing factors in housing delivery. The unavailability of end user finance, especially for low income households, impedes the ability of many households to access adequate housing even though they might be able to afford it. They agreed that housing delivery is essential to improve the lives of ordinary citizens. The unavailability of end user finance, the need for bridging finance for developers and a lack of institutional sources or funding for bulk infrastructure provision, all presented enormous challenges, which were sure to persist circumstantially.

Financing urban housing remains the greatest challenge in the post-apartheid era. Self-help constructions can help to strengthen community-based organisations, and this helps the poorest to be involved in grassroots organisations and community decision-making.

Financial rigor might be beneficial in order to strengthen community processes in housing delivery. Community participation becomes a key to socio-economic development, particularly when the government has limited administrative and financial capacity to service all sectors of the population.

5.0 CONCLUSIONS AND PROPOSITIONS

It is evident from the analysis of the theoretical and empirical evidence that the Eastern Cape Provincial Government needs to speed up the process of adequate human settlement. Some of these challenges could have been averted if the beneficiaries meaningfully participated in the initial human settlement planning process. Overall, one infers that women's roles in housing development cannot be fully understood by examining their roles at the implementation level only. An analysis of their roles in decision-making, implementation, post-implementation such as monitoring and evaluation, and the various aspects related to housing is absolutely necessary in order to fully understand their plight. Therefore, the discrepancy between policy and practice is critical and needs urgent resolve to involve women in all stages of the policy cycle. At the helm of policy level, issues of integrated development planning needed to be considered in human settlements, and the roles of the housing department and other government agencies providing housing should be further clarified.

It cannot be emphasised enough that women are very active and important players in society and their exclusion from decision-making, be it housing, especially human settlement or the mainstream economy, will do more harm than good. The legacy of apartheid and the stubborn stereotypes created should be avoided and done away with to maximally increase the representation of women in decision-making processes of the state in all spheres of government. Already, in post-apartheid society, women involvement in decision-making is crucial, but that needs to be accelerated so that their representation is significantly acceptable. This is possible if women are recognised, equipped with technical and functional skills and empowered to take ownership of the housing projects through a bottom-up approach. I argue that women should be incorporated in the decision-making system throughout all stages of the policy cycle (policy making, implementation, monitoring and evaluation) to have tangible and intangible meaningful outcomes. This is achievable if the proper funding model is also brought to the equation.

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Policy constrained by capacity: Outcomes of a pilot project for implementation of the rural housing programme of the Chris Hani District, in the Eastern Cape

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Abstract

The National Housing Act (Act 107 of 1997) provides for considerably more than the construction of houses in the implementation of human settlement development programmes. However, the Act does not define alternative options, or how these could be implemented. Subsequently, almost all interventions have been providing RDP houses to beneficiaries – in a sense, under-utilising the flexibility of the legislation to meet differing needs of communities. The Breaking New Ground Strategy of 2004 and the Eastern Cape Housing Policy of 2010 gave detail to the intentions of the Act, emphasising diverse solutions and beneficiary choice. More than 4 360 beneficiaries in the Chris Hani District Municipality were engaged in the pilot project, using both survey and Participatory Action Research techniques. It was found that most beneficiaries do, in fact, want alternative built-environment options such as single-room six-corner'buildings, workshops, rainwater harvesting tanks and security fencing. A detailed and practicable implementation methodology called UM-ZI-CHOICE was developed. Although there was widespread beneficiary interest supported with a viable business plan, implementation was set aside. The modest increase in administrative and contractual complexity to meet individual household choice was seen as a hurdle. The research showed that the policy is relevant to rural households and is practically implementable. Wider rollout is justified, but requires sensitisation of personnel on the underlying policy motivations and effort towards attitudinal change of those driving implementation of the rural housing subsidy.

1.0 INTRODUCTION

Rural housing law and policy in South Africa provides for various interventions at household level, but projects that are implemented largely take the form of RDP housing units. The Breaking New Ground Strategy (DoHS, 2004) and the more detailed Eastern Cape Policy (EC-DoHS, 2010) are built on the premise that rural livelihoods can be strengthened through more diverse built-environment investments. The shift from houses to human settlement thinking is long-established international best practice, initially set out in the Vancouver Declaration on Human Settlements (UN-Habitat, 1976). The Declaration states that "Human settlements mean the total-ity of the human community, whether city, town or village, the social, material, organisational, spiritual and cultural elements that sustains it." Diversity of need is emphasised and is the crux of the human settlements approach, reflected in a statement from Breaking New Ground: "The dominant production of single houses on single plots in distant locations with initially weak socio-economic infrastructure is inflexible to local dynamics and changes in demand. The new human settlements plan moves away from the current commoditised focus of housing delivery towards more responsive mechanisms which addresses the multi-dimensional needs of sustainable human settlements" (NDH, 2004:9). The gap between human settlements policy and implementation practices are particularly troubling for beneficiaries in established rural homesteads, as they usually have roofed residential structures, but sorely lack homestead infrastructure. Rural households and rural subsidy use are thus the study focus, as it is in this domain that the RDP implementation approach is in starkest contrast with extant policies and strategies.

The BNG strategy is built on the National Housing Act (Act 107 of 1997). Although the title of the Act relates to housing, the Act makes provision for much more than just construction of the services and the top structures (i.e. the house). It

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refers specifically to the establishment and maintenance of habitable, stable and sustainable public and private residential environments to ensure viable households and communities (RSA, 1997). While the Act acknowledges the need for an integrated approach to housing development, it does not define exactly how this should take effect. The Eastern Cape Rural Housing Policy (ECDoHS, 2010) provides more detail in relation to use of the Rural Housing Subsidy. The policy sets out that choices may include the more conventional option of an RDP house, or alternatively, a range of other built forms including: upgrading of existing structures, fencing, alternative energy, improved water supply, water harvesting, and, beyond the individual household domain, joint investment in social structures such as footbridges, crèches, dipping tanks, etc. The fundamental tenet of the policy is that the opportunities for improving livelihoods are likely to be better exploited through alternative investments in the built environment as decided by the household, rather than the routine option of building a standard RDP house for each subsidy recipient. Various attempts have been made to respond to the diversity as policy intends, but these few projects have not provided the range of options set out in policy (DBSA, 2008).

Planning and implementing such an arrangement inevitably means more effort, time and cost than a routine RDP house-building programme. Providing choice on options means that every household must first be educated on the options, and their choices recorded, followed by implementation tailored for each beneficiary. This process demands extended facilitation, consultations and additional administration in construction implementation. These challenges provide some explanation for the defacto reality of the construction of simple RDP housing

units in South Africa despite policy provisions for alternative, more locally suitable investments. It also leads to several questions. What are these alternative solutions at the practical level of implementation? Do people want these alternative solutions? How do you facilitate the selection process? Can this be implemented within Government grant conditions? Presently the diverse solutions offered by the rural housing policy remain largely unused, and thus, the associated livelihoods benefits recognised internationally and in local policy are not realised.

1.1 Research Objectives
The research set out to understand the policy implementation challenges and to propose and test alternatives which can put the policy in practice. More specifically, the objectives were to:

- Assess and prioritise preferences and define practical built-environment solutions to give effect to the rural housing policy. These solutions must aim to maximise positive impact on rural livelihoods in the context of a sustainable human settlements framework.

- Undertake a representative quantitative survey of household preferences in relation to alternative use of the rural housing subsidy of 2000 households or more.

- Formulate implementation modalities which utilise the Rural Housing Subsidy, so the project is implemented using conventional contracting and/or the Enhanced Peoples Housing Process (EPHP).

A central challenge in achieving these objectives was to find a balance between meeting the strategic imperative in policy and the practical realities of implementation and construction. Greater choice demands more variation in

contracts, and as the implementation contract complexity increases, so do the facilitation, administrative and project management costs of planning and implementation. This has grant funding implications, as the subsidy amount and conditions are defined for RDP-type approaches which do not include for likely additional costs of diverse builtenvironment interventions. Furthermore, approval systems, administrative data modules and procurement arrangements would all be different, requiring internal departmental change and training. The imperative for local choice thus had to be balanced with cost-efficient modes of subsidy implementation.

2.0 THE APPROACH — MIXED METHODS USING PARTICIPATIVE ACTION RESEARCH AND QUANTITATIVE SURVEY
The research project was carried out within an existing rural housing subsidy project, and the research sites were not independently selected. Seven clusters in the Chris Hani District in the Eastern Cape included 10 061 beneficiaries in 83 villages. By their wide geographic spread across the district and the large number of households involved, the sample provides a representative picture of the Municipality and likely the rural areas of the Eastern Cape Province.

Participatory Research and Action Research, while distinct approaches, are often combined and have gained increased importance for solving real world problems. These approaches are planned with participation from people impacted by the outcomes of trial interventions (Bergold, 2007). Action research aims to change social reality based on insights into everyday practices obtained by means of participatory research involving research subjects, scientists, practitioners, service users, and others (Bergold & Tomas, 2012). The aim of this work was not just to generate

knowledge, but more importantly to practically improve the way housing programmes are implemented in rural communities of the Eastern Cape Province and in South Africa.

The interconnected project objectives required a cyclical approach using mixed methods. This allows for a ongoing adaptation of the approach based on emerging findings (Murata *et al*., 2015; Bhana, 2006). PAR has three key distinguishing epistemological tenets important for this work. Firstly, unlike quantitative and qualitative methodologies, PAR locates power horizontally between researchers and researched communities, who are viewed as co-researchers. Secondly, PAR seeks to address the question: Whose political interests does research seek to satisfy? It thus holds that an inquiry concerned with human development must necessarily engage with those concerned in dialogue. Thirdly, because of its emphasis on action, PAR views research not only as a science-making enterprise, but—as a methodology for productive work (Fals-Borda, cited in Barbie & Mouton, 2000:62). These three tenets were applied to guide the research processes. Three to four rounds of meetings were held in each community during the pilot project. This facilitated staged development of the technical content and social approach. Meetings involved ward councillors, ward committee members, chiefs, headmen, Community Development Workers, beneficiary, as well as non-beneficiary community members.

2.1 Stage 1 — Defining options and developing related technical and communication toolkits

The first stage was to identify a number of built-environment solutions that were responsive to rural homestead needs and relied on participative research methods. This was done in conjunction with the preparation of a facilitation and communication toolkit to enable beneficiaries to fully understand options and implications – both in relation to cost and to quality and design of the various options. Stage 1 extended for 18 months and involved 47 focus group sessions involving beneficiaries from two of the seven clusters, as well as technical and media experts. The participatory research approach was based on Kolb and Fry's well-known Experiential or Action Learning Cycle (Kolb & Fry, 1975) shown in Figure 1. The cyclical approach led to repeatedly improved draft technical responses, each with better-defined costs and more effective media. Observations and feedback led to various issues being identified and addressed in revisions.

Beneficiaries needed simple, understandable information, as the many permutations of choices were found to be overwhelming without a simplified framework. A major factor in formulating the options was practicality. A rollout at scale means that fieldworkers and facilitators would have to be trained to communicate content and collect and collate data. Even after a thorough selection process and a 2-day training session, the complexity around subsidy-use options called for a more rigid, menu type approach to providing beneficiaries with choices. A menu of options and media was then formulated, tested and improved through three rounds of action research to arrive at the final 13 technical options and the implementation support toolkit that was produced.

2.2 Stage 2 — Preference survey

The second stage of the work involved a quantitative survey of 4 363 households, following a full information exchange and an informed selection process using the work from Stage 1. This took place in the remaining 5 clusters. The data collected from this extensive information exchange process and subsequent preference survey provided a sound basis for drawing conclusions on the type and degree of interest in alternative options for use of the rural housing subsidy.

2.3 Stage 3 — Defining implementation modalities

The final stage of the work — developing suitable implementation modalities — was not research per se, but was developed based on the knowledge derived from the research processes in Stages 1 and 2. Implementation planning was consolidated into a Business Plan for each cluster, including both conventional construction contracting arrangements and implementation using the Enhanced Peoples Housing Process (EPHP). The EPHP strategy, and institutions and systems for implementing with EPHP, remained in draft form throughout the study with a resultant lack of clarity on some implementation

Figure 1: Experiential or action learning cycle (after Kolb & Fry, 1975)

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organisational issues. Where these were unclear, decisions on proposed implementation modalities in EPHP were discussed and agreed upon with the ECDoHS.

The final packages from Stages 1, 2 and 3 were finally compiled into a user-friendly implementation toolkit called the UMZI-CHOICE Toolkit.

3.0 RESULTS FROM STAGE 1 — OPTIONS DEFINITION PROCESS

In total, 142 people were involved in a facilitated process which developed and tested the first draft of the UMZI-CHOICE Toolkit. The initial cycle of consultations was held at Deberha and Zwartwater, and it became clear that basic literacy, numeracy and conceptual literacy in relation to funding and related technical options were major limiting factors. This led to the development of a set of modular options that could be combined to equal the value of an RDP house. The technical options included 13 choices presented with graphics on posters, simple cost estimates and a card-based selection game' to assist final choice-making. These evolved into the final options shown in Table 2 and the media in Figures 2 and 3 (refer also to the Annex). Effec-

tive information transfer to equip people to make informed choices was first attempted in the form of explanatory workshops with about 30 individuals. However, the facilitation time and complexity involved was excessive, so a multimedia toolkit was developed to support knowledge-sharing on options. Successful information exchange on options was later combined with the selection process in a series of showcase days in each village, supported with trained facilitators and a multi-media toolkit. The showcase days allowed for detailed explanations of the options using poster sessions, followed by an individually-facilitated selection board game. During the process, it was found that an explanatory video was required. A 28-minute video was thus developed that explained the policy and the rural housing subsidy and provided general information on the choices themselves. The Rand value of each option was estimated using completed, detailed designs which were quantified based on commercially applicable unit construction rates or detailed supplier estimates.

The selection game was developed as a decision-making support tool and provided a data collection

framework that facilitated analysis and implementation. The UMZICHOICE Game comprises a set of 13 laminated A5 cards, one for each technical option (see Figure 2 for an example). On one side of each card is the graphically designed picture of the option, and on the other, the related costs and sub-options. Details were explained to the participants by trained local facilitators, and beneficiaries were helped to make their decision by placing plastic coupons (i.e. 114 coupons or bottle tops, each representing R1 000, and thus equalling the subsidy total) on their preferred choices.

