Efficient Urbanisation: Leveraging the City for Sustainability

Introduction

East Africa is one of the fastest urbanising regions in the world and home to vast natural resources. In the developing world, urbanisation brings the promise of economic growth and development and along with it, the threat of environmental degradation and socio-economic disparities. This inspires apprehension rather than anticipation in the developing world as rapid, unchecked, and unplanned urbanisation evolves as a precursor to the urban population predicted by current trends.

In order to address this comprehensively it is important to note that local governments are empowered by the nation's commitment to its priorities. National priorities are in turn influenced by regional interests. The region is one of the least urbanized in the world as the population has historically been primarily rural and agricultural rather than urban and industrial. In addition to the rural agrarian legacy are pastoralist and other highly migrant groups which are sometimes touched by conflict. Numerous peace efforts, absorption of migrant communities into cities, industrialization and business growth and development in cities, rural - urban migration and growing young population has seen the regions cities transforming into the continents fastest growing cosmopolitan urban areas.

This rapid growth of towns brings with it the challenge of adequate service provision and economic opportunity. There exists a threat to environmental sustainability due to sprawl around cities and along emerging infrastructure grids coupled with lack of coordinated plans that integrate regional, national and local priorities imposes encroachment and the spill over effects of human activity into wildlife habitats, wetlands, forests and other environmentally valuable and sensitive areas.

Efficient planning, investment and development have the potential to manage and reverse the negative impacts of unplanned rapid urbanisation. Current lessons and best practices from other cities in the African continent, Latin America and Asia indicate that planning ahead to accommodate and cater for this explosive growth in cities is preferable to attempts at implementing urban upgrading systems and structures after the fact.

Sustainable Development in the Global Context

The world's most vulnerable and irreplaceable resources are arguably located in Middle Income Countries (MICs) and Least Developed Countries (LDCs). As such, sustainability when viewed in light of this takes on a different meaning from the text book definition. In the developed world, sustainability is often a matter of making choices that are better for the environment. However, for the citizens of MICs and LDCs, that choice is a luxury that many cannot afford and often do not consider. It is with these considerations in mind that the United Nations drafted the Rio Declaration on Environment and Development to address the issue of sustainability.

First among the twenty seven (27) principles that were identified as being central to sustainability and development was the recognition that "Human beings are at the centre of concerns for sustainable development…entitled to a healthy and productive life in harmony with nature". This statement has a number of implications, the main one being that human beings are both the means and the end in the quest for a sustainable present and future by crafting and applying policy that offers practical, realistic solutions (Environment, 1992).

Policy as a Framework for Sustainability

The role of policy in promoting and implementing sustainable development is vital because it acts as a framework through which action and progress can be designed, implemented, measured and evaluated. It provides the means through which key elements and targets can

be identified, prioritized and assessed through the use of indicators and similar analytical tools. For instance, focusing on satellite cities as an urban upgrading approach addresses overcrowding of the inner urban core and seeks to relieve this pressure by acting as a drainage system that eases existing congestion and acts as a detour for anticipated in migration. In this case, policies that enable satellite and edge cities to act as viable growth absorption areas can result in measurable effects and provide a means by which sustainable development can be assessed.

The domino effect caused by policy decisions is growing beyond local, regional, and national boundaries and increasingly having far reaching global implications and consequences. This has become especially apparent in the recent years as concepts and policies implemented in one part of the globe significantly affect other distinctly different areas. While addressing policy on a national or global level may be a somewhat daunting task for most individuals and development practitioners, there is still much that can be done on a local and regional level.

Solutions lie in the issues themselves and in the weaknesses lay strengths if the right corrective measures are implemented. Policy as an approach then becomes the tool for incorporating sustainability into development, and the results of policy; the means through which the effectiveness of it is judged. Unlike other conceptual elements, policy allows us to test a notion and view the tangible consequences of the idea.

In the recent years, The Norwegian Nobel Committee has awarded the peace prize to individuals who spearheaded local efforts promoting long term sustainability by addressing poverty, economic development and natural resource protection. This is an indication that responsible stewardship of the limited resources we have available to us is vital in ensuring the harmonious coexistence of global citizens both now and in the future. The future generations we think of in our relentless debate over sustainable development will judge us by the policies we enact and our willingness and dedication see them successfully implemented.

