

ASOCSA2011-27

The challenge of informal settlement statistics and impact on policy and planning in South Africa

Onatu GO¹, Mbinza Z²

¹Head of Department of Town and Regional Planning, University of Johannesburg, Johannesburg, South Africa

²Lecturer Department of Town and Regional Planning, University of Johannesburg, Johannesburg, South Africa
gonatu@uj.ac.za, Tel No. +27 -11- 5596062

ABSTRACT

Purpose: The principal argument in this research is based on the fact that statistical data are very necessary for the formulation of policy and planning to target informal settlement challenge. Quantitative data is increasing being used for planning issues such as access to housing, health, socio-economic activities and infrastructural provision.

Problem of investigation: Research has shown that Informal settlement varies greatly in their sizes and by providing information on how many settlements are informal and formal, how many men and women are residing in informal settlements, what is the total number of infrastructures and socio-economic needs such as access to jobs, clinics, education facilities and open space, planners will be guided and equipped to adjust or improve policies towards these vulnerable group of urban residents. The question that will be answered is: To what extent can the collation of quantitative data on informal settlement assist planners and policy makers in the policy making process in relation to informal settlements in South Africa?

Design/Methodology/Approach: This investigation was based on primary and secondary data with great emphasis on the analysis of Census 1996 and 2001 as well as Community Survey of 2009. The study used Geographic Information Systems data. These findings were contextualise in Johannesburg as a case study because this happens to be one of the municipalities with high rate of urbanization and attendant housing shortages. The sporadic increase in the number of households living in Informal Settlement cannot continue to be neglected or unabated without accurate data for monitoring and evaluation.

Findings: This investigation found out that data on informal settlement can help to mitigate service delivery protests and resistance to relocation that is being witnessed.

Value and Originality: The study identified gaps in informal settlement policies resulting from government neglect of the role of quantitative data in addressing the phenomenon as compared to other developing countries.

Conclusion: There is need for public policy makers and planners to collate data on informal settlement for monitoring, evaluation and effective service delivery and provision

Key words: Informal settlement, quantitative data, population, policy and Johannesburg.

1. INTRODUCTION

“Give me statistics and I will give you everything”
Napoleon Bonaparte 1 (1769-1821), Seligman (1933)

The principal argument in this research is based on the context that statistical data are very necessary for formulating policy dealing with informal settlements. Statistical data, which will be used interchangeable with quantitative data, are prime source of justification, which shows that phenomena can be substantiated. It is of immediate and practical utility (Hearth and Downie, 1965). Often research is conducted on limited scale, not to test a theory, but to uncover information vital to help in solving a practical problem. The usefulness in solving problem has made the application of statistical methods very vital in all fields of learning. Banerjee (1999) argues that appropriate settlement policy depends on the validity and reliability of the data provided. The meaning of this is that the more reliable and valid the data, the better it can assist in policy formulation, hence valid and reliable quantitative data plays a cardinal role in this regard.

Proper planning and organization of things in space cannot be effectively carried out without relevant data and information. Quantitative data is increasingly being used for planning issues such as housing, health, socio-economic activities and infrastructural provision. These key services that keep the urban environment functional cannot play the expected roles with regard to development if data availability is lacking (SACN, 2004). By providing information on how many settlements are informal and formal, how many men and women are residing in informal settlement, what is the total number of infrastructure and the socio-economic needs such as access to jobs, clinics, education facilities and open spaces, planners will be more equipped to adjust or improve their policies towards these vulnerable group of urban residents. Recent research has shown that there is limited scope in understanding the relevance of quantitative data in relation to informal settlement in South Africa (Siliga, 2003). This is because government at times collects statistical data and frequently uses it to satisfy its political priorities in terms of satisfying election needs and for demarcation of territorial boundaries. Little consideration is given to socio-economic issues and the spatial distribution of informal settlements in relation to these data gathered. This compels concern civil societies and planners to argue with regulating authorities on the need to balance their

various input in the policy-making process with statistical data concerning these issues. There is also conflicting interpretation as to the definition of informal settlement as compared to “informal dwelling” backyard shacks” as depicted in both 1996 and 2001 census in South Africa (SSA, 2001). The 1996 census collapses informal dwellings on serviced sites with those in “squatter” settlements into one single category (Huchzermeyer, 2004).