Use of the UMZI-CHOICE toolkit showed that the pace at which participants absorbed information and were able to understand their options varied. Support using the multi-media toolkit and trained facilitators to explain and answer questions was essential. Beneficiaries were enabled to select systematically and in accordance with their household needs, without being overwhelmed by choice or limited by low numeracy and/or literacy skills. Once participants had finalised their selection using the UMZI-CHOICE game, they were required to complete an Options

Figure 2: An UMZI-CHOICE poster

Figure 3: Game card for Option 3

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Option	Description	Price (ZAR)
Option 1	Standard 40m^2 **RDP house**, including foundation, plinth, blockwork, roof, doors, windows, ceilings, plaster, paint, gutters, water tank and Ventilated Improved Pit (VIP) toilet	114 000
Option 2	15m^2 **Six-cornered house**, including foundation, blockwork, roof, doors, windows, inside and outside plaster and paint	52 000
Option 3	Workshop (24m^2), including foundation, blockwork, roof, doors, windows, inside and outside plaster and paint.	58 000
Option 4	**2.1m Security fence**	
4a	90m total length	21 000
4b	20m total length	27 000
4c	150m total length	33 000
4d	pedestrian gate	2 000
4e	vehicle gate	3 000
Option 5	**1.2 m High Stock Fence**	
5a	100m total length	11 000
5b	150m total length	15 000
5c	pedestrian gate	2 000
5d	vehicle gate	3 000
Option 6	**Solar electricity unit**	
6a	type A3 – 250 Watt hrs/day (incl. installation)	9 000
	type A6 – 700 Watt hrs/day (incl. installation)	22 000
Option 7	**Solar water heater**	8 000
	pole and mesh fence around panel	2 000
Option 8	**Igadi garden water system**	27 000
	extra 5000 litre tank	6 000
Option 9	**Roofwater storage**	10 000
	extra 5000 litre tank	6 000
Option 10	**Household livestock unit**	
	basic structure	49 000
	310 broiler unit	10 000
	300-unit chicken layer unit	22 000
	4 breeding sow kit	18 000
	16 fattening pig kit	15 000
Option 11	**Container unit for small enterprise**	
	basic structure	40 000
	additional shelving (10m x 300mm)	4 000
	additional window and door	3 000
Option 12	Building materials (voucher system)	R20 000 MAX
Option 13	**Contribution to community facility**	Balance of subsidy

Table 2: Final options included in the UMZI-CHOICE process (rural housing subsidy of R114 000 as at 2013)

Selection Form and sign for the choices they had made. All results were entered into an XLS database, with originals held in a project archive.

The media set was developed in Xhosa and English, and the video in isiXhosa with English subtitles. In addition to the media, training manuals for trainers and facilitators were found necessary and were developed. A training course was also developed to teach trainee facilitators the processes to be followed when working as a field facilitator and help them develop the skills needed for engaging in communities. The final UMZI-CHOICE Toolkit resulting from the action research assignment includes:

- A2 advertising poster for up-coming community information meetings
- 13 x A1 posters explaining each option with the attached summary BOQ
- 28-minute Video providing informing on the options and selection process
- a guide for the trainers of field facilitators
- a manual for field facilitators
- an UMZI-CHOICE selection set (cards and coupons)
- detailed XLS spreadsheets with a Bill of Quantities for each option

The knowledge dissemination and related project selection processes required extensive preparatory social mobilisation. The project introductions to facilitate the full-scale UMZI-CHOICE process took place in a highly-politicised environment. Introductory and aware-ness-raising meetings involved

1 Introduction and awareness

Introduction of Project to Key Stakeholders	Briefing of Local and District Municipalities and other key stakeholders.
Community Introduction Meeting(s)	Public meetings in the various administrative areas (AAs) Local councillor in partnership with the DoHS.
Traditional Leader Briefing	The DoHS professional team to brief the Traditional Leadership of the area and invite participation on the PSC.
Establishment and Project Introduction Meeting with PSC	The Councillor/Ward Committee to facilitate election of a PSC based on AA or village representation. An introduction meeting for a) building PSC knowledge of the project and their role within the project, and b) planning for future activities.
Updating of Beneficiary List	The process of checking the status of beneficiaries on the Beneficiary List so the list is updated for future beneficiary screening.

2 Information campaign about options

Review and Confirmation of Option Details	Professional team engagement with Stakeholders and the PSC in making adjustments on the BoQ for each option to take account of local conditions & cost changes. • Workshop with PSC and stakeholders. • Approval by DoHS of final BoQ for each option
Selection and Training of Community Fieldworkers	An open application process for selection of fieldworkers from the relevant ward(s) and a five-day training course for those selected.
Community/Beneficiary Awareness Campaign	An intensive community awareness campaign specifically covering the choices available, and the PHP implementation process. Methods and tools used will include village meetings with beneficiaries, radio, and printed media.

3 Options selection process with board game/questionnaire

Beneficiary Survey for Option Selection using board game	Community Fieldworkers to conduct survey with each beneficiary household to determine their option selection using the `Option Selection Toolkit and Interview Process Guide'.
Beneficiary commitment to options in signed data sheet	The beneficiary is helped to fill and sign a formal commitment to the selected options, which will go into the Business Plan.

Table 3: Sequence of activities to inform stakeholders and facilitate choice

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dozens of community, municipal council, traditional leader and ward committee meetings, resulting in a streamlined sequential process to raise awareness, manage political realities in relation the project and ensure knowledge dissemination and informed selection.

4.0 RESULTS FROM STAGE 2 — PREFERENCE SURVEY AND OUTCOMES

The preference survey involved 4 363 households classified as beneficiaries by the ECDoHS and invited to participate in the UMZI-CHOICE process. The video was shown, village show-case days were held at which the details of the options were explained, and choices were made. Of those invited, 503 (11.5 %) did not attend, or data entered was incomplete. A total

of 3 860 participants made a final choice based on their individual priorities. The outcomes on preferences and choice are summarised in Table 4.

A total of 2 080 beneficiaries who went through the full UMZI-CHOICE process chose options, while a total of 1 780 selected an RDP house (see Figure 4 for further analysis of the choices). There is clearly a significant uptake of options, with the majority (54%) choosing an alternative option to an RDP house (presented graphically in Figure 4). It is thus evident that people want and need choice. Many beneficiaries preferred options other than a standard RDP house to meet their perceived needs. The highest responses were for roofed structures, fencing (both security and stock

fencing), and roof-water tanks.

Note: For all except Option 1a (RDP House), beneficiaries will select more than one to achieve the total subsidy amount.

All options presented to beneficiaries drew some response except for that of a community facility. No beneficiary was interested in pursuing this option, rather prioritising their own needs and eliminating the risk of an extended community process in coming to agreement. Furthermore, not everyone in the community is a subsidy beneficiary, meaning that the social structure is provided for all, but is funded only by the beneficiaries.

The data reveals a strong preference for a roofed structure of some sort (between 68% and 88% across

Area	Options	RDP house	Nonparticipant	TOTAL
Chris Hani Heritage	489	340	172	1 001
Vuyisile Mini Heritage	510	384	94	988
Lubisi	433	478	90	1 001
Sakhisizwe	648	578	147	1 373
Total	**2 080**	**1 780**	**503**	**4 363**

Table 4: Summary of beneficiaries who selected 'options' rather than an RDP house
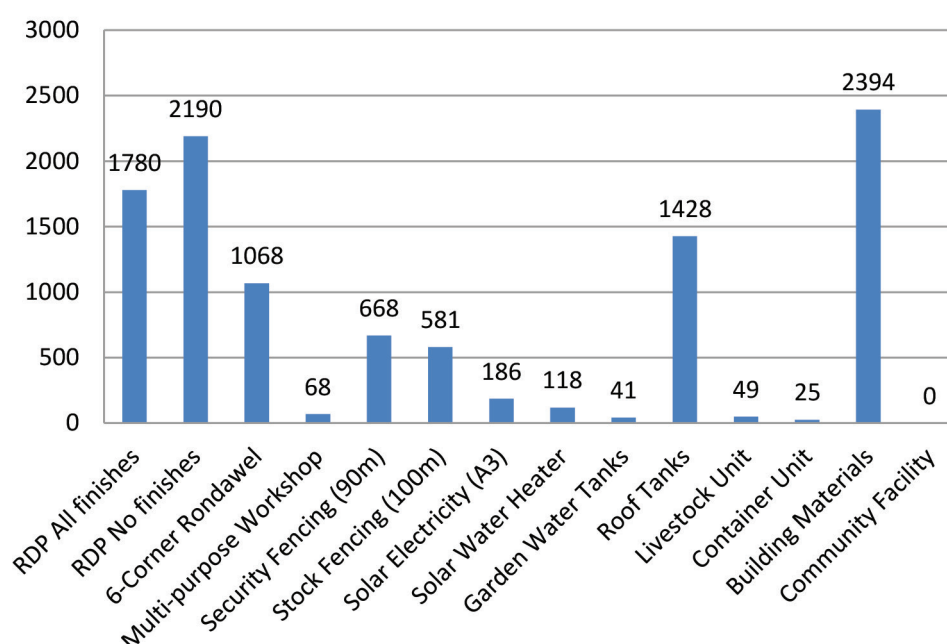

Figure 4: No. of beneficiaries choosing type of option (n=3860)

the four sites). This means that the bulk of the Government Housing Grant would still go into housing as such, but instead of standard RDP houses, there would be significant investment in alternative housing solutions, including the six corner (one-room used primarily as a separate bedroom), the multipurpose workshop and a partly-completed RDP house. At the time of the survey, the option of an RDP house without finishes allowed for savings to be made by leaving out ceilings, internal plaster and paint, thus leaving some of the subsidy amount for other items. Most used this small saving for tanks and fencing rather than RDP house finishes. After the consultations were completed, however, this option was excluded following a provincial MEC directive to only provide fully completed RDP houses. The incomplete RDP house option thus had to be removed from the final UMZI-CHOICE Toolkit.

The significant number (54%) who chose options allowing for a number of alternative investments confirms the need for alternative choices. It is evident that alternatives in the form of six-corner single room dwellings, garages, water tanks and fencing are the most popular options for the majority who did not choose a full RDP house.

5.0 IMPLEMENTATION MODALITIES AND CHALLENGES

Two contracting approaches for implementing the rural housing subsidy were developed. This involved conventional construction for RDP houses and use of the EPHP mechanism for the more diverse options defined through the UMZI-CHOICE process. These combined rollout modalities were extensively workshopped and compiled in detailed Business Plans for each cluster. The organisational collaboration on each site was addressed in detail, particularly regarding community facilitators and community representation arrangements, to minimise confusion where parallel contracts were in place in any village. The Business Plans contained detailed information on available beneficiary lists, implementation timelines, cashflow projections and cost implications in managing both the conventional RDP contracting process and the EPHP process. The UMZI-CHOICE Toolkit contained detailed construction drawings and digital Bills of Quantities, enabling immediate procurement and implementation at scale. While it is possible to implement the alternative choices using conventional contracting arrangements, on assessment it was established that

the EPHP process is better-suited. EPHP is people-centred, has a small amount of additional funding available for the additional facilitation tasks and is readily adapted to implement diverse solutions. Two EPHP implementing NGOs were briefed in detail on UMZI-CHOICE, and both expressed interest and willingness to proceed with the implementation for those households who chose options. However, only the RDP avenue was pursued, and the policy-responsive UMZI-CHOICE process was set aside.

6.0 CONCLUSIONS — RELEVANT POLICY UNDERMINED BY HESITATION TO IMPLEMENT

The research set out to establish if there is a need for choice in how the rural housing subsidy is used, and then to define how this can be facilitated and implemented. The evidence shows unequivocally that people do want choice, and that existing policy does respond to the real needs of rural households. Of the 3 860 people who were surveyed, 54% chose alternative investments in the various options, with most selecting alternative roofed structures, along with other livelihoods support infrastructure such as water tanks and fencing. The findings further show that implementation is socially, technically and financially practical, using established conventional contracting, as well as EPHP approaches. These can be applied singly or in parallel at the same site. The financing and organisational modalities for this have also been defined within the existing RDP and EPHP subsidy ceiling amounts. Some simplification in the rollout approach is possible by eliminating those options which showed low-uptake in the pilot project, and possible grouping into four or five packages with fixed components. But even without simplification the findings show that the approach is practica-

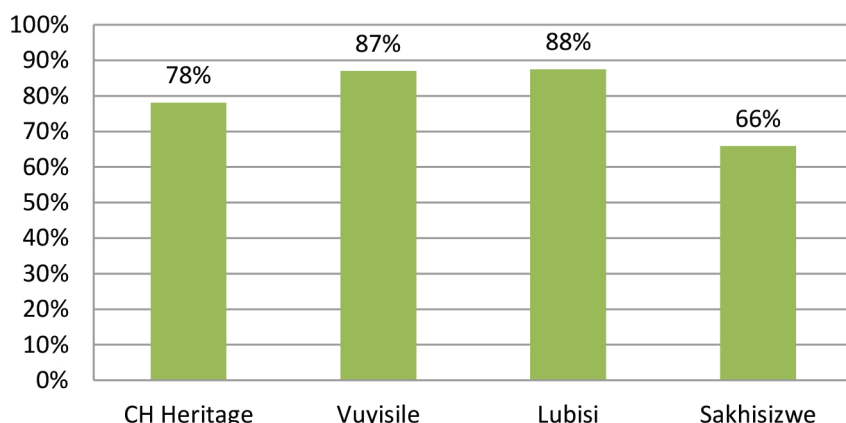**Beneficiaries choosing a roofed structure of some sort (n=3860)**

Figure 5: Percentage of beneficiaries choosing a roofed structure of some sort

ble in all respects as presently set out in the UMZICHOICE Toolkit. The limitation to rollout was not technical, social or financial, but a lack of understanding of the policy motivations by key administrators reflected in wider organisational reticence to move from a more familiar and routine housing paradigm to the policy-compliant human-settlements paradigm. This reflects a conceptual retreat to the pre-Breaking New Ground era of uniform housing units; motivated mainly by the perceived increased workload and the challenge of administrative adaptation. Progress on implementing the rural housing policy thus requires re-invigorated high-level support driving the policy agenda, combined with strategic communication interventions targeting key administrators and implementation stakeholders in the sector.

Acknowledgments

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Innovative ways for enhancing public service delivery in rural South Africa through citizen engagement

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Abstract

The aim of this research paper is to identify innovative ways of enhancing service delivery in rural communities that could deliver effective and efficient services to the South African public. The current economic realities, the effects of globalisation, the potential for technological innovation and the public's demand for better services have led to incessant protests in various municipalities. These upheavals are in spite of the fact that government is vigorously pursuing the provisions of the constitution in chapter 7, Article 152 which provides in sections (b, c, d) that; it will ensure the provision of services to communities in a sustainable manner; it will promote social and economic development and will promote safe and healthy environment. The study utilizes the dynamic service delivery and politics of participation theories which took the form of a literature review, analysis of statistics already produced by other researchers, official publications and correspondence, newspaper surveys, pamphlets and newsletters, dissertations and theses. Information from the internet was also employed in this study. The study examines the theoretical underpinnings of citizen engagement in relations to service delivery and how it can lead to better development of results. It also explored citizen engagement, as well as related concepts such as transparency, accountability, responsiveness and inclusiveness. It looked at the concept of the feedback loop, and the differences between intrinsic and instrumental approaches. It examined the crucial role of socio-political context and the enabling environment, as well as the concept of strategic and tactical approaches to citizen engagement.