Sustainability Risks
Environment
Sprawl around cities and along emerging infrastructure grids coupled with lack of plans at regional, national and local levels imposes encroachment and the spill over effects of human activity into wildlife habitats, wetlands, forests and other environmentally valuable and sensitive areas. According to the United Nations Environmental Programme (UNEP), over 50% of the globe's forests have disappeared. The existing stock is on the decline at a rate of 50,193 square miles or roughly 35 soccer fields per minute. A good number of these forests are located in Latin America, Africa and Asia where slash and burn agriculture, logging and the use of wood for fuel are a necessity because they provide the means for survival.

It is estimated that by the year 2020, the developing world will be home to close to 80% of the world's urban population (UN-Habitat, 2003). As middle and least developed economies get on the fast track and catch up with developed nations, making the case for sustainable practices will be an uphill task. This is due to the fact that affluence and the increased ability to consume is associated with preferences of citizens in wealthier economies. A case in point is the increased affluence and buying power of the middle class in populous countries like India and China. If that population leaned towards a meat-based diet accompanied by personal vehicle use as the primary means of travel as is the norm in developed countries, the combined ecological footprint would create a noticeable impact.

There are a number of reasons why the matter of practicality is central to the subject of sustainability in the developing world. First, in order to make sustainable choices one must not only have the will to make those choices but also have economic ability to do so.

Secondly, developing countries are on the same unsustainable development path that developed countries took in the past, and one significant problem is that there is greater potential for rapid, unchecked, irreparable damage than there was before, in part due to technological advances and also prior reductions in scarce natural resources by prior development. Lastly, human beings act in self interest and while most agree that sacrifices ought to be made, the issue of free riding and willingness to pay present cooperation problems on all the levels; local, regional, national and global.

Equity
Density accompanied by squalor, rapid, unchecked, and unplanned urbanisation evolves as a precursor to the urban population predicted by current trends. Ignoring the obvious is the main reason why the urban poor have been a marginalized lot with not much control over their circumstances. Who better to, if they are willing to be active participants, engage in the process of identifying viable economic incentives for development than the person caught in the daily struggle to make ends meet?

In Cairo for instance, those without the means to obtain conventional housing often turn to cemeteries where in a maze of mausoleums, the living co-exist with the dead an area that has now come to be aptly known as "the City of the Dead". Many of those born into situations such as these encounter a world where their births are not officially recorded, their presence not recognized in census data, their place of residence practically non-existent and their welfare not minded. In other words in a conceptual sense, not only are they less equal than everybody else, they simply do not exist.

Economy
Socio-economic gaps and disparities will be harder to bridge later if left unchecked and unanticipated. Governments at local, national, regional levels lose potential revenue and economic growth and development opportunities due to the rise in informality resulting in what is sometimes referred to as "dead capital" (De Soto, 2003). In developing countries, the urban poor are a source of cheap labour that is not supported by adequate wages and health benefits. For lack of better options they are forced to live and operate in squalid conditions without proper housing and no basic services such as sewer, water, electricity, roads and other infrastructure. Many of them live in informal settlements not officially recognized as residential areas on planning maps. Some of these areas also have a tendency to be located in waste lands or areas not suitable for human habitation such as dump sites, seasonal riverbeds and valleys vulnerable to flooding.

Opportunities for Efficient Urbanisation
There also exist opportunities presented by well planned, efficient urbanisation mechanisms including:
- Integrating and coordinating planning infrastructure, investment and land use plans on regional, national and local levels
- Anticipating density in cities and managing sprawl beforehand by implementing efficient urban growth tools and incentives
- Incorporating environmentally sustainable measures into future land use plans to transform and preserve outlying areas as urbanisation occurs
- Activating the city's potential as economic engines for growth and development to create opportunities that foster social sustainability
- Leveraging the city's opportunities for durable competitive advantage to effectively channel investment
- Promoting liveable urban spaces by including the green agenda into current planning and building practices

The example below is an example of risks and opportunities presented by infrastructure investment and outlines the manner in which governments and local authorities can anticipate and leverage the effects that follow.