This combine classification portrays an unclear terminology, which permeates the South African literature on housing (ibid). The justification here is that a good understanding of this scenario about appropriate interpretation of informal settlement and relevance of quantitative data will serve as yardstick for any anticipated development in terms of upgrading and improvement of infrastructures. Data collected on informal settlement will also assist the ongoing monitoring and evaluation interventions to support the programme. Hence, it is very crucial at this stage of South Africa’s democracy to be aware of the significance of quantitative data in policy formulation and implementation concerning informal settlements, as this will be of great benefit to the vulnerable low-income group residing here and the government. This research should also be understood against the backdrop of the call by the former Minister of Housing Lindiwe Sisulu reiterate that:

“I am to provide people with a home that they can be proud of, instead of just dumping them in a township with no amenities” (Engineering News, 2004). The emphasis being laid here is that “all informal settlements will be rehabilitated” and that plans are underway to identify owners and register all shacks as this would go a long way towards ensuring viable human settlement rather than just townships. This registration is nothing more than the search for relevant quantitative data, which will guide the formalization processes. The incessant outbreak of fire being recorded in almost all informal settlements in recent times endangering both life and properties will be mitigated. These incidents are due to excessive compaction of buildings and lack of access routes for fire rescue officers in time of emergency. Hence, the compilation of data on informal settlement is imperative as it will address the issue of the population, where the settlement is located, user and number of infrastructure thereby assisting planners and policy makers in monitoring, evaluating and forecasting of the type of amenities to be provided. The study contributes to knowledge on the relevance of using statistics on informal settlement policies and planning. It unpack effort to mitigate informal settlement phenomenon as it bears a lot on urban poverty, exclusion and marginalization.

Research problem and its settings

In an attempt to explore the above stated objectives it is imperative to formulate questions that will be addressed by this research. This includes: To what extent can the collation of quantitative data on informal settlement assist planners and policy-makers in the policy-making process with relevance to informal settlements in South Africa? What lesson can be derived by reviewing the validity of census 1996 and 2001 on issues relating to informal settlement in South Africa? Significantly, answering the above questions will shed some light on understanding the significance of statistical data on informal settlements and policy formulation to address the issue. One of the gaps that has been found in informal settlement upgrading that informed this research investigation, especially in the

context of South Africa is lack of reliable quantitative data to assist in implementing sustainable upgrading projects.

Aims and objective of the study

This investigation portrays the relevance of Census 1996 and 2001 in the classification of informal settlement in South Africa. This study will widen the knowledge and expertise on the use of quantitative data on issues relating to informal settlement policies interventions. It will be of great relevance to policy-makers, planners, statisticians and other related disciplines on issues relating to urban poverty, social exclusion and marginalisation which impact on the economy as a whole. The study identified gaps in informal settlement policies resulting from government neglect of the role of quantitative data in addressing the phenomenon as compared to other developing countries.

Research Methodology

The research looked at the use of statistical data in informal settlement policies in South Africa. The most appropriate method for this research will be the case study. Case study is a scientific method of investigation that will assist to contextualise South Africa experience in the use and application of quantitative data on informal settlement policies in view of what is obtainable in Brazil, India and Kenya. Case study research is preferred in this context because this investigation deals with “how” and “when” question (Yin, 1994). This research method assisted in this investigation because the focus is on a contemporary phenomenon with some real life context (ibid). It is basically explanatory research with some advantages and disadvantages that were dealt with in later chapter. The census data of 1996, 2001 and the Community Survey of 2007 will also form import resource to the research.