Key Words: Citizen Engagement, Service Delivery, transparency, accountability, responsiveness and inclusiveness, feedback loop, intrinsic and instrumental approaches, socio-political context, strategic and tactical approaches.

1.0 INTRODUCTION

The challenge of most African governments and emerging economies has been how to harness resources to satisfy the genuine needs of deprived and underprivileged communities. Historically, urban and rural development agendas have been crafted and presided over by bureaucrats whose entrenched positions have often been orchestrated by development-driven rather than people-driven.

In this era of democracy, the demand of communities on service delivery such as water, electricity, sewerage and sanitation, solid waste services and toilets, road infrastructure, schools, hospitals, food, access to markets, employment, transportation, trade and finances has remained cardinal in the measurement of government performance (Mansuri & Rao, 2013; Sen, 2008; Stewart, 2010; Melo & Baiocchi, 2004).

It is for these reasons that the constitution of the Republic of South Africa, chapter 7, articles 152 – 153 stated clearly the objects of local government and its duties in relations to basic service delivery in the municipalities.

Post-apartheid South Africa faces a major challenge in ensuring that municipalities provide optimal and professional services to citizens of heterogeneous cultures. This is succinctly captured by (Mufamadi, 2005: 1) when he said that the challenges we face, therefore is one of ensuring that all municipalities develop the requisite capacity to translate those resources into instruments with which to confront problems of poverty and underdevelopment.

This underscores the importance of service delivery at ministerial level. The monitoring of service delivery needs through effective governance and service administration is clearly crucial. This paper is based on the belief that this is only possible through enhancing leadership in the local government sphere.

In post-apartheid South Africa, access to effective public services is no longer seen as an advantage enjoyed by only a privileged few in the community, but as a legitimate right of all residents, particularly those who were previously disadvantaged. This stance emphasizes "service to the people" as parameter for local government transformation. Thus, one of the most important indicators in assessing the

transformation of local government is the experiences and perceptions people have of service delivery in their day-to-day lives, more specifically whether they perceive an improvement in the services delivered to them. The implication of this is for local government to transform words into deeds, and thus to prioritize and satisfy the needs of the communities they service.

Attempting to provide a framework for people-centred public service delivery, the South African government introduced Batho Pele (derived from a Sesotho word meaning "putting people first") in 1997 (http://www.dpsa. gov.za/batho-pele/index. asp). This initiative strives towards moving public servants to become service orientated, to pursue excellence in service delivery and to commit themselves to continuously improve service delivery. It also sets the principles for transforming service delivery with regard to consultation, service standards, access, courtesy, information, openness and transparency, redress and value for money. These principles are required, since it is argued that a transformed local government needs to be measured against its commitment to continuous service delivery improvement.

Evidently, it could be ascertained that citizen engagement has to play a pivotal role in the implementation and the achievements of the municipalities in relations to service delivery in the country. On the basis of the achievement of health, sanitation, education, eradication of poverty, infant mortality and all the efforts made to achieve the millennium targets, it can be squarely posited in Grandvionnet's (2013) framework of socio-political context and the 5 constitutive elements of citizen action, state action, civic mobilization, citizen-state interface and information. In each of the elements under consideration, we clearly see the interplay of state action and citizen action that create awareness, enabling environment, capacity and commitment for development in attaining sustainable service delivery through citizen engagement.

2.0 LITERATURE REVIEW

There have been several discussions and discourses relating to the impact and activities of municipalities and local government in delivering efficient and effective service delivery outcomes to the communities they serve. Researchers have expressed their varied opinions depending on their theoretical leanings. Public participation, social learning, empowerment and sustainability are the key components of the people-centred development approach that currently guides the delivery of municipal services in South Africa (Davids, 2005). The approach focuses on municipalities "… working with communities to find sustainable ways of meeting their needs … and improving the quality of their lives." (White Paper on Local Government: Section B, Ch 1.). According to Theron (2005a: 138), a municipality's ability to identify and meet the needs of local communities cannot be driven by a "paternalistic, top-down, [and] prescriptive" approach or one that has been defined by social scientists or professionals (Theron & Wetmore, 2005: 155). An integrated approach to development planning is required. Theron and Wetmore (2005) state that this is achieved through role-players having an improved understanding of the local situation, as it is created by their own social reality. They have the ability to identify it, and through conscientization, they have the ability to initiate change to the situation.

According to Solanes and Jouravlev (2008: 20), one of the main reasons for loss of credibility of local government, is their inability to meet the basic needs of the population they are meant to serve. The authors attribute this to the inability of municipalities to generate and implement appropriate service delivery policies (Solanes & Jouravlev, 2008: 9; Koma, 2010). Where there are policies in place, inefficient administrative and management practices make them redundant. One of the key findings from the 2006 United Nations World Water Development Report (UNWDR2) was that in many countries the "water crisis" was more of an institutional crisis than a shortage of water as such. The report attributed the water crisis to the "… mismanagement, corruption, lack of appropriate institutions, bureaucratic inertia and a shortage of investment in both human capacity and physical infrastructure" (UN-Water, 2006:46).

The idea of civic participation is as old as the idea of democracy (Elster, 1998); it has existed in many different cultures throughout history. In ancient Athens, policy decisions were made deliberatively in public settings, with every male citizen given the opportunity to state his point of view.

The modern theory of participation was first coherently articulated in the 18th century by Jean-Jacques Rousseau, author of The Social Contract. Rousseau outlined a vision of democracy in which equal citizens assemble to make decisions in an interdependent, deliberative manner, to uncover the "general will" — that is, to forge a policy in which benefits and burdens are equally shared (Pateman, 1976).

Community development and government decentralization thus have a common intellectual history, stemming from a belief that participation has both intrinsic and instrumental value. Participation in decision making, Maine believed, makes individuals into public citizens by training them to think in terms of the public good rather than merely private interests; it builds the capacity for collective action and what modern social theorists would call "agency." **127**

Participation also has instrumental value in developing the ability of citizens to hold the state and markets accountable and to influence decisions that affect their lives.

After independence, countries in Latin America modified these structures to conform with the more federalist notions from France and the United States. In Brazil, for instance, the First Republic (which followed the centralized empire established immediately after independence) had pronounced federal features, but provided little or no support for local governments or municipalities. With its collapse, in1930, decentralization gave way to centralized institutions (Melo & Rezende, 2004) and, paradoxically, "municipalism" became a hallmark of the more centralized developmentalist period.

3.0 RESEARCH QUESTIONS

1. To what extent has local government succeeded in attaining optimum levels in service delivery?

2. To what extent has the public been involved in participating in service delivery processes?

3. In what ways has the outcomes of service delivery satisfied the public or the community members in the municipality?

4. How can the service delivery processes be improved through innovation and citizen engagement?

4.0 OBJECTIVES

The main objectives of the study is to identify innovative ways of enhancing service delivery in rural communities that could deliver effective and efficient services to the South African public. More specifically the paper seeks:

1. To find out about the extent to which government has succeeded in attaining optimum levels in service delivery

2. To ascertain the extent to which

the public has been involved in participating in service delivery processes

3. To establish the ways in which the outcome of service delivery has satisfied the public or the community members in the municipality

4. To suggest ways by which service delivery processes can be improved through innovations and citizen engagement.

5.0 THEORETICAL FRAMEWORK

This paper utilizes the dynamic service delivery theory in combination with the public participatory theory to address the issues surrounding public service delivery through citizen engagement in rural communities in South Africa.

While researchers and decision-makers increasingly recognize the importance of public participation in service delivery decision-making, there is less agreement about how to involve the public. One of the most controversial issues is how to involve citizens in producing scientific information. Although this question is relevant to many areas of service delivery policy, it has come to the fore in watershed management. Increasingly, the public is becoming involved in the sophisticated computer modelling efforts that have been developed to inform watershed management decisions. These models typically have been treated as technical inputs to the policy process. However, model-building itself involves numerous assumptions, judgments and decisions that are relevant to the public. This paper examines the politics of public involvement in watershed modelling efforts which is complemented with the dynamic service delivery theory.

The Dynamic Service Delivery (DSD) platform is an approach for public institutions to build organisational adaptability and project ex-

ecution capability. It allows institutions to accelerate and de-risk their transformation activities to ultimately deliver greater returns to their stakeholders. The dynamic service delivery theory attempts to discover the embedded new ways of working and aligning strategy, culture and operations to capabilities required for organisations to be 'future-fit'. By being able to rapidly adapt and capitalise on changing market and technology trends, institutions are more likely to survive and even flourish. Public institutions must embrace a shift in their organisational planning and execution processes in order to improve their overall 'adaptability', whilst satisfying the rapidly changing needs of the public'. Organisations are finding their clear vision and organisational alignment around strategy and projects:

- Faster execution at a cheaper cost — more efficient ways of cutting expenditure.

- A different, dynamic and collaborative way of working.

- Solutions delivered in line with changing customer and community needs.

- Accelerated delivery through decision making with a breakthrough mind-set.

- Reduction of unnecessary activities.

- Innovation embedded into the organisational DNA.

- Technology enabled transformation methods.

6.0 METHODOLOGY

In this paper, qualitative data was analysed through content analysis which looked at documents, text or speeches to articulate the themes that emerged. Data was collected through secondary sources such as official documents, textbooks, journals, articles, newspaper articles, essays and internet sources. The study utilized the dynamic service delivery and politics of participation

theories to analyse the innovative ways for enhancing public service delivery in rural South Africa through citizen engagement. This took the form of literature review, analysis of statistics already produced by other researchers, official publications and correspondence, newspaper surveys, pamphlets and newsletters, dissertations and theses, as well as information from the internet sources. These were backed by ten face-to-face interviews as an exploratory study. Ten respondents were purposely selected from 5 clusters of Alice, Fort Beaufort, Middledrift, Debe and Lower Gqumahashe in the Raymond Mhlaba Municipality (formerly, Nkokonbe Municipality).

7.0 CITIZEN ENGAGEMENT

In democracies, citizen engagement (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013) is a basic principle because it is understood that governments, at their essence, derive their authority and power from the people. Governments hence have an obligation — and not just the discretion — to respond to their needs. In a democracy citizens have both the right and the responsibility to demand accountability and to ensure that government acts in the best interests of the people.

In other contexts, citizen engagement (Gaventa, 2013; Mcneil, 2016) is seen as part of the social compact between citizens and their delegated representatives. The social contract, in turn, derives from notions of human and citizen rights. Citizen engagement is understood as the right of people to define the public good, determine policies by which they seek the good, and reform or replace institutions that do not serve that good.

Citizen engagement (Menocal, 2013) is the "two-way interaction between citizens and governments or the private sector that give citizens a stake in decision-mak-

ing, with the objective of improving development outcomes."

The spectrum of citizen engagement, as illustrated here, includes government sharing information with citizens, and citizens drawing on this information to take action and communicate, including providing feedback to government, both solicited and unsolicited (Fox, 2016; Madan, 2004; Fox & Paixoto, 2016; Meier, 2014; McGee & Calitz, 2013; Galtung, 2013; GovLoop, 2015)

Key to this definition is the responsiveness of government to citizen voice. While the scope of citizen engagement includes consultation, collaboration, participation and empowerment, citizen engagement requires transparent and effective mechanisms by government for responding to citizen voice. The end game for citizen engagement is to improve the accountability of governments and service providers, thus closing the feedback loop.

An essential understanding running across these facets is that citizen engagement is highly embedded in the nature of the political and governance context and in existing power relations, or the local context. It needs to be understood as a core component of any governance system. It requires active participation of both citizens and decision makers, and is an integral part of governance processes, above and beyond individual projects or one-off feedback (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013).

Citizens — are understood as the ultimate client of government and/or development institutions' and private sector interventions in a country. In this context, the term citizen is not used in a legal sense, but is understood in the broad sense of referring to all people in a society or country in an inclusive and non-discriminatory way. Citizens can act as individuals or organize themselves in associations and groups.

Transparency — any attempt by state or citizens to place information or processes that were previously opaque in the public domain, accessible for use by citizen groups, providers or policy makers.

Accountability — broadly speaking, accountability refers to the process of holding actors responsible for their actions. More specifically, it is the concept that individuals, agencies and organizations (public, private and civil society) are held responsible for executing their powers according to a certain standard (whether set mutually or not).

Responsiveness — the process by which government designs and implements public policy based on received citizen input and preferences. Responsive governance is when citizen input actually leads to changed outcomes, rather than just being heard.

Inclusiveness — a process by which the voices of often-excluded or marginalized groups are included in the governing process (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013)

Arguments have been made that throughout history, engaging citizens has led to more sustainable, open and equitable governance, and in the end this works to the benefit of all citizens, including the most marginalized.

Recent research has shown that citizen engagement initiatives can:

- Increase transparency and citizen trust in government;
- enhance government legitimacy;
- improve outcomes of macro-economic policies; and
- raise the frequency and quality of government responsiveness.

In practice, municipalities have adopted participatory budgeting for extended periods, beginning more than two decades ago. Municipalities with participatory budgeting **129**

have allocated a larger share of funding to sanitation and health services, reducing infant mortality rates while holding capital budgets constant. While participatory budgeting processes vary widely in practice, on balance their positive impacts are clear. Studies find that participatory budgeting encourages authorities to provide services that meet needs of otherwise underrepresented citizens, and the deliberative process also creates frequent citizen checks on promised governmental impacts (Fox, 2016; Madan, 2004; Fox & Paixoto, 2016; Meier, 2014; McGee & Calitz, 2013; Galtung, 2013; GovLoop, 2015).

In Uganda, local civil society organizations worked with local health workers to promote a local compact between communities and local health works in dozens of Ugandan villages. After extensive piloting, they tested a community monitoring process designed to encourage voice, to avoid elite capture and to facilitate periodic dialogue with health workers. The impacts were dramatic.

In Indonesia, a nation-wide rural community development program followed a strategy that created enabling environments for community-level participatory budgeting and oversight, mainly for local public works and later for health and education programs. The program led to increased consumption and access to health care in poor households and reduced poverty in all the sub-districts where it operated, especially in the poorest and most remote communities — though members of marginalized groups did not benefit as much as others.

Citizen engagement can take many different forms. From the shift towards democracy in Africa, Asia and Latin America starting in the 1980s, to the mushrooming of citizen-led initiatives to hold those in power to account, there is now a real wealth of experience that we can use to reimagine the role of engaged populations in political processes and to redefine the very substance of democracy.

Citizen engagement as the "two-way interaction between citizens on the one hand, which include organized civil society and the private sector, and governments on the other, in a way that gives citizens a stake in decision-making processes, with the objective of improving development."

Forms of citizen engagement in the developing world (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013) can include a plethora of activities, for example elections and referendums, social movements, protests, constitution-making processes and other public consultations, budget monitoring, citizen satisfaction surveys, report cards and charters, citizen's juries, community monitoring or management, participatory planning, social a dits and so on.