Table 1: Infrastructure Investment Impact, Risks and Opportunities

Stage 1	**Immediate impact:** Reduction of travel time into the Central Business District **Result:** Conversion of outlying communities into bedroom communities for activity centered around the core city **Property development type:** Primarily residential **Sustainability Risk:** Environmental impact is felt initially due to unchecked sprawl **Opportunity:** Development of planned residential areas. In the city of Nairobi, Kenya Mombasa Road improvement in the late 1970's was accompanied by the development of planned residential development in South B&C. These residential areas were able to absorb the consequent need for housing, hospitals, schools and commercial facilities.
Stage 2	**Medium Term Impact:** Increased capacity for movement of people, investment, goods as the road emerges as a commercial corridor. **Result:** Independent satellite cities **Property Development Type:** Function will upgrade from primarily residential to commercial and possibly industrial centres. **Sustainability Risk:** Economic as a result of job – housing imbalance if effort is not made to meet employment needs **Opportunity:** The Malaysian government anticipates the emergence of new townships immediately following infrastructure development. Their strategy to leverage this trend is to facilitate the creation of planned townships along the infrastructure grid beforehand rather than after the fact.
Stage 3	**Long Term Impact:** Evolution into a functional Metropolitan Area if infrastructure upgrades are extended **Result:** Availability of commuter options into the Central Business District. The emergence of proactive economic development strategies by local authorities competing for investment and jobs. **Property Development Type:** Redevelopment and Transit Oriented Development (TOD) **Sustainability Risk:** Social impact due to population influx and growth in larger cities is felt if aggressive economic growth strategies are not in place **Opportunity:** Cities like Johannesburg seeking economic transformation often link development to real estate and infrastructure upgrades. An example is hosting Olympics, international soccer events, international conventions and other events at scale. Hosting major events signals a city's branding upgrade to a metropolitan area able to manage and accommodate the strain of increased capacity

Leveraging the City for Sustainability
Case Study: Johannesburg, South Africa
South Africa is divided into nine provinces. Of these, Gauteng is the most densely populated with a population of roughly nine million according to the 2001 census. The City of Johannesburg is located in Gauteng Province. Johannesburg serves as the political, industrial and economic capital for the province and in 2001 was home to about 3 million residents. The city recently underwent major renovations in preparation for the 2010 World Cup which made South Africa the first African country to host the championship.

Johannesburg's history as an industrial and economic centre can be traced back to 1886 when mines were launched to extract gold discovered in the area previously. Soon after the proverbial gold rush occurred and spurred rapid growth and expansion. The city was subsequently dubbed "egoli" translated "place of gold". For the multitudes of black mine workers who served as the labour force in the gold mines however, the day to day life in

Johannesburg was anything but golden. These workers were limited to the most gruelling work in the mines while the skilled tasks or managerial jobs that paid three or four times more were limited to their white counterparts (Katz, 1995).

After toiling for long hours as underground miners they retired at the end of the workday to crowded living quarters called hostels. The workforce was made up almost exclusively of rural migrant male black workers who had left their families in the country and come to the city to provide the much needed labour in the mines. The hostels were in deplorable condition and consisted of small rooms with communal lavatories and over the decades lacked basic services such as water, power, sewage and drainage facilities (Johannesburg Housing Company, www.jhz.co.za).

Land use in Johannesburg as in the rest of South Africa was dictated by apartheid and the remnants of this separatist policy are still evident in geographic housing patterns today. Townships occupied by blacks in South Africa have long functioned as "crude dormitories for labour"[i] to the economically dominant white occupied parts of town. Soweto is perhaps the best known of these designated townships and was a prominent scene of resistance during the apartheid years. The city government acknowledges the following observation made on the economic disparities that exist in Johannesburg as a result:

> "The demographics of Johannesburg will, for years to come, continue to reflect the skewed heritage of apartheid. At the end of the apartheid era, in 1994, average annual per capita income in Randburg, one of the wealthier "white" areas, was R53, 927, whereas that in Soweto was R8, 358" (Allan et al 2001)

The economic disparities in South Africa are also fueled by another major factor in the upgrading discussion. Security of tenure in the country's urban centers or the lack thereof, is one of the main contributing factors to the proliferation and continued existence of substandard urban housing both in formal townships and in informal settlements. The Land Act of 1913 mandated that black South Africans who made up more than 80% of the total population no longer had the right to own or rent land outside of their ethnically designated reserves which later came to be commonly referred to as "Homelands" or "Bantustans". The Homelands were restricted to approximately 10% of the country's land mass while the remainder was reserved for Whites, Indians and Coloured South Africans (Durand-Lasserve and Royston, 2002).