Theoretical framework and Literature Review

The historical development of statistical ideas and techniques as regards their practical application has been relatively little studied (Owen, 1976). Thus, Stigler, (1973) cited in Owen, (1976) has noted that in the eleventh century the Arabic doctor Avicenna laid down the seven rules of experimentation of human subjects, including a recommendation for replication and the use of controls and a warning of confounding variables. The term ‘data’ often used to denote statistical material derived from the Latin work, which is, literally translated as “giving things” (Irvine, 1979). The term statistics is derived from Latin word root ‘status’, which signifies a state in the political sense has a long history. The act of policy formulation and planning using statistical data dates back to the existence of man on earth during pre-historical times. The first exploit of the importance of quantitative data is recorded in the work of the lord God to Noah before 2000 B.C. “Take with you seven pairs of each kind of ritually clean animal, but only one pair of each kind of unclean animal. Take also seven pairs of each kind of bird. Do this so that every kind of animal and bird will be kept alive to reproduce again on the earth” (Good News Bible, 177:11). Census is an exercise concerned with the counting of the total number of people living in any given geographical territory with defined boundaries. It is a

branch of advanced mathematics called statistics. Shaw and Miles (1979) noted the earliest census carried out in Egypt around 3000 B.C to determine the resources for the construction of Great Pyramids. The essence of this exercise was to inform

Policy concerning the necessary resources for this project. In England, the three most important attempts at enumeration of population all had a physical purpose, namely: the Doomday Survey of 1086, the Poll Tax of 1377 and the Duty on Marriages, Burials and Baptisms of 1695 (Ibid). As far as 1793 population statistics were available in South Africa the first reliable census was taken in 1865 (Wood, 1979). This was followed by the census of 1904, which marked the Union of South Africa, and ever since 1911 the census has been a regular exercise in South Africa. Some of the early problems encountered in the continent were due to high level of illiteracy and lack of trained manpower to carry out the exercise. Some of the early recorded census are Egypt 3000 B.C; Tanganyika, 1957, Tanzania, 1957 and 1978; Uganda, 1959 and 1969; Kenya 1962 and 1969; and Nigeria 1962 and 1973 (Ibid). Bureacracy, which is based on rationalizing organization for optimum efficiency, is found to make extensive use of recorded information and statistics (Weber, 1964). This information assist bureaucrats in both policy formulation and implementations. Forester (1989) questions that in a World of poor information and limited time to work on problems how would careful analysis of alternatives be possible? President Yoweri Museveni of Uganda once noted that without adequate information planning is useless (Statistics South Africa, 2004). This is based on the progress, which the country recorded in the treatment of HIV/Aids. Information is very important in this context because the progresses was brought about by proper record of the total number of infected people in every community and in every hospital as people were open to talk about their status, this assisted in devising appropriate comprehensive intervention strategies to mitigate the disease. In his comment on the relevance and need for Census in the area of socio-economic needs, the Director General of Statistics South Africa, Pali Lehohla stated that democracy will not succeed where statistical information is not available (SSA, 2004). This view was equally supported by the former Minister of Finance Republic of South Africa, Trevor Manuel, who concluded that we only know who are the poor, where they are and how they live, how to plan for them if we have data concerning them by populations. In his view, if 'one cannot measure it, one cannot manage it' (SSA, 2004). Information based on both local and national survey is very important as it makes it possible to formulate and implement realistic policies on housing standards, costs, re-development, re-location and forecasting of future trends (UNDESA, 1976). The provision of socio-economic needs such as housing, health and education can be difficult to provide not only because of lack of finance but due to limited data (Siliga, 2003).

Problem of informal settlement definition and general characteristics

Definition of an informal settlement varies from country to country and depends on a variety of defining parameters (Siliga, 2003). The definition of informal settlement is very important because it gives insight and understanding on the concept, which will be useful in view of the role of quantitative data for policy making process concerning it. According to