Elections, for example, are perhaps the most recognizable mechanisms that citizens have to exercise voice and hold office-holders to account — and they have become almost universal.

Accountability frameworks include the long and short routes to accountability. Elections in this instance represent the long road to accountability, which refers to the political process through which citizens try to influence politicians through voting for their political representatives and deciding whether or not the politician has adequately represented them.

Growing dissatisfaction with the effectiveness of elections in channelling citizen voice and engagement (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013) has led to increased reliance on other, perhaps more interactive mechanisms of engagement, based on increased dialogue, collaboration and partic- ipatory decision-making among a diverse set of stakeholders, including both within civil society and the state. Since the 1980s, so called 'invited spaces' of participation such as, for example, participatory budgeting and constitution-making processes, have become very prominent. For instance, constitution-making processes have proven to be important moments of participation to redefine the very nature of a state and its relationship with its citizens. Over 40% of all constitutions in place by 2008 required approval by public referendum. Examples of constitution-making processes that were particularly participatory and inclusive include: South Africa in the early 1990s and Colombia in 1991. More recently, Kenya in 2010 and Tunisia in 2014 have adopted new Constitutions through extensive participatory mechanisms as well.

The role of organised civil society through non-governmental organisations, or NGOs, has proven instrumental in channelling citizen voice, in engaging with political parties, elected representatives and other relevant actors in the kinds of invited spaces highlighted above. Civil society has also emerged as a counterweight for accountability. This can be seen in the growth of NGOs in the past fifty years, which has been absolutely exponential. As Frances Stewart, a prominent UK academic has reminded us, it has often been channelled in ways that are more contentious, disruptive — and even violent. This reflects profound dissatisfaction with the quality of voice and representation, in both democratic and more authoritarian settings. The uprisings across the Middle East and North Africa over the past few years, and the eruption of protest movements in countries as diverse as Brazil, Egypt, India, Turkey and most recently Mexico, are all examples of this (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013).

7.1 The concept of intrinsic vs. instrumental citizen engagement

Within most governments and donor organizations, there is scepticism over the intrinsic case for increased participation. The debate is whether the primarily socioeconomic concept of development should be expanded to include these principles as objectives in and of themselves, or whether they should be seen as instruments or mechanisms to achieve other developmental goals.

Nobel laureate Amartya Sen (2008) has argued very strongly that citizen engagement is absolutely intrinsically valuable, as it represents a key component of human capability. For Sen, participating in one's development through open and non-discriminatory processes, having a say without fear, and speaking up against perceived injustices and wrongs are fundamental freedoms that are integral to one's wellbeing and quality of life.

7.2 Instrumental value

As Mansuri and Rao (2013) have highlighted, citizen engagement is now seen as a means to achieve a variety of development goals — ranging from better poverty targeting, to improved public service delivery, to better and maintained infrastructure, to social cohesion, to improved government accountability. For example, having communities involved in the management and monitoring of services can help to ensure that they meet those communities' needs more effectively, and that local problems or gaps are more efficiently identified and dealt with.

A central challenge for governments and the donor community is how to move from innovative efforts of citizen engagement that can be quite effective, but are still quite scattered and small-scale, towards efforts that are much greater in scope and can have greater socioeconomic

impact (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013).

7.3 The concept of feedback loop

Supporting a two-way flow of information, not only for citizens, projects, and project managers and implementers, but also for governments, service providers, and CSOs, should foster more substantive citizen involvement by reducing information asymmetries and facilitating recurring interaction throughout the development process. Examples like Community Score Cards or Public Hearings and Social Audits can bring together citizens and communities with local level government officials, politicians and service providers to exchange information and views on how well services are performing and to agree on joint action plans to address gaps or problems identified (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013)

7.4 The concept of "social accountability

Social Accountability can be defined as "the extent and capability of citizens to hold the state accountable and make it responsive to their needs". Citizen Engagement as the interplay of five constitutive elements.

7.5 Typical citizen engagement process

A typical CE process (Fox, 2016; Madan, 2004; Fox & Paixoto, 2016; Meier, 2014; McGee & Calitz, 2013; Galtung, 2013; GovLoop, 2015) is one that provides information, which triggers Citizen Action, which, in turn, triggers state response. This depicts citizen engagement as the interplay of 5 elements, namely citizen action, state action, civic mobilization, the citizen-state interface and information. First, we must recognize that both citizen and state actions are fundamental to citizen engagement. The role of the state is crucial, as it provides, or hinders, the enabling environment

for information and association. It offers diverse avenues for accountability — political accountability, administrative accountability — and can also actively support and even initiate citizen engagement approaches. As importantly, its level and capacity to respond to citizen demands will determine the outcomes of citizen engagement initiatives.

Citizen engagement is not the state against citizens or Citizen Engagement is not the state against citizens or citizens against the state. Many citizen engagement approaches focus on building supportive pro-accountability networks across "state" and "society". In a typical power relation shows the State above the Citizens. This represents the "power imbalance" at play between state officials and citizens. This is important, as power relations are at the core of Citizen Engagement processes, and even more significant for marginalized citizens.

Information (Bjorn-Soren, 2016) is a crucial ingredient for Citizen Engagement. However, in most cases, it also needs to be accompanied by civic mobilization and an interface between state and citizens to yield action and concrete outcomes. Civic mobilization is most often facilitated by intermediaries such as NGOs to spur citizens into action and support their demands vis-a-vis the state. But State officials also need to be mobilized. Therefore, an interface is necessary to allow both citizens and state actors, or coalitions that cut across these two types of actors, to interact. Third, there is no generic, linear sequence among these 5 elements. Information may be made available by state action or through civic mobilization, and may be generated or exposed by citizen action. Additionally, mobilization may be spurred by information or precede it, and creation of the interface may be the starting

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point or endpoint of the intervention.

Fourth, the nature of the element itself matters. For instance, the content of information, how it is communicated, and by whom, are all important.

Fifth, neither the State nor Citizens are Homogenous or Exclusive Categories. Incentives differ, for instance, for elected or non-elected officials, elites and non-elites, and civil society groups that represent public interest, and those that represent narrower "special "interests.

Lastly, because citizen engagement processes are interactive, citizen engagement approaches will generally be required to dynamically reassess entry points and trajectories, support building blocks for future citizen engagement interventions, and carefully assess risks and trade-offs. The socio-political factors that influence the effectiveness of citizen engagement processes. Citizen Engagement is shaped by the nature and interactions of political and civil society, both between state and society, and within society. Cultural norms, global factors, and the prevailing political settlement also matter (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013; Bjorn-Soren, 2016)

8.0 POLITICAL SOCIETY

The nature of the "state", that is, the actors and dynamics within the "political society", are as important — if not more so — than civil society in explaining the effectiveness of Citizen Engagement (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013) The two most important factors here are the commitment and capacity of bureaucrats and elected officials to promote and respond to citizen demands, and the nature of the rule of law.

Another socio-political factor is the State-Society relationship. To make accountability claims, there must first be an assumption about the responsibilities of the state, as well as the entitlements of citizens. Hence, the nature of the existing "social contract", as well as the history of state-society relations, shapes Citizen Engagement mechanisms and outcomes.

The state of Civil Society is yet another important socio-political factor. Simply put, the technical capacity, networking ability and legitimacy of Civil Society Organizations are fundamental for Citizen Engagement to be effective.

Cultural factors matter as well. For instance, accountability is understood differently depending on the prevailing norms. Furthermore, global factors, including international initiatives such as the extractives industries, transparency initiative and the role of international donors, also influence the effectiveness of citizen engagement.

This framework identifies the drivers of the 5 intervention-based factors that were discussed. The first is Citizen Action. The drivers of Citizen Action include awareness and salience of the issue to citizens, intrinsic motivation, efficacy, capacity for collective action and cost of inaction.

The drivers of State Action include: awareness, ability to resolve the issue, official attitude toward engaging with Civil Society demands, intrinsic motivation and cost of inaction. Here we should note that the cost of inaction often differs for elected and non-elected officials who respond to different incentives.

The drivers of information are accessibility, framing of the information and trustworthiness.

The drivers of interface include awareness, credibility, mediation and capability

The drivers of civic mobilization include awareness, capability, and networks and credibility.

Furthermore, there are no universal best practices for Citizen Engage-

ment. Context is critical, and, accordingly, citizen engagement approaches need to be tailor-made. The framework we have proposed (Menocal, 2013; Mcneil, 2016; Grandvionnet, 2013) does not provide simple answers on when and how citizen engagement leads to outcomes, but it does shine a light into the black box of "context", thus providing us with a systematic way to assess a given context in order to design, implement and monitor citizen engagement programs most effectively.

8.1 Tactical and strategic approaches

Tactical approach (Fox, 2016) is citizen engagement that is short term, utilizes one tool/tactic and is limited to local level. The strategic approach is a citizen engagement that is long term, utilizes multiple tools/tactics, and it is scaled beyond the local level.

9.0 DISCUSSION OF FINDINGS

9.1 Municipal efficiency and responsiveness

The degree to which local governments are both efficient and responsive to local needs can vary greatly within a country. Optimists claim local governments are more responsive to citizens than centralized government institutions, arguing that they increase citizen participation and governmental accountability, while improving allocative efficiency and generating greater equity in service distribution. Others (Brikke, 2000: 45; Davids, 2005: 20; Theron, 2005: 111; Solanes *et al.*, 2008: 20) have argued that local governments are too susceptible to elite capture — that is, the process by which powerful individuals divert state resources to their own ends. They also argue that government at the local level normally lacks the technical, human and financial resources needed to provide public services that are both efficient and responsive to local demand.

It is necessary that governments overcome the challenges of elite capture and limited capacity to create more inclusive institutions. Inclusive institutions create incentives and opportunities for citizen engagement, decentralized service delivery through intergovernmental fiscal transfers from the federal to regional, and then down to municipal, or administrations. During the discussions, these are the responses of some participants:

"…*one of the main reasons for loss of credibility of local government, is their inability to meet the basic needs of the population they are meant to serve*". (Interviewee 3, community member, Alice, July 2016)

and

"…*the inability of municipalities to generate and implement appropriate service delivery policies is due to inefficient administrative and management practices which make them redundant*". (Interviewee 5, Middledrift, August 2016).

and

"….*Most of the problems we face in the municipality can be attributed to mismanagement, corruption, lack of appropriate institutions, bureaucratic inertia and a shortage of investment in both human capacity and physical infrastructure*" (Interviewee 2, Community member, Fort Beaufort, June 2016)

and

"…*Many municipalities are unable to deliver services to residents. This might be because of lack of finances or lack of capacity to provide a good service at an affordable price. Such municipalities should find other ways to ensure that the services are improved and reach the people most in need of them*" (Interviewee 8, Community member, Debe, July 2016)

10.0 DECENTRALISATION AND PRO-POOR SERVICE DELIVERY

The idea was that decentralizing to local governments would improve service delivery. But many worry that limited local capacity, and a hierarchical, traditional society, would undermine local government effectiveness. Instead, decentralization has resulted in a remarkable improvement in the delivery of essential primary social services to the ordinary. The benefits of participatory budget spending at the level on health, education and agriculture accrued to all income levels. Spending on health and education is particularly pro-poor: Public expenditures are a powerful tool to guarantee access to essential goods and services for all strata of society. However, in many cases, distortion and misallocation of public monies — rather than the lack of resources — prevent this from happening. The following responds from participants supported this concerns:

"…*I live in a squatter camp since 2006. We have no electricity, water we fetch from far, we don't have toilets. They have been saying they will fix toilets and roads but they haven't. Even the houses, we have been registering but nothing has happened*," (Interviewee 8, community member, Lower Gqumahashe, July 2016).

and

"…*The whole term of service delivery protests I think it is in many ways one that is not very helpful because if one looks at South African society we are a society that comes from a very divided past we have inherited terrible problems and we have done a lot over the past 20 years to solve those problems but many those problems are still with us. Problems of poverty, of inequality of unemployment*

and those things feed frustration and discontent" (Interviewee 10, community member, Fort Beaufort, April 2016)

and

"…*its communities that are still without water not because the municipality is poor and therefore there is no water because there was an IDP that was done and then when it comes to implementation somebody changes the priorities and that's sometimes where corruption comes in—where the plan is where we are going to,*" (Interviewee 1, Community member, Alice, July 2016)

One of the most famous innovations was the participatory budgeting model developed in Porto Alegre, Brazil – an alternative budgeting process that allows citizens to negotiate with government officials over the municipality's budgetary allocation and its investment priorities. Results suggest that adoption of participatory budgeting at the municipal level is associated with increased expenditure on basic sanitation and health services such as water and sewage connections and waste removal.

The first step is an information needs assessment. What are, in fact, the existing information communications ecologies in each community? Then second, we have to look at the access issue. Who has access and who does not have access? It also says whether people are entitled to actually use the cell phone, for instance. We found out that in many parts of the world such as in rural Tanzania or rural Nepal, women do not have the right just to freely access their cell phone, even if their household owns a cell phone. Last but not least, does this now translate into concrete enhancement? Into the political, economic and social rights?

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11.0 RECOMMENDATIONS

In the public sector today, citizen engagement and participation are crucial, as shown by the vast array of state and local governments on Facebook, Twitter, Pinterest and Google Plus.

First, how can the potential of ICTs be translated into real enhancements of people's living conditions and their well-being and their political, economic and social dimensions of their lives? Second, can ICT enhance accountability and close the so-called "feedback loop"? ICTs include both traditional forms of ICTs, such as community and amateur radio, and also more modern uses of communication technologies, such as the Internet, mobile phones, social media, the use of SMS, mobile apps, now crowdsourcing technologies, community mapping and social computing. The government will have to introduce a number of social accountability mechanisms. Greater citizen participation, and the intrinsic motivation of people working in their local areas, may have helped overcome initially weak administrative capacity. One of the most famous innovations was the participatory budgeting model developed in Porto Alegre, Brazil — an alternative budgeting process that allows citizens to negotiate with government officials over the municipality's budgetary allocation and its investment priorities. As a matter of fact, when citizen participation programs are implemented effectively, more citizens are brought into the decision-making process, which means government can ultimately be more responsive to community needs.

But as with most things, citizen engagement programs are not without their problems — they can lead to gridlock, lack of consensus, abuses to power, manipulation of facts or the politicization of issues. However, public service delivery through citizen engagement will be improved if governments are encourage to:

1. Provide an easy-to-use platform for innovation and engagement by enabling quickly retrieve data, submit forms and find the information they need.

2. Empower citizens by giving them some authority and power in the decision-making process to citizens closest to the issues — think neighbourhood groups, councils and/or community activists — as they can provide insights on funding allocations and cultural issues, and help develop community partnerships.