After World War II the Group Areas Act was introduced in 1950 and made geographical segregation based on race official. The act induced mass evictions of black urban residents as they were relocated to the black group areas which later came to be known as black townships. In 1952, the Natives Act which was commonly referred to as the Pass Law was passed and it required all black South Africans to show proper identification if they traveled outside of their designated homelands. If they were not able to produce the *dompass* (Afrikaans for 'dumb pass'), and if they failed to secure a work permit within 72 hours on arrival to a city, then they were 'deported' back to their rural homeland(Durand-Lasserve and Royston, 2002).

These severe restrictions on tenure fueled the growth and expansion of informal housing in South Africa and particularly in urban centers. Although the Group Areas Act and the Land Act were repealed in 1991 by the Abolition of Racially Based Land Measures Act, little has changed in regard to reversing some of the negative effects the geographic segregation wrought (Rakodi, 1997).

For example, as a result of the history and current uncertainty on tenure security a number of township residents prefer to invest in houses in their rural homelands rather than make improvements to their homes in the city[ii]. National policy pertaining to tenure has evolved since the first democratic elections in 1994. While homeownership is recognized as a desirable outcome of housing and land reform, it is not by any means touted as the best and preferred alternative.

The Development Facilitation Act of 1995 states that one of the intended results of policy reform is to ensure security of tenure and provide as expansive an array of tenure options as possible. This broad range of options provides a variety of alternatives that people can choose from and tailor to their economic situation and individual housing needs. However, the goals and the results of housing policy reform have been somewhat contradictory. While its aim was to provide for a wide variety of tenure options such as individual ownership, group ownership and rental choices, the implementation focused primarily on construction of new units and Greenfield development (Durand-Lasserve and Royston, 2002).

In South Africa, the holistic urban upgrading approach to housing and service provision has been attempted in some areas and particularly those that require multi-faceted solutions. This comprehensive approach has resulted in progressively sustainable urban upgrades when considered in contrast to other African cities. One of the areas targeted is the Alexandra ('Alex') Township. It is located in north eastern section of Johannesburg and is one of the poorest townships in Gauteng and is commonly referred to as the 'Dark City' due to its lack of electricity, infrastructure and overcrowding. In 2001, it was estimated that the township which is just over 800 hectares or 1 square mile, was home to roughly 350,000 residents with 70% of the population being under the age of 35 (Wilson, 2001).

Alex was one of the townships designated as black townships in 1912 and its growth was attributed to its proximity to main roads and jobs in the wealthier areas of Johannesburg. Over the years, Alex has been exposed various urban management efforts. In the 1960's and 1970's the prevalent action taken was forced resettlement to other townships like Soweto which only served as a redistribution channel for the congestion problem in Alex. Around the same time, other plans such as building multi-family high rises and mid-level hostels housing 2,500 people each were attempted but were largely unsuccessful. The reasons for this were the high project costs and opposition from displaced residents (www.alexandra.co.za).

The rate of unemployment is estimated at 32%[iii] for active job seekers compared to and an aggregate of 60% when unemployed non-jobseekers are included. In response to the inadequate housing and lack of basic services that had prevailed in Alex, President Thabo Mbeki announced the Alexandra Renewal Project (ARP) in 2001 that was focused on human development and improving the physical landscape of the township. A budget in excess of 1.5 billion Rand was allocated to the project which was set to be implemented in 7 years and is still ongoing. The project consists of the following areas:

- Housing Projects
- Urban Services: This includes infrastructure improvements, engineering, planning and environmental services.
- Local Economic Development
- Social Infrastructure
    - Education
    - Health
    - Heritage
    - Public Safety & Security

- Sports & Recreation
- Welfare

Among the key improvements made is the construction of 3,000 housing units, infrastructure improvements as well as a variety of tenure options for relocated residents. The data below was gathered in a survey of 2,500 households carried out by 70 interviewers to measure progress and gather the residents' opinions on opportunities for improvement.[iv] While the survey documented the residents' responses to various questions regarding the renewal project, it did not include substantive information on any suggestions they had for improvement.