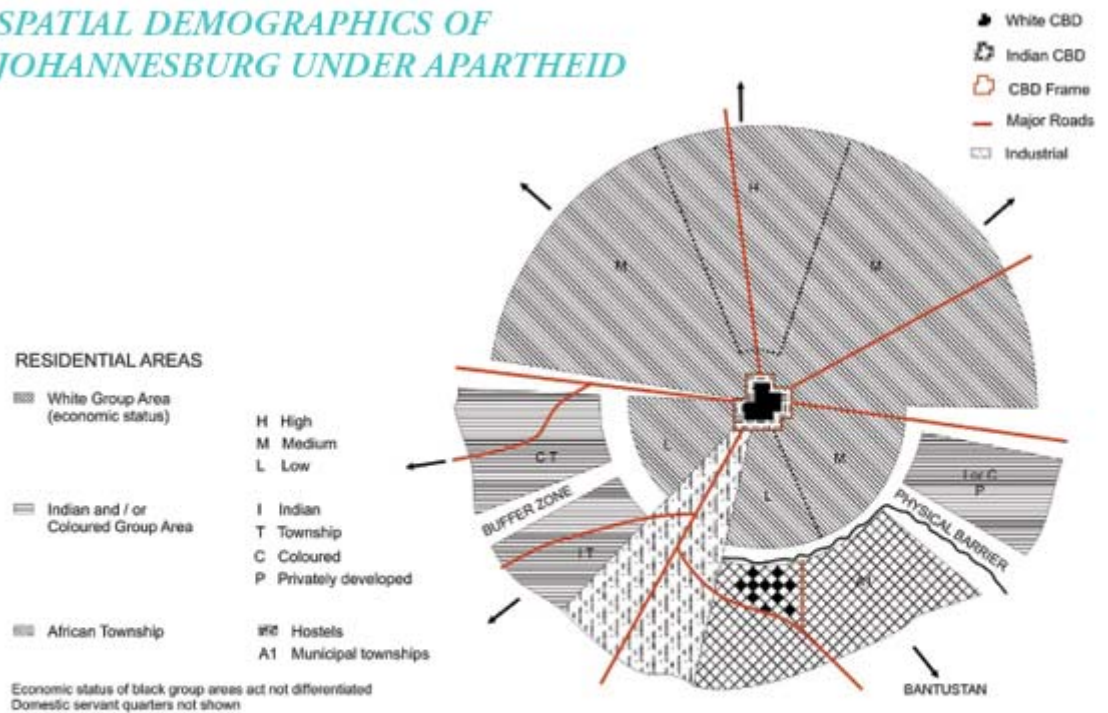
Srinivas (1991 cited in Onatu, 2004:45) informal settlement is defined as residential area in an urban locality inhabited by the very poor who have no access to tenure right and are forced to “squart” on vacant land either private or public. Huchzermeyer and Abbott (1999) defined informal settlement as urban low-income settlements that come about through unofficial occupation of land. This implies no legal right to the land. Not only is legality difficult to define, but also many unplanned settlements mix legal and illegal characteristics (UNCHS, 1982 cited in Kasarda and Pannell, 1993:84). Informal settlements are noted to be lacking in basic municipal services such as water, sanitation, solid waste collection, electricity, roads and social services. Informal settlement is also defined as

settlement which may present different forms of informality in relation to urban development (Huchzermeyer, 2004). Angel (2000) defined it as settlement that developed outside of the law through invasion, through illegal subdivision of land without proper permission, and through illegal sale or cession of land to which the vendors have no alienable rights. They are usually low-income areas and are commonly referred to by a wide variety of names, such as: ranchos in Caracas; callampas (and more recently campamentos) in Chile; favelas in Rio de Janeiro; barriadas (more recently pue blos juvenes) in Lima; villas misarias in Buenos Aires; colonias proletarias in Mexico – city; barong-barons in Manila, kwetlas in Rangoon; gacekondou in Isthambul, and bidonville in French speaking countries and mukhukhu in South Africa. Informal settlements according to Harrison (1992) represent an inseparable reality.

The Study Area

Johannesburg is the largest and most populous city in South Africa, with nearly 3.9 million population in 2007 (Community Survey, 2007). It is the provincial capital of Gauteng, the wealthiest province in South Africa, having the largest economy of any metropolitan region in Sub-Saharan Africa. Johannesburg is the source of a large-scale gold and diamond trade, due to its location on the mineral-rich Witwatersrand range of hills. Johannesburg is a divided city: the poor mostly live in the southern suburbs or on the peripheries of the far north, and the middle class live largely in the suburbs of the central and north. Around 20% of the city lives in abject poverty in informal settlements that lack proper roads, electricity, or any other kind of direct municipal service. Another 40% live in inadequate housing with insufficient municipal housing.