3. Develop a comprehensive communications strategy. For citizen engagement to truly work, government must create a comprehensive communications strategy — that includes reaching out and broadcasting to citizens on a routine basis via email, SMS, social media, advertisements, door to door, at in-person events or hosting informational sessions or town Hall meetings and a rural community ICT centres.

4. Provide incentives. For citizen engagement to really work, there need to be incentives for both citizens and government employees, and how to incentivize is a decision that requires a manager to invest the time to focus on what will motivate the team while also aligning with budgetary and legal restrictions.

5. Provide sufficient staffing, resources and success metrics. Clear goals, objectives and measurements must be identified to track citizen engagement initiatives, and proper staffing and resources must be allocated to the initiative. Retaining a sense of fairness as to how resources are allocated across a community is also essential.

12.0 CONCLUSIONS

In conclusion, it is important to tackle first of all the approach of radical openness. So technology, by itself, can in fact foster institutional cultural changes within government, international donors, civil society organizations and the private sector if these technologies foster in the institutions by a process of political commitment to openness. Secondly, effectiveness: ICTs can really dramatically lower transaction costs of participation for citizens by making it much cheaper in terms of money and time and breaking barriers of geography for people to effectively engage in civic life. Thirdly, timeliness: Technology can gather real-time data from a broad and diverse set of citizens and civil society groups, which can then empower government officials to be instrumental for both strengthening social accountability mechanisms at the demand side, and also, promoting institutional changes and behavioural changes, within government and donor agencies or on the supply side. So if ICTs are able to enhance people's opportunities, provide them with new options and expand the capabilities for economic and social development, then they can make a real difference in enhancing people's well-being by making decisions. Fourthly, directness: It can facilitate a direct two-way communication between citizens and policy makers, which can enhance responsiveness to people real needs. Fifthly, inclusiveness: The power of innovations such as crowdsourcing can enable people who have traditionally been excluded from the development process to have a stronger voice in development. Finally, collaboration: New technologies can break down hierarchies and enable collaboration across different groups and stakeholders, thus promoting horizontal and the vertical accountability.

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Sustainability of planned-from-scratch cities in Africa: The case of Eko Atlantic City (Nigeria) and Konza City (Kenya)

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Abstract

The new, planned-from-scratch cities are being marketed as the bold and brave face of Africa's urban future, populated with specialized middle class and rich professionals from all over the world, and supplied with excellent infrastructure and services, away from Africa's current urban dystopia. They are marketed as solutions to Africa's economic and social sustainability challenges. Public resources are spent in the pretext of public private partnerships, to prepare ground for direct foreign investments, which is ostensibly critical to local economic developments.

However, the cities are being criticized on many fronts. The chosen typologies of the neo-liberal cities, with a focus on the middle and upper income groups, can only deepen class exclusion, segregation and conflicts. There is hardly any public participation in their development processes, which are dominated by marketing gimmicks of multinational investors. Further, investment of public resources to cushion private sector investors from risks and privatisation of public good is highly questionable.

By looking at two of these cities, Eko Atlantic City (Nigeria) and Konza TechnoCity (Kenya), this paper isolates issues for debate and research, through various conceptual and thematic lenses, from the neo-liberal city, through charter city and manufactured spaces. The paper explores the role of the state and the private sector in these cities. The paper then highlights some negative externalities of these cities. The paper discusses the cities through the quadruple sustainability bottom line, concluding that the cities are anything but sustainable.

Key Words: New Cities in Africa, Africa's Urban Futures, Neo-liberal City, Built-From-Scratch Cities, and Sustainable City.

1.0 CONCEPTUALIZING BUILT-FROM-SCRATCH NEO-LIBERAL CITIES

Development of new neighborhoods, satellite cities and regions in Africa is not new. What is new is the rationale for their current development. These largely market driven cities represent various mutations of the neoliberal city, expressed through the autonomy of the charter city and the concept of manufactured spaces. They are neither supported by state policies nor legislation.

The typology of the neo-liberal city currently being advocated for in many parts of Africa is based on the notion that central role of urban development is to drive economic competitiveness of countries, metropolitan and city regions, ignoring other notions of urban development. These types of markets generate inequality that they cannot resolve (Van Vliet, 2002). The other aspects of urbanization, namely social, cultural and environmental are subordinated to this central economic agenda. The neo-liberal city with the belief that aggregation of place specific interventions will result in better economic benefits is producing fragmented urbanism that ignores overall urban development. This space specific urban interventionism is shifting economic, political and social power from the body polity to the private realm (Swyngedouw *et al.*, 2002: 542 – 577). These neo-liberal cities are also coming with new forms of urban governance that prioritises the market over civic engagement and commodification of space over protection of civic and public places (Logan & Molotch, 2007). Their governance models excludes public participation and meaningful civic engagement, prioritizing instead market process and technocracy (Friedmann, 2007). Urban planning and development approaches are anchored on real estate interests and consolidation of public and private sector finance for location specific investments (Hackworth, 2007).

Place making in the neo-liberal space has been removed from the hands of the citizens through planners to private sector boardrooms in different locations of the

world. Land use planning, zoning and regulation are shifted to reflect market interests rather than public good. Spaces are manufactured, as eloquently conceptualized by Harvey, with the power to organise these being monopolised by the market (Harvey, 1989: 3 – 17). The agents of transformation of space, and indeed the new transformed urban spaces, reflects the new power in urban governance (Hackworth, 2007). This power is neither in the hands of the state and its agents nor in the hands of the citizens through civil society, but rather in powerful agents of the global private capital seeking for locations of optimal profits. The city space therefore is reduced to a manufactured space for expansion of global capital (Brenner & Theodore, 2002).

The two built-from-scratch cities discussed in this paper are in essence private cities. They are annexed from existing metropolitan regions with semi-autonomous governing systems (Macdonald-Laurier Institute, 2012). Such systems and structures are often created through coalition of interests rather than laws. Some scholars, in reference to such a model in Hong Kong, have called these *chartered cities* (Caplan, 2010). Chartered cities are attempts to replicate Hong Kong's economic models to deliver economic gains to inhabitants (Cheong & Goh, 2013). They aim at creating highly productive economic zones regulated internally. The systems and structures crafted for such cities are more concerned with international partners rather than local environment and realities. Charter cities prioritise monetary gains rather than socio-cultural practices. They function as new autonomous lucrative economic zones, rather than means of rejuvenating urban areas from a human settlement perspective.

2.0 OVERALL APPROACH

Both cities discussed in this paper are still in the process of being developed. The approach in this paper is therefore based on future studies. Future studies project a future based on systematic studies of past and present trends to project future scenarios. The approach understands the future as plural, with various degrees of multiple likelihoods. It explores future scenarios, which have been defined as "description of a possible future, including paths that may lead to it" (see Kosow & Gaßner, 2008). The future projected here has normative elements of the desirable. Recommendations are based on "back casting", i.e. what changes need to happen in the present to achieve this desirable future. The sources of information are also multiple, though majorly from desk studies, grey and published literature. The author has been tracking, interacting with and critiquing the projects over a period of about three years. The evolving insights form the core of the historical data used in the paper (see also Glenn & Gordon, 2009).

3.0 INTRODUCTION TO EKO ATLANTIC AND KONZA CITIES

Eko Atlantic and Konza are satellite cities of Lagos and Nairobi respectively. They are located in the metropolitan regions of both cities. Satellite cities are typically located in close proximity to the main cities, enabling the former to take advantage of the latter's urban area systems, infrastructure and services. Sometimes they are intensely connected with the mother city; sometimes they are separated by a physical barrier.

Eko Atlantic

Eko Antlantic is located 5 km from the Lagos Island, on the southern-most edge of the Lagos metropolitan area, adjacent to a number of creeks; where the Atlantic Ocean meets land. It is bordered to the North by Victoria Island, one of the most affluent neighborhoods in Lagos. It is a 1 000-hectare development. It is meant to feed off the 25 million population of the mother city Lagos' needs for financial, commercial, and residential and tourist accommodations. It is planned to have a population of 400 000 – 250 000 being residents and 150 000 commuters (Iroegbu-Chikezie, 2013). It will comprise mixed-use, high-density structures that will function as commercial, institutional, residential, recreational and light retail spaces. The stated purpose of the project is to achieve threefold urban transformation of Lagos by (see Adebayo, 2004):

- Addressing physical planning challenges of the city;

- contributing to the Lagos' economy by attracting direct foreign investments and through job creation; and

- contributing to climate change adaptation, by addressing the Lagos shoreline erosion.

The development will also entail reclamation of ocean front for city development, construction of down town avenues and financial districts, provision of harbour light and city beautification, construction of Eko Red line light railways to link different locations and development of Eko green line, Eko Ferry and Marina line (Olawepo, 2010).

Konza TechnoCity

In 2009, the Konza TechnoCity project was initiated with the procurement of a 5 000 acre parcel of land at Malili Ranch, 60km south east of Nairobi, Kenya. It was conceived to capture the growing global Business Processing Outsourcing and Information Technology Enabled Services (BPO/ITES) sectors in Kenya. According to government estimates, BPO/ITES business produced US$110 billion in revenues in 2010. Revenues from this industry were expected to increase **137**

three-fold by 2015. Africa attracts about 1% of the total revenues accruing from this industry. Only a few African countries, including South Africa, Egypt, Morocco, Ghana and Mauritius, have developed their BPO/ITES industries. Kenya aimed at capturing a sizable amount of this industry. In 2009, the Government of Kenya hired the International Finance Corporation to advise on the development and implementation of a technology city, which would grow the BPO/ITES and other technology industries in Kenya (see Konza, 2006).

There are plans for an electronic manufacturing plant, an international financial centre and a convention centre. The targeted sectors to drive the growth of the city include BPO, Software Development, Data Centres, Disaster Recovery Centres and Light Assembly Manufacturing Industries. The proposed Government Data Centre will complement the existing facility, which currently links government ministries, departments and agencies (Makau, 2013).

Service provision is being ad-

*Figure 1: Satellite image of reclaimed land (whitish part) for Eko Atlantic City Source: **Eko Atlantic (2016)** http://www.ekoatlantic.com/.*

Figure 2. Overall Layout of Konza TenchnoCity Source: Konza Technology city (2016) http://www.konzacity.go.ke/.

dressed in various ways. State-owned Kenya Railways intends to connect Konza city at 120km/h rail network between Mombasa and Malaba. The city's estimated water demand is 100 million litres per day. This will be supplied through Thwake water and sanitation project, which will require 60km of water pipeline, a section of which will require pumping over the Kilungu Hills. Around two million litres per day will be provided by local boreholes, the drilling of which is presently underway. The completed city is expected to have a peak electricity demand of 675 MVA. It is suggested that the city can be supplied via the planned high voltage line between Mombasa and Nairobi (see Konza, 2006).

4.0 SUSTAINABLE CITY OR GREEN WASH?

Both Eko Atlantic and Konza City lay some claims to being sustainable. The idea of Eco-City has been around for a long time, focusing more on ecological, environmental and economic sustainability. According to Register (2006) an Eco-City is "an urban environmental system in which input (of resources) and output (of waste) are minimised" (Register, 2006). Joss, *et al.,* (2013) define the Eco-City on the basis of reduction of green house gas emissions, global climate change and urbanization processes. Although sustainable urban development is much debated, it is generally understood to have the four aspects economic, socio-cultural, ecological and institutional.

Economic sustainability refers to green jobs or green economics driven by enterprise that have great environmental benefits. It further refers to initiatives that improve the economic well being of the local populace. Both initiatives cannot lay claim to economic sustainability.

Socio-cultural sustainability refers to development initiatives that

promote, protect and advance socio-cultural aspects of people's well being. These include traditional cultural practices, e.g. religion, ethnic rituals, etc. They also include contemporary social aspects of people's lives that contribute to their well being. Both cities cannot lay claim to socio-cultural sustainability, they instead aim at promoting an alien westernized — aka globalised — way of life.

Ecological sustainability refers to protection of the ecosystem and the environment. It includes physical aspects of sustainability, including: reduction of the green house gas emissions, clean environment, greening, sustainable use of water, clean energy, clean sanitation and waste management, energy efficiency and renewable energy, natural ventilation systems, protection of fauna and flora and so on. Both cities make some attempts at these as discussed next, but not enough to qualify as environmentally sustainable/eco-cities.

Institutional sustainability refers to adequate and appropriate structural and institutional systems that support and enable cities to achieve all aspects of sustainability. It includes appropriate policies, legal and legislative frameworks, appropriate governance and management systems, and appropriate institutionalized structures and operations. It is unclear whether the systems and structures that have been put in place in Eko Atlantic and Konza can adequately support sustainable urban development.

Eko Atlantic's Claim to Sustainability

Eko Atlantic's claim to sustainability is linked with the fact that it is built on land entirely reclaimed from the sea, thereby responding to some degree to indirect impacts of climate change. Lagos has suffered loss of wetland — ranging from 38% to 100% in some areas — as a

result of urban development (Taiwo, 2009).

The waterfront of Lagos has been subjected to erosion and flooding with severe floods being experienced in 2010 and 2011. Studies indicate that Lagos population will have 800% increase in exposure to disasters linked with sea level rise by 2070 unless intervention are undertaken currently (Nicholls *et al*., 2007). Continued coastline erosion will be addressed by the new sea wall, *'the Great Wall of Lagos'* (Figure 4). The wall is eight-and-a-half metres above sea level. It includes a concrete wave deflector wall and will include a scenic pedestrian promenade. The wall is anticipated to withstand the most severe tidal surges forecast over the next 1 000 years.

Environmental impact assessment conducted by various professionals and Heinrich Boll Stftung Nigeria have refuted claims of efficacy of this wall (Udoma, 2014). They note that dredging can increase the strength of the waves, which will be further deflected by the wall, thus hitting the shore of vulnerable areas such as the Alta Beach. They record that Victoria Beach has lost 12m to erosion annually between 1985 and 2009 (see also Obiefuna, *et al*., 2013).

The developers of Eko Atlantic have opted for self-sufficiency in a number of key services. They aim to produce 70MW expandable to 1.5GW of electricity. They are pursuing water efficiency starting from 10 000m³ per day peaking at 100 000m³. The city is building an underwater storm water drainage and waste management system. It will have its independent telecommunications, security and transportation systems.