Figure 1: Prime Problem Areas

|	Dissatisfaction	Improvement	
	%	%	*Prime*
Availability of Houses	85	6	*problem areas are*
Quality of Houses	83	3	*those with*
Cemeteries	78	7	*high levels*
Overcrowding	78	11	*of dissatis-*
Resolving Ownership of Houses	73	4	*faction and little*
Quality of Water In The River	73	15	*perception*
Employment Opportunities	73	12	*of improve-*
Littering And Dumping	66	13	*ment in the*
Quality of The Air	65	16	*last 2 years.*
Parks	60	14	
Entertainment Facilities	55	5	

Source 1:http://www.alexandra.co.za

In 2005, four years after the renewal project was announced, a majority of the residents were dissatisfied with the availability and quality of housing based on their assessment of progress made in the last two years. The data says that the issue of resolving the ownership of houses is a tenure security problem that 73% of the residents were still dissatisfied with. The perceived improvement in the resolution of overcrowding can be attributed to the addition of housing units in the area although curiously enough, the availability of houses is still viewed as a problem.

The tables below identify aspects of the program that Alex residents were satisfied and dissatisfied with. Social services such as the number of police stations and education and some infrastructure investments like electricity and water supply were viewed as satisfactory. Housing quality, quantity and ownership of houses were viewed as being unsatisfactory. The results of the survey are telling because if the residents think that there is greater opportunity for improvement in a certain area, then that translates to them having ideas on how the situation can be improved.

Residents were most satisfied with water supply and quality, the number of schools and primary school education, and the number of clinics
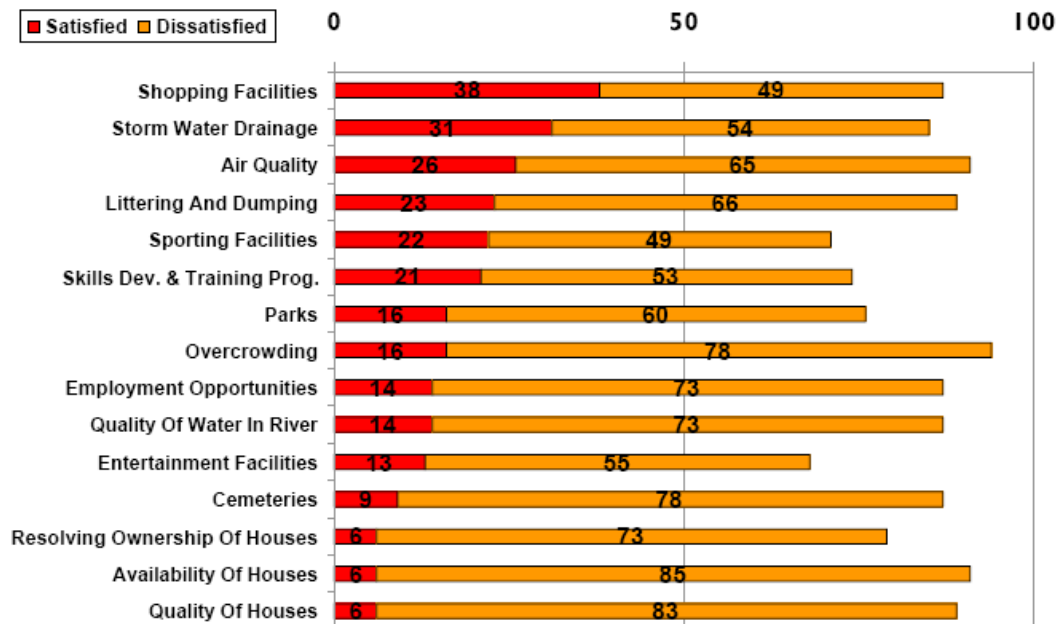
Figure 2: Program Evaluation Survey