SPATIAL DEMOGRAPHICS OF JOHANNESBURG UNDER APARTHEID



Reproduced by permission from R. J. Davies, "The Spatial Formation of the South African City," *GeoJournal* Suppl. no. 2 (1981): 59-72, reprinted in A. J. Christopher, *The Atlas of Apartheid* (London: Routledge, 1994), 107, fig. 4.2.

Figure 1 Spatial Demography of settlement in Johannesburg

Johannesburg is one of the world's most cosmopolitan cities. The gold rush of the late nineteenth century drew people from all the ethnic groups of the sub-continent, as well as Europe, American and Australians. As the city grew, traders and entrepreneurs flocked in from India, China, Japan and East, West and Central Africa to the city to seek a better life (Moshia & Cavric, 2006). It was declared a permanent settlement in 1896 on the back of the discovery of gold in 1886 and was declared a city in 1928 (Johannesburg City Council, 2008). Today, Johannesburg is the country's premier industrial city and centre of finance and commercial activities. According to Community Survey 2007, City of Johannesburg recorded the second highest population increase with 20.6% after Midvaal local

municipality with 29.1%. This is due to high level of in-migration to the city from all other parts of South Africa in search of jobs and other livelihood means. The resultant effect is pressure on housing, social infrastructures and urban sprawl as people has to seek living accommodation under precarious circumstance resulting in informal settlement, land evasion and illegal occupation of both public and private land in and outside the city. About 180 informal settlements, comprising 200,000 households in and around Johannesburg have been identified (Draft IDP (2011/2012)).

Informal Settlement in South Africa: Characteristics and Statistics

Informal settlements in South Africa constitute both rural and urban informal settlements. These settlements must be seen as manifestation of broader social, economic and political process that are beyond the control and choice of the individual households (Huchzermeyer, et al, 2004). Informal settlement remains eyesores across major cities in South Africa. They constitute non-conventional housing built without complying with legal building procedures. These settlements are usually built at the edge of cities where land is cheap and neglected (Victor, 2009). These informal settlements are often better located than the housing development to which the government seeks to relocate them. The urban poor usually use salvage materials like wood, tins, corrugated iron and others to build these settlements. Others comprises of traditional materials such as mud brick, a compact earth blocks, building made of scaps, cardboards or plastic sheets (Kasarda and Parnell, 1993). It is very difficult to obtain a reliable figure of informal settlement backlog in South Africa. Statistics South Africa in Census (2001) enumeration designated an area as informal settlement by using one category of definition and classification for informal dwelling/shack NOT in backyard. This definition collapses shacks on service sites with shacks on unauthorized informal settlement (SSA, 2003). The Census enumeration (2001) distinguishes households based on three dwelling types formal, informal and traditional.

Formal dwelling comprises of, house or brick structure on a separate stand or yard

Informal dwelling comprises, shacks in backyard and NOT in backyard. This includes makeshift structure not erected according to approved architectural plan.

Traditional dwelling are a hut and structure made of traditional materials.

The above classification of Census 2001 is considered to be too ambitious because the collapsing of shacks on services sites and authorized informal settlements is out of context (Huchzermeyer, 2001). In the same vein Statistics South Africa in 2007 Community Survey claims that in 2007 there were about 1.2 million households living in informal settlement in South Africa. At another extreme Statistics South Africa argues that families living in informal settlements decreased from 16.4% in 2001 to 14.4%.

