SUSTAINABLE URBAN DEVELOPMENT OF
METROPOLITAN JOHANNESBURG

The Lessons Learned From International Practice

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This paper consists of an overview of programmes supporting sustainable planning and management in the City of Johannesburg one of the most important social and economic hubs of the transitional Republic of South Africa. Following from this is an analysis of the experience identified as most appropriate for Johannesburg City and its metropolitan region (Gauteng).

This case study is used to highlight efforts and lessons learned from the international project „Designing, Implementing and Measuring Sustainable Urban Development” (DIMSUUD) which have intended to contribute to new solutions for sustainable urban development through a collaborative, multi-disciplinary, and participatory approach combining research, urban design, and capacity building.

DIMSUUD (http://sustainability.ethz.ch) is carried out jointly by the Swiss Federal Institute of Technology (ETH), Massachusetts Institute of Technology (MIT), Chalmers University of Technology (Sweden), University of Botswana, University of the Witwatersrand (South Africa) and the Catholic University of Santiago de Chile. Another partner was the United Nations University (UNU) at Tokyo.

The project has enabled a global overview of core problems, providing a synthesis of realizable strategies and offering both a scientific forum and an “urban field laboratory” for joint learning. The strategies developed will not only help improve the conditions in the case study cities (Gaborone, Johannesburg, Santiago de Chile), but will also provide working examples so that other cities can learn from and adapt and adopt appropriate “best practices”.

INTRODUCTION

The Sustainable Development paradigm and urban sustainability

The notion of sustainable development was first articulated at a global level through the work of the World Commission on Environment and Development (WCED). The Commission was tasked by the UN in 1984 to embark on a search and consultation process to help map the path towards development in contexts of environmental limits to the 21st century and beyond. The outcome of the process was the report titled Our common future (WCED 1987).

It was this report that articulated a globally derived definition of sustainable development as: "...development that meets current needs without compromising the ability of future generations to meet their own needs.” (WCED 1987:43).

As we all know, most of the developing countries are still going through urban transition, and will retain a significant rural population for many decades. This means that sustainable development programmes must reinforce urban-rural linkages, unlike in most highly industrialised countries where urban transformation has nearly stabilised, and cities no longer deal with the effects of rapid urbanisation, but with a combination of other demographic issues and the impacts of global trends.

Sustainable development therefore calls for an ecosystem approach with the following elements: Inclusion of people and their activities in the ecosystem; Viewing ecosystem structure and function at multiple scales; Use of ecological boundaries to define environmental planning, assessment and management of units; Adaptive management strategies, based on feedback from new information, to improve management and policy under conditions of uncertainty; Participatory management involving all stakeholder groups; Integration of science and human values in formulating goals for protecting ecosystem; Recognition of ecosystem limits to action i.e. defining and seeking sustainability; and finally Geographically comprehensive systems – levels of analyses of interactions among physical, chemical, biological, and social components.

Urban sustainability-Johannesburg

The apartheid political system of separate development created great injustices and disrespect for human rights in many spheres of South African society. With the introduction of
democracy in 1994, the country, with the support of the international community, began the task of reconstructing a society in which the previous system had intensified racist attitudes and practices. The entire government institutions had to be restructured, and the massive task of replacing unjust and racist-based laws began. Ironically, democracy has been the great leveler. City systems such as Johannesburg are coming under growing urbanisation pressures, as being currently experienced globally. Increasingly, populations seeking liberation from their impoverished conditions converge on the city, intensifying demands for access to economic activity, basic services and environmental amenities.

As shown in the Table 1, the driving forces and trends are mainly focused around social challenges, while the environmental concerns are not addressed in the same extent. The reason for this is that the social problems and inequalities are assessed to be of more direct interest for the transition into a sustainable development in Johannesburg. Without responding to the mentioned social challenges, it would be very difficult to achieve any long-term environmentally sustainable development.

In this chapter we examine the status of urban sustainability in the City of Johannesburg starting off first by giving a general overview of the city; secondly examining the challenges, goals and opportunities for urban sustainability in the city; thirdly looking at indicators of urban sustainability. The chapter concludes by examining the future prospects of achieving sustainability for this big metropolis.

**JOHANNESBURG: LOCAL AND NATIONAL SETTING**

The city of Johannesburg in South Africa is situated about 1800 metres above sea level on the plateau often referred to as the Highveld. This may well have been the home for the earliest ancestors, and for at least 100, 000 years the place has been inhabited by humans. The city was established in 1886 in follow up to the discovery of the gold reef of the Witwatersrand.

Through a period of just over a century, the area has been transformed from hunting and subsistence livelihoods, to commercial farms, to a gold-prospecting camp, mining town and a centre of manufacturing to its current status of a regional and global financial-services and trade hub of the continent and the world. It is now recognized as one of the cities under the gama-category of world-class cities (based on three key categories of alpha, beta and gama global-cities).