Source 2:http://www.alexandra.co.za
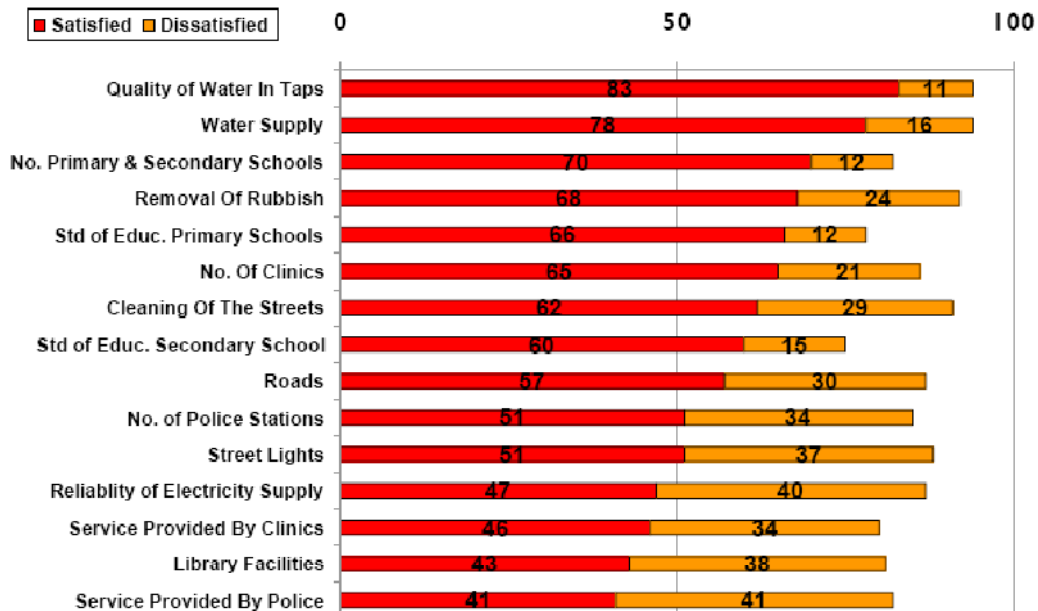
Residents were most dissatisfied with the availability and quality of housing, ownership resolution, overcrowding, and employment opportunities

Figure 3: Program Evaluation Survey cont

Source 3: http://www.alexandra.co.za

The Alexandra Development Forum (ADF) is a group of stakeholders that includes practitioners and the community and is aimed at addressing development issues such as those identified in the survey by involving the community in the decision making process. While the progress they have made is relatively modest (3,000 units in an area with 350,000 residents), the goal to provide a range of services that includes housing and social amenities is a step towards providing a comprehensive long term solution to the housing problem in Johannesburg.

Conclusion

The goals of sustainable development, which consist of equity, economics and environment can be translated into tools for effective urban upgrading that address all or most of the following elements:

- Leveraging community assets by using existing sociological networks to seek out and facilitate community based initiative and action
- Addressing poverty by focusing on the economic activities and the livelihoods of informal settlement residents. The upgrading process should provide job training, jobs and economic development opportunities to the community
- Using the least invasive approach such as prioritizing in-situ (in place) upgrading. In-situ upgrading should have first priority unless deemed impractical or hazardous to the residents' well being
- Exploring diverse and practical financing structures based on the economic mechanisms of the area.
- A diverse array of housing types and tenure options should be made available both to those interested in home ownership and those seeking affordable renting options
- Political empowerment should be part and parcel of the upgrading goals as marginalization only serves to exacerbate the proliferation of slums
- Project Maintenance and Evaluation: Periodic assessment and evaluation after the project is complete. Public health, education, gender empowerment, community driven economic development should be on the agenda to ensure that the upgrading efforts are expanded and maintained long after the initial project is completed.
- Planning for future growth and expansion is vital to ensuring the stagnation and eventual cessation of informal settlement and slum proliferation in the world's urban centers

However, the longevity of this framework can only be achieved if tenure security is the foundation upon which it is built. Regulation sets the standards for tenure security in formal markets. For the urban poor in developing countries who exist in the informal system, policy that is designed to benefit them is a vital component of the solution to slum proliferation and other symptomatic manifestations of their unmet needs.

In his article entitled Housing the World's Poor: the Four Essential Roles of Government, David Smith states that slums are an indication of societal failure rather than market failure. The reason for this is that because market forces will never provide housing that the poor can afford, it is up to the society and thus the role of the government to ensure the creation and maintenance of sustainable affordable housing. The first step in this process, he insists, is ensuring that the residents of informal settlements have access to flexible and secure tenure options that suit their needs. Large scale improvements over time will only occur if strong incentives for improvement and a clear process by which the urban poor can invest in their own current and future well being exist. Ensuring secure tenure therefore, is the basic building block upon which sustainable urban development can successfully and continually occur.

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[i] http://www.unu.edu/unupress/unupbooks/uu26ue/uu26ue0g.htm
[ii] Information derived from an interview with Nkatoke Shoshana on January 5th 2007
[iii] The average unemployment rate for residents of Gauteng who are active jobseekers is 29%.
[iv] http://www.alexandra.co.za/downloads/oppres_benchmarksurvey_pres_0508.pdf

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