Meanwhile, 3 out of 9

of South Africa's provinces have higher figures of households living in informal settlements. For example, Free State has 18.4%, Gauteng 22.7% and North West 23.8% while Limpopo has 5.6%, Eastern Cape 8% and KwaZulu-Natal 8,6% recorded the lowest percentage of households living in informal dwellings. By contrast, estimates of the number of people

housed inadequately in South Africa are possibly higher (i.e above 1.5 million) than the Statistics South Africa estimation (Misselhorn, 2008 cited in Victor, 2009). Misselhorn remarks that figures of informal settlements are always used as the foundation for counting, and not the number of sub-families, which might live in a single dwelling. Stats S A (2007) guessed that there were about 65113 families in informal settlements in Cape Town in 2004 but, the City of Cape Town disputed that there were about 94972 families (Misselhorn, 2008 cited in Victor, 2009). See Table below.

Table 1: Total population by Province-Censuses 1996, 2001, and Community Survey 2007.

Provinces	Census 1996	Census 2001	% Change	CS 2007	% Change
Eastern Cape	6 147 244	6 278 651	2,1	6 527 747	4,0
Free State	2 633 504	2 706 775	2,8	2 773 059	2,4
Gauteng	7 624 893	9 178 873	20,4	10 451 713	13,9
KwaZulu-Natal	8 572 302	9 584 129	11,8	10 259 230	7,0
Limpopo	4 576 133	4 995 534	9,2	5 238 286	4,9
Mpumalanga	3 124 203	3 365 885	7,7	3 643 435	8,2
Northern Cape	1 011 864	991 919	-2,0	1 058 060	6,7
North West	2 936 554	3 193 676	8,8	3 271 948	2,5
Western Cape	3 956 875	4 524 335	14,3	5 278 585	16,7
South Africa	40 583 573	44 819 778	10,4	48 502 063	8,2

Source: Community Survey, 2007:6

The census results showed that the population of South Africa increased from 40,5 million in 1996 to 44,8 million in 2001. The Community Survey has returned an estimated population of 48,5 million, showing an overall increase of 8,2% since 2001.

The above figures are based on the new boundaries.

The largest percentage/rate of increase in population between 2001 and 2007 was in Western Cape with 16,7%, followed by Gauteng with 13,9%.

Eastern Cape, Free State and North West experienced an increase of less than 5%.

Post Enumerations Survey and Reliability of Informal Settlement data

Post Enumeration Survey (PES) is undertaken to determine the degree of undercount or over count in a population census, and to evaluate the quality of data collected during the census (Statistics South Africa, 1996). This also impacts on informal settlements as it helps to indicate whether the data on households living under the condition of informality are accurate and correct. In 1996 this exercise was undertaken immediately after the census, around November and December. The questionnaire used for the PES was a much shorter version of the census questionnaire. It includes question on age, gender, marital status, population group, home language and level of education (SSA, 1996). Respondents were also asked whether or not each individual in a particular household had been counted during the census and if so whether they were counted in that household. The aim of this is to crosscheck back to achieve more reliable and uniform data from the enumeration instead of sole reliance on the first round of the census. The result of the PES is matched with the census initial figure to help to determine the extent of the validity. According to the findings the matching of the results was very straightforward in areas with formal address as compared to difficulties in areas without precise address as witnessed in most informal settlements.

Table 2. Adjusted population figures by provinces as measure of reliability.

Category	Estimate	Lower	Upper
Provinces			
Eastern Cape	6,436,763	6,286,402	6,587,125
Free State	2,706,775	2,665,303	2,748,247
Gauteng	8,837,178	8,520,018	9,154,338
KwaZulu-Natal	9,426,017	9,030,906	9,821,128
Limpopo	5,273,642	5,244,376	5,302,907
Mpumalanga	3,122,990	3,081,917	3,164,064
Northern Cape	822,727	812,071	833,384
North West	3,669,349	3,608,191	3,730,507
Western Cape	4,524,335	4,439,010	4,609,601

Source: Statistics South Africa 2001. In the above table KwaZulu Natal has the highest population in South Africa followed by Gauteng as well as Eastern Cape.

Table 3: Informal Settlement in 70 selected Municipalities in South Africa

Province	Municipality Code	Count of Informal Settlement Polygons
Eastern Cape	EC121	378
Free State	FS172	208
Gauteng	GT02B1	625
KwaZulu Natal	KZN225	647
Limpopo	LIM362	135
Mpumalanga	MP303	227
Northern Cape	NC091	28
North West	NW373	179
Western Cape	WC023	201

Source: Informal Settlement Study Atlas 2009/10; Department of Human Settlement South Africa.