The municipality constitutes an area of 2 300 km², of which half is occupied by buildings and infrastructure. There are still some green reserves with bush land or trees, some wetland but very few and small water bodies. Through intensive care in private and public open spaces, the city suburbs are characterized by greenery of trees, shrubs and flowers which has translated to an artificial forest within the surrounding grasslands. The city experiences typical South African weather with comfortable summers (average temperature 24°C) and mild to cold winters (130°C). Snow and freezing temperatures are extremely rare. Droughts are common even though the average rainfall is 700 mm per annum. The Highveld region is famous for its summer afternoon thunderstorms.

According to the 2001 Population Census the population of the city today stands at 3.2 million people. This is about 7% of the national population (at 44.8 million). The number of households is about 1 million, which means that an average of 3.2 persons in each. Over the last 40 years, trends have been towards fewer young children (0-14) and aged (55-upwards) with majority of the population being between 19-39 years old. Population growth is estimated to slightly over 1.0% (COJ 2002b), which is far below the standard replacement fertility rate. This has been attributed to the impact of HIV/AIDS and the decreasing fertility rate. Through its history, this great mining and industry city has always attracted migrants from a large hinterland, including other African countries. There is a considerable amount of illegal immigrants which makes it difficult to determine actual numbers of the immigrants and the population in general. Population distribution is rather skewed. The Soweto township alone holds a very large proportion of the city’s population (estimates for the 90s, vary between one and six million: Musike 2000). However, given the more recent Census 2001 data of 3.2 million for the Greater Johannesburg, it is likely that Soweto’s population could be between 1.5 and 2.0 million people.

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 Europeans, American and Australians. As the city grew, traders and entrepreneurs flocked in from India, China, Japan and Eastern Europe. In recent years, many West, East and Central Africans have also descended on the city to seek a better life in Johannesburg, putting their own distinctive stamp on the city’s profile.

The racist ideology, which shaped the politics of the country until the power shift of 1994 when the country got independence, divided the population into four main groups: African/Black, Coloured, Indian and White. A little more than one decade after the apartheid policy, was abandoned; the city is still characterized by strong ethnic segregation.

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Even though ethnic mixing has started (for example through Africans moving to the inner city and the leafy, well maintained northern suburbs, with better access to the city’s amenities) most people have remained in highly segregated areas and townships. For example the dense and deteriorated African areas of Soweto, Alexandra in north-east and Orange Farm in the south still have close to 100% Africans. There are also areas with about 90% Indians (Lencasia) or Coloureds (Eldorado Park) as well as 70-80% Whites (e.g. Roodepoort North, Randburg and Sandton) (Statistics SA 2003).

Institutional Framework

Since the crucial regime shift in 1994, both Johannesburg and the Republic of South Africa have gone through a process of institutional changes. The current constitution of South Africa was approved in 1996, two years after the first democratic elections when an ANC-led coalition came to power.

The country is divided into nine provinces and each province is divided into several authorities (municipalities and rural districts). Consequently, there are three tiers of governance with different legislatures which are independently elected (national, provincial and local authority).

At national level, planning and plan implementation systems is handled by the Department of Provincial and Local Government. This includes spatial, economic, administration and budgeting/financial plans. It is responsible for the enforcement of the Municipal Systems (2000) and Municipal Structures (1998) acts.

Johannesburg is the capital of the Gauteng Province, which is a small and densely populated, and highly urbanized area of South Africa. The responsibilities of the provincial legislature are a number of provincial concerns including formulation of laws, linking local stake holder’s concerns to the national decision-making centre and improving the local influence in the national Parliament.

Besides the formal government structures, there are a variety of public-sector and NGO organizations which collaborate with the gover

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<th>Table 2. - Key geographic, demographic and economic attributes of Johannesburg</th>
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<td><strong>GENERAL</strong></td>
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<td>Population (mid 2000)</td>
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<td>Average annual population growth rate</td>
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<td>Daily commuter influx into inner city</td>
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<td>Cross border shoppers a year (international)</td>
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<td>Cinema seats</td>
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*** Up to date figure from Census 2001 shows a population of 3.2 million people. Source: Adapted from CDE 2000: 141.

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<th>Table 3. - Institutional levels relevant for planning in Johannesburg</th>
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<td>Institutional level</td>
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<td>Local Regions</td>
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<td>Electoral ward</td>
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nment structures. At city level it is found that the City of Johannesburg has gone through a series of institutional changes since the first democratic local elections of 1995. From being many independent municipalities with very diverse conditions, it became a federation of four local councils, and then after large financial losses it again transformed into today’s “unicity” with one common tax base. Figure 1. shows a model of the institutional structure of the city.