Konza TechnoCity
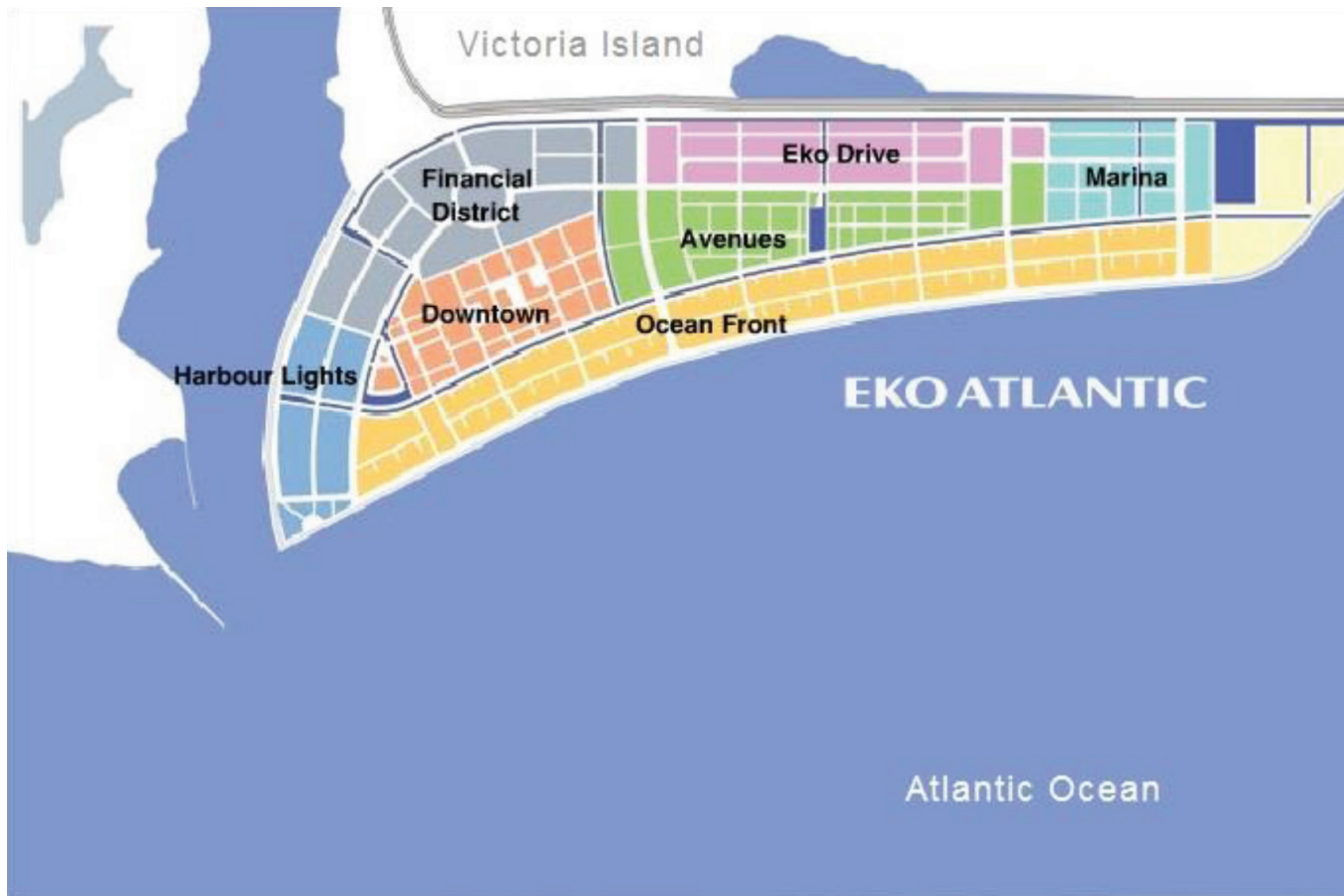The Government of Kenya commissioned a Strategic Environmental

Figure 3: Zoning of Eko Atlantic City Source: Eko Atlantic (2016) http://www.ekoatlantic.com/.

Figure 4: The Great Wall of Lagos Source: www.royalhaskoningdhv.com

and Social Assessment, Legal and Regulatory Due Diligence, and a Demand Assessment. The initial feasibility and concept master plan was prepared by Deloitte and Pell Frischmann, a United Kingdom based consultancy, which proposed the establishment of Konza, a technology park with infrastructure that will be "sustainable" and have inclusive growth as key drivers (Konza, 2006)

Konza was planned as a mixed-use, high-density walkable city that accommodates a diversity of programs and districts. By avoiding superblocks and auto-orientated roadways, Konza is intended to be a liveable urban environment that encourages high-value development and discourages sprawl. Planning was intended to take cues from successful global urban centres, yet be specific to the needs of Kenya and the region. The master plan was intended to set the framework for a city that functions globally and locally, today and in the future. These concepts of liveability, density, and walkability were incorporated in the Local Physical Development Plan approved by the Ministry of Lands during February 2013.

The master plan follows a "stitch" framework, composed of a mixed use "bar" that runs east- west off Mombasa Highway and is intersected by a series of program "bands" that run north- south. These bands include a university, residential, science and tech, and an office band. The intersection of the bars and the bands create connections, where special programs and higher density developments occur. These intersections become points of interest that gives neighbourhoods distinct character. The master plan also contains a series of neighbourhood parks, located throughout the city with varied orientations. Most parks are connected to the green boulevard, a 60-meter parkscape and

public transit corridor.

Makau (2013) argues that Konza will cause loss of habitat, loss of wildlife grazing area, displacement and disturbance of wildlife currently located onsite, e.g. the migratory wildebeest, antelope and zebra. A 2km buffer zone and 6.2 square km wildlife corridor are intended to minimise the negative effects. Nevertheless, the priority seems to be development over biodiversity conservation.

The growth of the city will result in the creation of large amounts of construction, commercial and house hold waste. If this is not disposed off appropriately, then it could result in a moderate negative impact on the environment inform of air, ground and water pollution. Konza Techno City therefore should include the provision of waste transfer, sorting and recycling centres and measurers for the promotion and education of workers and residents in the means of reuse, and reduction of waste. This calls for the need to explore alternative means of waste disposal other than conventional landfill (see Makau, 2013).

5.0 SMART CITY CONCEPT

Konza city is intended to be a smart city. Smart cities concept has been attributed to the need for future cities to be able to provide quality of life drawing from environmentally sustainable and efficient practices. Oberti and Pavesi (2013) define smart cities as those cities that integrate environment, people and technologies efficiently (Oberti & Pavesi, 2013). Smart cities also refer to cities that incorporate digital technologies as is intended in Konza City.

As an ICT city, Konza is intended to have an integrated urban information and communication technology (ICT) network that supports delivery of connected urban services

and allows for efficient management of those services on a large scale. Specifically, a smart city framework will integrate the following four key city services:

- Infrastructure services (transportation, utilities, public safety, environment);

- citizen services (access and participation);

- city services (city information, planning and development); and

- business services (supportive services for local commerce).

As a smart city, Konza is intended to gather data from smart devices and sensors embedded in the urban environment such as roadways, buildings and other assets. Collected data is intended to be shared via a smart communications system and be analysed by software that delivers valuable information and digitally enhanced services to Konza's population. For example, roadway sensors will be able to monitor pedestrian and automobile traffic and adjust traffic light timing accordingly to optimize traffic flows.

Konza's population is meant to have direct access to collected data, which may include traffic maps, emergency warnings, and detailed information describing energy and water consumption. The availability of data is intended to enable Konza's population to participate directly in the operations of the city, practice more sustainable living patterns, and enhance overall inclusiveness. It is hoped that by leveraging the smart city framework, Konza will be able to optimize its city services, creating a sustainable city that responds directly to the needs of its residents, workers and visitors.

Konza planners believe that smart city framework should start with development of a comprehensive ICT infrastructure. Konza plans to learn from other cities in various parts

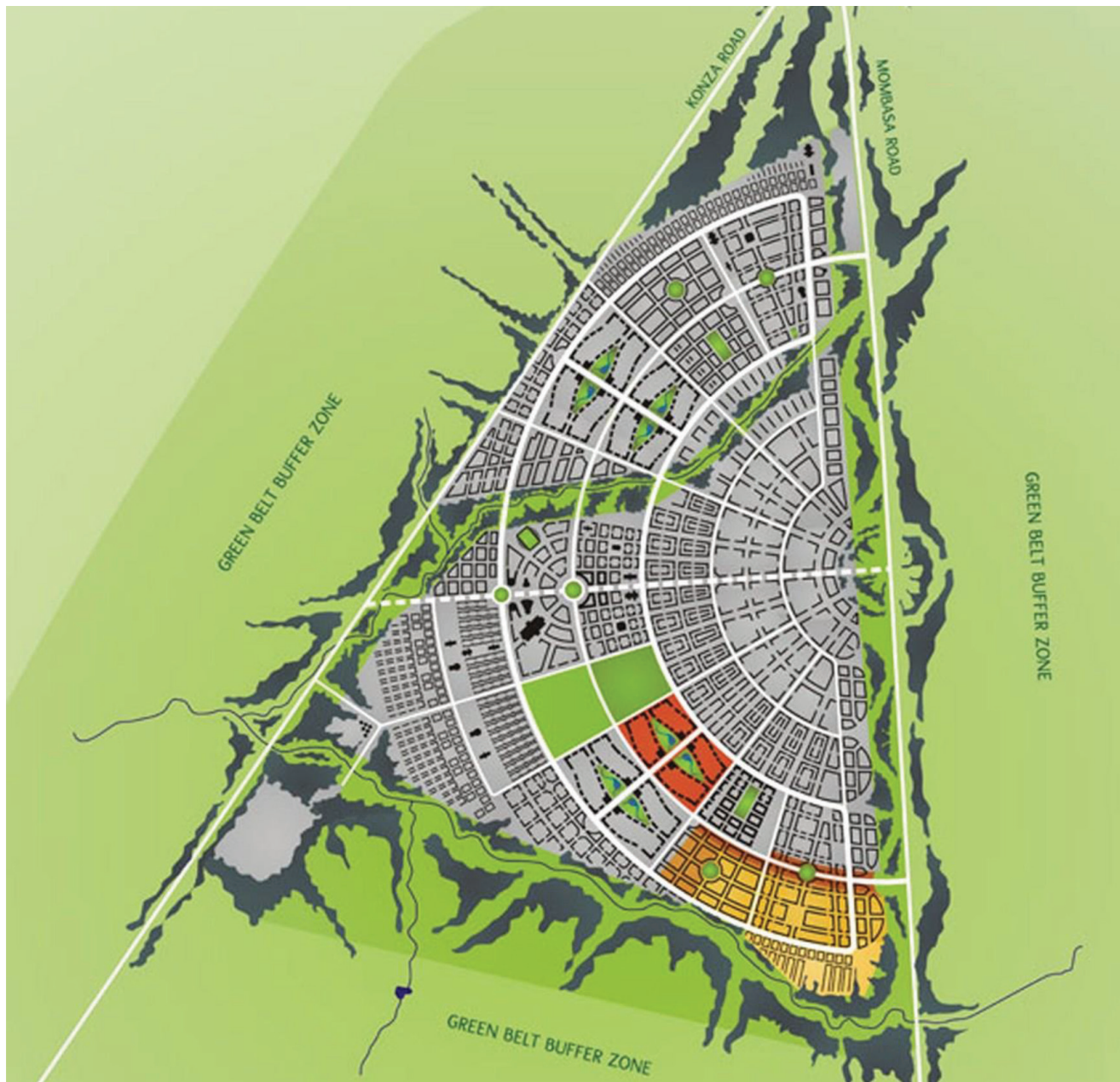**141**

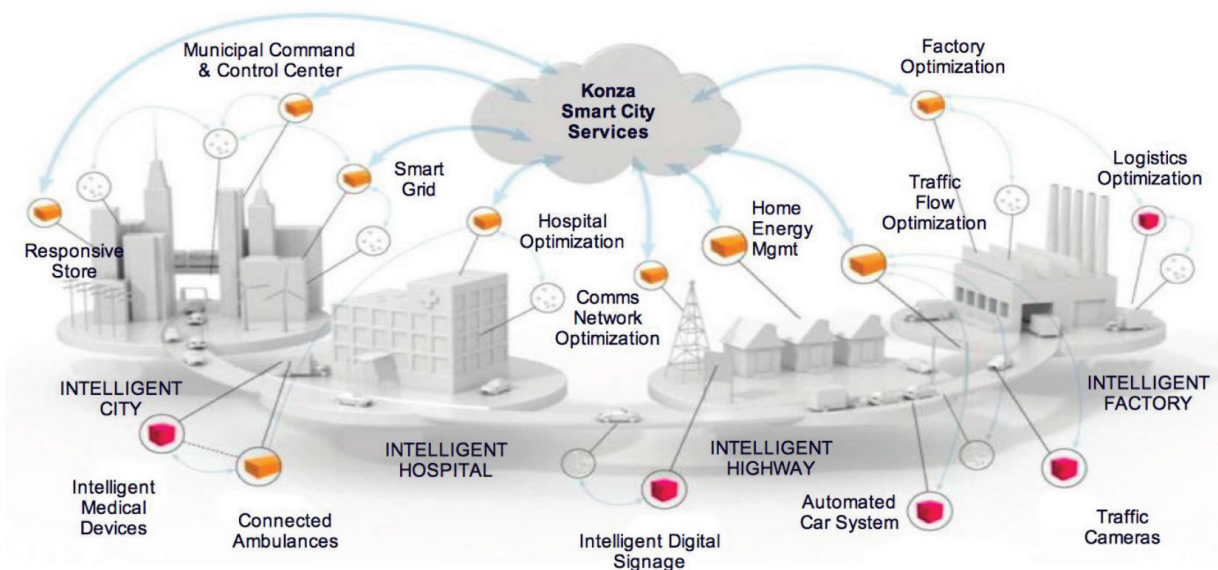*Figure 5: Initial radial layout of Konza TechnoCity | Source: Konza Technology city (2016)* http://www.konzacity.go.ke/.

Figure 6: Konza TechnoCity Smart City Concept | Source: Konza Technology city (2016) http://www.konzacity.go.ke/.

of the world that have successfully incorporated smart city frameworks, including Santander and Barcelona, Spain; Singapore; Amsterdam, the Netherlands; and Rio de Janeiro, Brazil.

Konza mainly emphasizes the technological aspects of smart cities. The people referred to in Konza about are not Kenyans — they are caricatures of human beings from the west. Mwau (2013) questions whether Konza will even be able to attract the specialised human resource that would be needed to run such a specialised ICT programme in the city (Makau, 2013). Will Konza be sustainable, while ignoring Kenya's socio-economic and political context of the interventions? Definitely not! It will take an army to protect Konza from the daily socio-cultural and political practices predominant in the Kenyan society in generally, and Kenya's urban context, in particular.

6.0 AMBIGUOUS ROLE OF THE STATE AND THE CITIZEN IN THE PRIVATE CITY

The role of the state in these new cities is somewhat ambiguous. Both cities are conceived as public private partnership projects. In the case of Konza City, the initial city development initiatives are from the national government. The role of government is mainly to develop public infrastructure and regulatory guidelines. In the case of Eko Atlantic the city — which is also a public private partnership between the Lagos State and private developers — the land is leased directly to the private sector for 78 years.