In the above table it can be seen that KwaZulu Natal has the highest number of Informal Settlement and this followed by Gauteng and Eastern Cape. This statistics has impact on the Housing subsidy allocation to the various Provinces, especially with the nature of Topography in KwaZulu Natal it attracts huge amount of revenue for bulk infrastructure for low-income housing and informal settlement upgrade.

2. CONCLUSION

This research raised a number of issues on the application of quantitative data on informal settlement as it will be relevance to policy makers and planners as well as the general built environment professionals in South Africa. The study by analyzing the Census 1996, 2001 and Community Survey of 2007 shows the importance of using quantitative data in informal settlement programme. The struggle daily lives of informal settlement and the typical challenges they face due to peculiar nature of the environment they are living can be improved if we know how many they are and their composition as well as need analysis. The government challenge for an informal settlement policy is to build and ensure inclusive relations between the local state and the organized structures of the informal settlement residents, that is, the civil society in all issues, especially policy-making mechanism. For this to be effective there is need to know the reliable number of residents in informal settlement and this has remain a gap in South African Human Settlement policy. The collapse of shacks on service site with informal dwelling described as one without approved architectural plan is a very ambiguous interpretation by the Census of 1996 and 2001.

Without equipping themselves with adequate data and statistical information, can both parties be able to make meaningful input into policy-making process concerning informal settlement?

3. REFERENCES

- Angel, S. (2000) *Housing Policy Matters. A Global Analysis*, Oxford University Press, London.
- Department of Human Settlement Republic of South Africa: Informal Settlements Study Atlas Project 2009/2010
- Downie, N.M and Hearsh, R.W. (1965), *Basic Statistical Methods*, Happer and Row, London.
- Draft Integrated Development Planning 2011
- Engineering News (2004) pp17
- Harrison, P. (1992) 'The policies and politics of informal settlement in South Africa: A historical perspectives' *African Insight* 22 (1) 14-21.
- Huchzermeyer, M. (2001) *Housing the poor? Negotiated housing policy in South Africa*. *Habitat International*, 25 (3), 303-331.
- Huchzermeyer, M. (2004) *Informal Settlement and Urban Policy in South Africa and Brasil*. Africa World Press.
- Onatu, G.O. (2004) *The role of quantitative data on informal settlement policy formulation*. An unpublished M.Sc thesis submitted to the University of Witwatersrand.
- Shaw, M. and Miles, I. (1979) 'The social root of Statistical Knowledge' in Irvine, J.et al (eds) *Demystifying Social Statistics*, Pluto Press.
- Siliga, N.R. (2003) *The role of Quantitative data and expert knowledge in informal settlement policy making: Lessons from India, Kenya and Brazil*. An Unplished M.Sc thesis submitted to the University fo Witwatersrand, Johannesburg.
- Statistics South Africa (1996) *Census: Post Enumeration cite* <http://www.statssa.gov.za/> assessed on27th of May 2011.
- Statistics South Africa (2001) cite <http://www.statssa.gov.za/> assessed On 27th of May 2011
- Statistics South Africa (2007) *Community Survey Basic Result cite* <http://www.statssa.gov.za/> assessed on27th of May 2011
- Victor, T. (2009) *The Challenge of eradicating informal settlements in South Africa by 2014. The Case of Seraleng Sustainable Human Settlement, Rustenburg Local Municipality, North West*. A thesis submitted for M.Sc in Housing at University of Witwatersrand.
- Woods, R. (1979) *Population Analysis in geography*, Longman Group Limited, New York.
- Yin, R.K. (1994) *Case Study Research: design and methodology*. Applied Social Research Method Series. Vol.5 Sage Publications
- <http://www.businessday.co.za/articles> cited on the 20th of May 2011 at 8.00am
- <http://www.joburgnews.co.za/2004> cited on the 20th of May 2011 11.00 am