In both cases, the interest of government and the general population is weak and is seen to be primarily for the support of private sector interests. Efforts of both governments to attract direct foreign investment, by offering 'World Class Cities', is superficial. Attempts to transplant these without considering

the political and socio-economic contexts is imprudent. The possibility of these cities degeneration into squalor are real, as both governments do not have appropriate and adequate legal, administrative, technical and planning instruments and implementation mechanisms to realise these aspirations. The legal frameworks in both countries make it impossible to exclude the poor and the homeless from these cities. This is why Watson (2013) refers to them as African fantasies, dreams and nightmares.

The regulatory role of the state in these cities is also not clear. The governance and management systems of these cities are also ambiguous. Typically, cities, urban areas and towns established by the state are guided by policies, legislation and regulation. To some degree this has been catered for in Konza City by establishment of the Konza City Development Authority, which is a statutory body empowered to lead the development of Konza. Nevertheless, there are also various institutions that are required to govern and manage the city, including relevant boards, city managers, by laws made from the County Assembly, and its own additional bylaws approved by the County Assembly.

Eko Atlantic is expected to boost Lagos' intent of becoming the financial epicenter of West Africa by 2020, in addition to providing local economic opportunities. The chief developer of the city is South Energyx Group, a subsidiary of Nigeria-based Chagoury Group. Although Eko Atlantic is a public private partnership on paper, its arrangements appear more like outright privatization, where there is a full divestiture of public asset. On paper, though, the project is merely being managed by the private sector on a 78-year lease (Awofeso, 2010). After 78 years, when the lease expires, Eko Atlantic will serve as an auxiliary to the two ex-

isting commercial districts, as well as accommodate residential, retail and recreational land uses (Eko Atlantic, 2016).

7.0 PRIVATISING THE METROPOLIS

Studies by Delloite and Touche show that Africa has the fastest growing middle class globally. The middle class is creating a demand for consumption of goods and services, especially housing (Watson, 2013). There is demand for well-located, modern housing, with desirable architectural styles. The new city phenomenon is supported by foreign capital looking for optimal returns. That is why in South Africa, this phenomenon of new mega cities is absent, as returns from such development has been shown to be lower than Kenya and Nigeria (Watson, 2013).

Private sector real estate interests drive these cities. Right from the start, the logic behind these cities is to optimise on the economic advantages that accrue to private investors. Even where the state is leading, the central role of the state is to invest in a way that guarantees private sector's optimal returns on investments. The rhetoric of job creation does not make much sense. For example, Konza intends to create 20 000 new jobs. Such jobs can be created with much smaller investment in existing cities.

Both cities have no space for the low income or the poor. This is despite the fact that in both countries, significant demographic lives below the poverty line. In both contexts the market can still rake in decent profits by simply focusing on middle and high income; only the state can realistically respond to the housing plight of the urban poor. Eko Atlantic focuses on middle to high-income groups living in middle to high-density developments, to optimise on returns per square metre of land. Land started selling in the development at the rate of **143**

$1 000/m^2 (Eko Atlantic, 2016). The low-income groups are expected to commute from the larger Lagos metro region to work in the city (Iroegbu-Chikezie, 2013). In the case of Konza there is no mention of the low income at all; so one can expect rapid growth of slums in the neighbourhood of the city to support this group.

The projected cost of the city is around $3bn, and is expected to be 100% financed by the private sector. By Nigeria's building standards of a plot of land for a single-family house, the above cost translates into around $700 000 per plot. An estimated 14% of space had been sold in 2011 (Abengowe, 2011).

Because of the dominance of private sector interests these cities start with fantastic images from the investors and developers with no public participation at all in the processes (Makau, 2013). The negotiations are done both in government offices without involving the public or in courts as various parties jostle for their stakes in the develop-

Figure 7: Image of commercial district of Konza TechnoCity | Source: Konza Technology city (2016) http://www.konzacity. go.ke/.

Figure 8: Images of Eko Atlantic City | Eko Atlantic (2016) http://www.ekoatlantic.com/

ments. These fantastic images are accompanied by such concepts as "World Class", "Smart", "Lifestyle", "Sustainable" to appeal to the appetites of the middle income.

Eko Atlantic has skyscrapers situated along tree-lined, six lane wide boulevards. The new city will be sectioned into different districts comprising a business district likened to New York's Fifth Avenue or Paris' Champs-Elysees, a Manhattan styled area with high-rise condos, waterfront, restaurants and shopping facilities. In addition, there will be a coastal promenade built around the residential area and meant to serve as recreational and light commercial area with bars, restaurants and cafes. They will also be a marina for yachts and sailboats. Other promised infrastructure include a light rail transit, 24-hour power supply, promenades, shopping malls, an eight-lane highway, waterway transport infrastructure and parks.

8.0 NEGATIVE EXTERNALITIES OF THE PRIVATE CITY

Both Eko Atlantic and Konza are overtly class-based cities, catering only for middle and high-income groups. This makes sense in terms of real estate returns for the investors. They avoid the lower income bracket. However, such cities existing within a political economy where the majority of urban residents are either low or no income groups is not plausible. These are the cities that end up generating slums as the key service providers for the city.

Phillips (2014) writes about Africa's botched industrialisation, explaining how instead of lifting people from poverty, it created a special class of the urban poor. This class supplied labour to the industrial developments without being compensated commensurately. They find accommodation in urban slums and means of survival in urban informal markets. These cities will worsen this problem. Besides, the number and the type of jobs that they are promising are simply not worth the investment.

Now, I look at the issue of land speculation around the cities. In the case of Konza, Mwau describes speculation in land, and rising of land values all the way to Malili Township 10km away (Mwau, 2013). This subtle displacement of the relatively poor landowners, by slightly better off people, is not fully studied and comprehended. In the small town of Malili, Mwau describes a mushrooming of activities and land speculation, with "… plots changing ownership within hours." He reports that authorities are now doing their best to contain this informality, which has sprung up in at least 10 towns near the proposed Konza site. This speculation and growth of informality can only get worse.

What is even more stark is the fact that most of these cities feed off directly from existing cities. Eko Atlantic is in the Lagos metropolitan area. Konza is in the Nairobi Metropolitan area. These cities are further drawing on public resources, sometime in questionable ways. Supposing the cities were to exist as envisaged, the stark physical juxtaposition of abject poverty alongside affluence will result social upheavals, seen before in the segregated apartheid cities of South Africa and Israel. Phillips (2014) discusses some of this socio-spatial polarisation (Wulff & Reynolds, 2011), especially in the context of the widening gap between the rich and the poor. The resultant

Figure 9: Malili Town | Source: Mwau 2013

socio-spatial polarisation will have serious social consequences. Further, these cities create many externalities that they don't resolve (Van Vliet, 2002). Jorge *et al.* (2001) argue that there is need for such urban areas to internalise their externalities and balance short term private benefits with long term societal ones. The solution is really in urban policies and legislation. These should be crafted in a way that balances economic benefits of investors and social, cultural and environmental aspects of sustainable development.

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Overcoming 'dualities' and re-imagining the 'praxis' of transformation in urban human settlement designs – some reflections about the Cosmo City experiment

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Abstract

The paper debates the notion of mixed-income human settlements and is informed by the Cosmo City experiment North West of Johannesburg. The importance of Cosmo City is that it represents a paradigm shift in urban design. But the paper raises issues with the celebrated Cosmo City experiment. Even though the experiment represented a shift in paradigm, it continues to conceal numerous foundational blemishes and deficiencies. A paradigm shift overcomes such blemishes only if it transcends itself to become a transformative praxis. This is where the Cosmo City experiment fails and these failures need to be thoroughly examined if there are intentions to replicate the experiment all over the country. A transformative praxis has at the core 'constructive disruption' which seeks to enact the necessary dichotomous dimensions that contribute to genuine transformation. This is what is needed to alter South Africa's urban landscape and to re-ignite the diminishing spark of nation-building. The paper uses nation building to infer an integrated non-racial society which strives towards common goals in a united fashion. The paper also highlights the context-related limitations to a transformative praxis in urban human settlement design, hence it poses questions about the macro-governance framework of the state.

1.0 INTRODUCTION AND BACKGROUND

The initial brief for this paper was to respond and contribute to the question "what models, mechanisms and measures should be explored and employed to re-configure the social and economic designs of neighbourhoods and cities, thereby expediting economic transformation and nation building?" These are big, fashionable terms, but that does not mean they are sacrosanct, hence I will also subject some of them to critical observations. But at a later stage the conference organisers felt the paper can also shed more light on the question about how can planning and construction phases of human settlements be improved to realise high efficiency levels and sustainability.

The perspective the paper offers straddles political philosophy and political economy in the human sciences. Building and construction science and humanities are two lines of thought or disciplines that seem logically incompatible, but in real life do require each other. It is also general knowledge that unlike the hard sciences like the physical sciences, human science insights are hardly reducible to operative technologies. Hence the concepts and insights they yield are perennially debatable. But they can be used to craft models to break new grounds and shift paradigms of thought about real life issues. The paper examines the mixed-income human settlements paradigm, which international scholars like Simpson (2012) have also debated. It argues that this paradigm was used in very superficial ways when Cosmo City, North West of Johannesburg was designed and established. For it to have greater impact, it has to be transformed into a 'praxis', and it is only then that it reinforces meaningfully the "national imaginary"(Freschi, 2006:155) of a united, non-racial and equitable South Africa. Here praxis is used to infer a guarded inextricable inter-linkage between theory and action, between concept and design; design and implementation and in that way returning and integrating the insights of action back to the concept and theory. This is the unbroken thread of insights and actions which makes transformative praxis meaningful and different. This needs to happen in such a way that the intended quality and underlying ethos seamlessly pervades concept, action and product. Not all practice is praxis and obviously theory without action cannot form praxis. As Vazquez (1977:6) once argued, praxis is in fact "a materialist metaphysics which is a little more than

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an inverted idealism" and therefore signifies a pragmatic idealism. But for praxis to be transformative, this paper argues, it needs to have as its fundamental ethos, 'constructive disruption and rupture', without which, in the case of South Africa, the break with the past, will lack the "dichotomous dimension" (Laclau, 2007:4) which separates the old from the new. The 'constructive disruption and rupture' are conceptual toolkits to infer the needed change from the designs of apartheid cities towards meaningful integration. Cosmo City (North of Johannesburg) is an interesting attempt — it is an example of a mixed-income human settlement paradigm not anchored on a genuinely transformative praxis. The link between urban designs and the imperatives of transforming urban spaces is still tenuous in South Africa, yet it is very important to the agenda of nation building. The link is important for the disruption of colonial and apartheid historical configurations of urban spaces; the link is obviously important for bridging dualities in our economy and social formation. A paradigm shift which proffers compatible diversity in concrete structures of human life, especially in the designs of urban spaces, continues to be necessary for South Africa's development path.

The re-configuration of the social and economic designs of neighbourhoods and cities need not be positivistically conceived as necessarily "expediting economic transformation and nation building" as indicated in the conference call for papers. The degree of engagement of local and foreign capital in South Africa's economy and the direct or sometimes indirect impact this has on social and political life of communities, on political power and socio-economic policy, should stand as caution against positivistic assumptions and should be a call for careful navigation.

The dialectical functioning of our economic system in an age of financial globalisation constitutes "a metaphysics, with monetary denomination taking economic and political primacy and ensuring the value-price transformation as a continuous yet inaccurate iteration" (Mococci, 2011:72). As Epstein (2005:4) argues "some of the effects of financialization — in concert with neo-liberalism and globalization — have been highly detrimental to significant numbers of people around the globe". The victims include some South Africans whom continue to inhabit the margins of urban society and others literally living in 'miserable hovels and shanties on waterlogged wasteland', in appalling peri-urban squatter settlements (Kondlo, 1992).

Perhaps, there is a separation which needs to be made between urban human settlements as financial assets that carry with them financial value and urban human settlements as social re-engineering and political initiatives. The financial value comes into operation through the "assetisation process" (Ducastel & Anseeuw, 2012) which extracts value from the political and social engineering imperatives. Mixed income-human settlements are in the end assets which need to be tradeable, profitable and liquid to generate the kind of value recognized by financial markets. Hence it is expensive to replicate them in urban centres as robustly as necessary to transform urban spaces. If one were to do a tracer study one would find that through the contractors (e.g. Basil Read) and financial institution's efforts to build and replicate mixed income, settlements are circumscribed by a connecting thread of profit linked to commodity chains and commodity systems that are part of the global value chain and financial system. The idea of global value chains is important because it sheds light beyond "sectoral-level investigations

and cross-national comparisons to explore that complex transnational networks of actors that emerge to bring about the production-consumption of particular commodities" (Challies & Murray, 2011:30) including urban human settlements. The challenge is not merely failures to implement good policies of the state — the challenge goes far deep — the problem emanates from the changed character of capital ever since financial liberalization in the late 1970s. The structural impediments to economic and social transformation in South Africa are dialectically related to a deep-seated macro-economic challenge — the hegemonic role of finance capital. The fact is that everything boils down to rands and cents, and there is somebody to make profit from it makes transformation of the urban spaces a big challenge. But at another level, we cannot stop to dream, to re-imagine and seek innovative ways to overcome the fractured landscape of post 1994 urban spaces in South Africa, as this is necessary to make non-racialism a reality.

The dualities referred to in the title of this paper are, first, in the economy where in the same country, especially in urban areas, there are glaring scenes of a first world, where a predominantly white dominated economy, co-exists with and dominates a 'third world', predominantly black economic sphere. As explained by Kagwanja and Kondlo (2008:xvi), "far from producing one united and equitable nation, post-apartheid development strategies have created what analysts have dubbed 'two different countries': one Lockean, largely, white, wealthy and secure; the other Hobbesian, overwhelmingly black, poverty-stricken and crime-ridden. The 'two countries', however, share one of the world's reputably most liberal Constitutions and a vibrant pluralist democracy characterised by regular free and fair elections — albeit up

to this point dominated by the ruling ANC – and an economy that has grown faster in the last 15 years than it did in the 1980s, increasingly attracting foreign direct investment and its capital penetrating deeper into the African markets". This is one of the realities which can be corrected through a transformative praxis of urban design, using mixed-income human settlements as experiments.

The other dualities are ideological and socio-cultural — where the public in South Africa is a contested space. The old yet very relevant and widely debated article by Peter Eke (1973) 'Colonialism and the Two Publics in Africa: A Theoretical Statement', argues this point. It describes "the emergence of a unique historical configuration in modern postcolonial Africa: the existence of two publics instead of one public, as in the West". The two publics, according to Eke are "the primordial and the civic publics" and the operation of these publics in South African politics foments the fractures in collective will and effort. The primordial public, largely African and closely identified with primordial groupings, sentiments, and activities is different from the civic public, largely Western educated, based on civil structures: the schools, military and the civil service. One could argue that this uncovers 'the making of affliction' (O'Laughlin, 2013:175) in South Africa where relations of class, race and gender awkwardly intertwine and produce and a tormented "structure of feelings" (Pickering, 1997) as in ideas and popular consciousness.

2.0 METHODOLOGICAL POSITION OF THE PAPER

Overall, the methodological position of this research is exploratory. Exploratory research methods are more relevant if an issue or area has not been researched before. No research has been done on

paradigms shifts in urban settlement designs using Cosmo City as a case study. The link between urban designs and the imperatives of transforming is hardly examined with the backing of empirical reference points like the case of Cosmo City. Exploratory research methods are usually used in order to determine the nature of the problem and are not aimed at providing fixed and conclusive answers to research questions, hence with new data and new insights the researcher keeps improving his or her position. The exploratory research method used in this paper involves hybrid set of tools from data collection to actual analysis. These include literature review, web information and empirical data from the few interviews (which were more in the form of conversations with identified residents of Cosmo City). Hence the work provided in this paper should serve as a basis for further research.

3.0 THE INSTITUTIONAL AND GOVERNANCE CONTEXT OF SOUTH AFRICA

There are dualities in the "civic public" itself, hence the section below shows co-ordination challenges at the level of governance. The question is whether the national macro organization of State governance structures, especially from May 2009, supports efforts towards mixed-income human settlement designs based on a transformative praxis? The question is whether state led architectural projects in urban South Africa have an underlying transformative ethos to embody the national agenda of integration and development. I refer to integration here not in the liberal sense which advances and conceals white values, whilst overlooking the Pan African code of human coexistence. In other words, does the institutional and governance context enable or disable mechanisms and measures to explore and employ

in order to re-configure the social and economic designs of neighbourhoods and cities? The period post 2009 saw the reconfiguration of government starting with the Presidency, the splitting of departments and the creation of new departments. The department of Minerals and Energy was split into two departments (Dept of Minerals and Dept of Energy); Environmental Affairs and Tourism was also split; new departments such as Economic Affairs and the Department of Women, Children and Persons with Disabilities were created. The transfer of integrated rural development into Rural Development and Land Affairs and removal of agriculture from Land Affairs; the transfer of the forestry function to a consolidated Department of Agriculture, Forestry and Fisheries; the transfer of skills development function to the Department of Higher Education; the splitting of the Department of Education into Basic Education and Higher Education departments. Other Departments acquired new names, e.g. from Housing to Human Settlements; Foreign Affairs to International Relations and Cooperation; Local and Provincial government changed to Cooperative Governance and Traditional Affairs (COGTA), etc. I am including this portion because of the cascading effects on governance structures at provincial and local levels.

At local government level, for instance, a new Format Guide for Integrated Development Plans and an Integrated consolidation Development Plan Analysis Document were issued by COGTA to ensure that IDPs can deliver better to communities. All these issues have had major implications for national, provincial and local level speed of innovation and delivery and even kind of audit qualifications which occurred must be read against the backdrop of the many changes which occurred at both leadership

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levels and also structurally, at all levels, since May 2009.

These arrangements and re-arrangements are not without challenges and especially for the advancement of new paradigms in urban human settlement designs. As stated in '*The State of the Public Service Report*' (2010), government is, generally, still not organized in a manner that brings together all components that are necessary for addressing a given societal priority — instead it is organized along functional lines. Sometimes the same function is split across spheres of government and between government departments and autonomous government entities. The report gives the example of the housing process where the overall policy and norms and standards are developed by the national department, projects and subsidy financing are approved by provincial departments, and the practical delivery steps (including the acquisition of land, town planning, township establishment, provision of infrastructure and the building of houses) are the responsibility of municipalities (Public Service Commission, 2010:3). The question is whether this has created a challenge in replicating mixed-income settlements of the Cosmo City type all over the country? The Cosmo City experiment, with all its flaws, was at least a starting point which could be replicated and progressively improved. But given the fractured governance landscape, this does not seem possible.

4.0 CONCEPTUALISING MIXED-INCOME URBAN DESIGN PARADIGM

The mixed-income paradigm is a widely debated "mechanism for inducing more equitable cities" According to Simpson (2012:2), it is about increasing "the presence of higher-income neighbors through the mixed-income redevelopment of high poverty neighborhoods —

along with the movement of poor people out of concentrated public housing". Simpson's research in Chicago in the US indicates that that there is usually hope that "by designing the income mix of neighborhoods through policy levers available to the government, the idea is that behaviour can be changed and inequality lessened" (Simpson 2012:2). But his conclusion is to the contrary as he argues that "the burgeoning efforts to reduce neighborhood inequality by design are laudable and refreshing, but the powerful legacies of history and the multidimensional reach of inequality present formidable challenges. In addition, the lesson for urban design coming out of housing voucher policies is that neighborhoods are not static entities that can be presumed to passively receive treatments without change; rather, like individuals, neighborhoods are spatially embedded and interdependent. Combined with the powerful forces induced by individual choice mechanisms and residential migration flows, the consequences of policy interventions to modify the environment are difficult to anticipate and even harder to control. The decent or fair city is thus a goal that will take efforts as persistent as the inequality it seeks to reduce" (Simpson, 2012:2).

But Simpson's analysis sort of misses an important point. This point is about the ideological dimensions of the transformative paradigm — these dimensions need to be very clearly defined in mixed-income human settlement experiments. The imperatives to 'disrupt' spaces of exclusion and to build towards equity, cross-class, non-racial urban community solidarity needs to be clearly spelt out and monitored in such initiatives. But a strong state and a state with capacity and strong-will becomes very important in this instance. The strength and will of the state as a whole is important if the inten-

tion is to expand and develop the mixed-income urban settlement paradigm, from the mediocrity of its current form (as the Cosmo City experiment shows) to a transformative praxis. The sustainability of these initiatives requires support and drive from a strong state. As we probably all know, the strength of the state is not simply a product of having majority support, but derives from complex interactions between the state, society and global forces of international political economy. Of course, the strength of state cannot be taken for granted, it is not absolute or guaranteed nor fixed, but rather varies according to the strength and character of 'struggles of repulsion and struggles of accommodation' in multiple arenas of power and influence. The scenarios of the political fabric within the South African state are an important factor for sustainability of initiatives like the mixed-income urban human settlements.

What makes the mixed-income paradigm of urban design imperative in South Africa is social inequality between neighbourhoods, especially in terms of the concentration of disadvantage which often coincides with race-based apartheid geography — it's a kind of geography which isolated and separated people in terms of race which also coincided with class position. Neighbourhoods characteristics such as the concentration of poverty, racial separation where predominantly white suburbs continue to be well resourced and upmarket, as well as residential and housing instability for many black people continue to feature in South Africa's urban landscape. One wishes to argue that in South Africa's situation, the mixed-income urban design paradigm, once translated into a transformative praxis of urban design, will require the state to play a strong role in focusing the direction of change, as well as subject the entire edifice to tight monitoring

and evaluation to help refine its further roll-out. The experiment of Cosmo City was very important and I will make some reflections about it in the section below in order to advance the argument that an improved version of it is needed to transform urban spaces in South Africa. But the structure and orientation has to be grounded on an unyielding ethos of transformation.

5.0 SOME REFLECTION ON THE COSMOS CITY EXPERIMENT

The claim that Cosmo City is the first mixed-use, fully integrated, sustainable housing development in South Africa still abounds. It is still described as a leading, ground-breaking prototype for the post-1994 challenges to redress urban spatial deficiencies and marginalization in South Africa. The idea behind the establishment of Cosmos City emanated from the need to relocate the communities onto land that would be "earmarked on the basis of access to economic opportunities and public transport in a mixed-income and mixed-use development". The two large informal communities involved were Zevenfontein and Riverbend. The informal settlements were characterised by substandard living conditions with limited access to basic services. "A public and private sector partnership with strong community involvement and buy-in was seen as a way to facilitate a better balance between social responsibility and financial sustainability for the long-term success of the housing development. After identifying land for public use, the City of Johannesburg had to use existing legislation to appropriate the 1 200 hectares upon which Cosmo City would be built. A protracted period of legal and consultative processes preceded the eventual development framework and technical studies for the project (www.civildesigner.com). "By 2000, the now City of Johannesburg and the Gauteng Depart-

ment of Housing, invited tenders for development proposals for Cosmo City with its location north west of Randburg. A team headed by Basil Read and Kopana Ke Matla were the successful bidders, and together they formed a company called Codevco. They then pulled together the expertise of professional teams, including consulting engineers, KV3, now known as Worley Parsons RSA" (www.civildesigner.com)

The series of court cases, which were fought over the planned establishment of Cosmo City, were costly to the residents of the surrounding areas who were trying to protect "their land values, their property rights and their rural living" from what they feared as more "crime, degradation, filth and squalor which are the characteristics of uncontrolled developments." (www.civildesigner.com) The fears were by a predominantly white middle class in the immediate surrounds. The final go ahead for the project was given in October 2004 and the pegging of the first phase began in November of the same year. Construction on the infrastructure and services started in January 2005, and the first beneficiaries took occupation of their homes in November 2005. (www.civildesigner.com). The Cosmo City human settlement was thus apportioned according to house values "comprised of a split between 4 992 fully subsidized houses, 2 959 finance/credit linked units (ranging from R180 000 to R280 000) and 3 337 bonded houses in the R380 000 to R800 000 price range" (ibid). This was intended to attract people of different income levels in order to bring togetherness across class and social status. The different housing tenure and price types in the same area were linked through schools, crèches, clinics, transport, parks and public spaces. "The project was seen as a benchmark for a new model to low cost housing that aimed to create integrated

and mixed land use closer to urban and transport centres, rather than on the metropolitan edges, which effectively reinforce marginalisation and poverty" (ibid). But today Cosmos City is slowly becoming a travesty of the noble intentions which informed its construction. "As in the rest of the country, crime is a concern in Cosmo City". In addition to this, "many beneficiaries of subsidised housing who moved into Cosmos City operate businesses from their homes as their only source of income. These businesses range from spaza shops to crèche, and even butcheries and taverns. According to department of development planning and urban management report, these businesses do not comply with town planning schemes and related by-laws, and cause unnecessary crime, noise and other disturbances. Residents are also concerned when shacks are built as they feel that when people settle illegally they engage in criminal activities and the crime levels in the area rises" (www.joburg.org.za).

The interviews conducted during the research which preceded the writing of this paper, even though not based on a representative sample given the very few families that were approached and the short time in which the interviews were conducted, also attest to this. One of the three families interviewed has a bonded house and is frustrated by what they regard as the heavy weight of the bond versus slow increases in property value which makes it difficult to sell the property and move out of the area. The other two house owners do not live with their families and are using their houses as mere lodging spaces as they rent the other rooms including the lounge. One owner (I refer to as Family one to respect the informant's request for anonymity) retorted, "I will never bring my family from Limpopo to live in this house. I can only use this house to **151**

make money, to have shelter as I am in the taxi business. My home is in Polokwane and its big and good". He was firm in his views that he can only have a decent home in the province where he was born and Johannesburg is only 'a place of work'. This relates to the issue mentioned earlier about the 'primordial public' and its contribution to divisions in the South African public. The strong connections to rural communities by some urban people in Johannesburg implies partial urbanization.

On the whole, perceptions of all interviewees about quality of life and value of properties in Cosmo City were not positive, but were negative. Of course one cannot generalise without a representative sample of the population of residents. The methodology used in the research itself is largely exploratory and relies heavily on literature reviews and the few interviews conducted were confirmed late during the research.

6.0 RE-MAPPING THE ROAD — WHAT NEEDS TO BE DONE?

The question about overcoming dualities is stubbornly persistent and seems not to have been dealt with by the Cosmo City experiment. Cosmos City is deeply divided by all factors which divide our society and despite the initial hopes that it will be mixed, it is in reality a predominantly poor working class area with isolated lower middle-class residents. The settlement was from the outset conceived as a low cost housing initiative and its advantage was that it was closer to work opportunities and was also an experiment in mixed income housing. It was not designed to be an attractive option to the enterprising middle classes who continue to leave in historically white suburbs. There is a need for advanced Cosmo City type experiments in order to deracialise urban human settle-

ments, and the experiments may need to be carefully targeted and led by an enterprising middle class. An underlying transformative praxis should run from concept to development and from development to post settlement and back to the concept. This could help avoid mixed income human settlements going derelict and loosing value over time.

From the outset, when mixed income settlements of the Cosmo City type are conceptualised, there is a need to make clear the ideological paradigm which informs the design. For instance, that they are part of a broader national struggle for transformation and should therefore be promoted among all socio-economic groups and classes who are committed to a transformed South Africa, needs to be upfront consistently. This then brings into question the role of the state, especially a 'people-centred government', in determining the kind of discipline which should be exerted over private business role players and communities who benefit from mixed-income settlement through state capital injections. What does not emerge from the analysis of the Cosmo City experiment, from the time of conception, to design and implementation, are principles of reciprocity i.e., what do participants in the scheme have to give back to the government (not necessarily in the form of money), what standards do the recipient of customised subsidies have to obey in terms of maintaining the property, expanding the value and keeping it attractive for further investments. The principles of reciprocity extend beyond the formal legal contract of a buyer and seller as they touch on the levels of conduct and diligence required from beneficiaries and bond holders to jointly maintain market qualities to contribute to the attractiveness of the area under experiment.

On the whole there seem to be a

need to look into the philosophy underlying the designs of urban spaces if the overarching intention is to advance transformation. If one were to employ the theoretical models of change and transformation used by Cornel West (1994), one would say the shift is needed in order to move away from what West calls the *"Booker T Temptation model"*. In this model the preoccupation is with the mainstream bourgeois liberal design models. This is when our designers of urban human settlements seek to stay within the norms of accepted models rather than break-ranks and put more effort on re-configuring the entire system to the very core. This is about the tendency to try not to disrupt existing spatial patterns of apartheid. In other words our approach to transformation has to change – an element of constructive disruption may be unavoidable in the end. An alternative to this is what Cornel West (1994) calls the *'Go It Alone Option'* model. It involves attempts by designers to think differently, to 'shun' the mainstream or the hegemonic establishment. As West (1994) argues, this route is difficult if not impossible. This is especially so if settlements based on completely new designs are to grow and enter into a balanced relationship with other human settlements in the country.

7.0 CONCLUSION

In essence, the paper supports the importance of a paradigm shift in urban human settlements design and it emphasises that this needs to develop into an entrenched praxis so that it becomes a way of doing things in urban development. The link between original intentions, designs and delivery should constitute an unbroken thread. This should be informed by a clear ideological perspective on transformation and this perspective should not be lost, even after the establishment of a mixed-income human settlement.

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The challenges of Cosmo City, an outstanding example of the government's attempts to re-invent urban spaces, is that the ideological intention was lost in the various stages of the development of the settlement, and post settlement monitoring and improvement has not been done. Hence the initiative is losing some of the noble values it was founded upon. The role of government and co-ordination among various spheres of government is important if the Cosmo City-type initiatives are to be sustainable and worth replicating in other urban centres in South Africa.

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