**Local level institutions**

The city is composed of eleven regions with about 300,000 inhabitants each. Each region consists of a number of wards covering populations of between 5,000 and 35,000 people. Although the eleven regions are under the political administration of the central city council they have their own management structures. The regional administration is headed by a director who is appointed by the Council. The key regional responsibilities include: health, housing, libraries, sports and recreation, social services and a few other services. At the Ward level, there are committees formed headed by a Ward Councilor who represents the ward in the city council. In addition to the above there are also a variety of influential organizations operating in the city.

**Planning Practice**

The main comprehensive planning instrument, decreed by national legislation, is the Integrated Development Planning (IDP). The IDP framework has been informed by the internationally agreed Agenda 21 Policies, with stakeholders’ participation and multidimensional sustainability as key principles. The City Development Plan 2001-2002(CDP 2001/02) was carried out in the context of the IDP framework - a strategic plan for performance-oriented management of the city.

**Urban Morphology and land use**

The Witwatersrand gold reef has sustained a heavy belt of mines and other industries stretching from east to west through the city of Johannesburg. The old core of the city, the central business district (CBD), is situated close to where the first mining camp was located on the northern side of the ridge. From this point, the city was laid out on a classical grid pattern by the colonial planners.

Johannesburg has been shaped by nearly one century of racially-social engineering. The apartheid politics culminated with the Group Areas Act of 1950, which guided spatial segregation between the four identified racial groups. The early pattern of poorer residential areas in the south of the city and wealthier areas and well serviced areas in the north, was reinforced and consolidated as not only differentiated by class, but by ethnicity. The wealthy white middle and upper class created sparse, green suburbs for themselves along the northern and northwestern sectors, while other groups were dispossessed towards southwest. The evacuation of Sophia town in 1955, then a vibrant freehold for Africans and Coloureds with a prosperous music and cultural life, is a well known example of the tough line from the authorities (Beavon, 1997, Beall 2002). Besides the social segregation and inequities,
the apartheid era also left very tangible tracks in the physical environment. Like other South African cities, Johannesburg is characterized and well known by the typical "match-box" housing - large areas of townships on the outskirt, filled with rows of identical one-storey concrete-block type houses. In Soweto, the standard plot was set to 40 by 70 feet (260m2) with the house in the centre. The floor area ratio in these areas can be estimated at 0.1-1.25 which is almost ten times lower than European inner cities (Vestbro & Algren 1999). But the population density is very high, with up to 300 people per hectare (COJ 2000- State of the Environment).

One of the urgent spatial and built environment issues today is the decay of the inner city. Many companies and services have already left the CBD and moved to new commercial centres to the north. High crime rates have been one of the driving forces of this trend.

A breakdown of the land use within the city is as seen on Fig 2, which shows the uses in percentage terms. As expected, residential development tops the list followed by other land uses, small holdings, mines and quarrying etc.

The provision of Social and Economic Services

Housing and land ownership

Until 1986, Black South Africans were prohibited from owning property. As a result, individual ownership rights are now viewed as a matter of political redress. Leasehold and other alternative that have existed since long time ago, are often associated with ethnic discrimination. Therefore the government's strategies to provide housing and secure tenure are mainly based on subsidies for individual ownership (Royston and Ambert 2002).

The dominant dwelling type in Johannesburg (as in most of South Africa) is the house on a separate stand/plot, making up half of the dwellings. Formal backyard dwellings - rooms, lias or houses - is the second largest type, followed by flats in block of buildings. Informal and illegal settlements is a big issue in Johannesburg as in other South African cities. The city has mapped 89 informal settlements with estimates of 170,000 families living there (Thale 2002). There is also a considerable number of people living in illegal dwellings in backyards. Official statistics show that more than one fifth of the population live in informal dwellings (MDB 2003).

Health, education and employment

The human development index (HDI) was utilized to assess the level of development within the city. The statistics show that while the HDI of black residents is far below the white counterparts the latter are at par with high income developed countries. According to the HDI it is theoretically better to live in Johannesburg than elsewhere in South Africa or Sub-Saharan Africa (Coj 2002b)

(a) Health

The health issue in Johannesburg, as in the rest of Sub-Saharan Africa, is dominated by impacts of the HIV/AIDS pandemic. It is estimated that more than 10% of the city's population is infected and the number will continue to increase by about 26,000 persons annually. The most exposed group is black

Figure 2. - Johannesburg: Current activity patterns

![Map 2: Current Activity Patterns](image-url)
women 25-29 years old. AIDS related diseases will most probably prevail as the greatest cause of mortality far in the future. This is an issue affecting not only the direct victims and their families, but also causing a huge damage on the economy and the society as a whole (Coj 2002b).

Since the apartheid era, high qualitative health care is very unevenly distributed in the city. There is an agglomeration of clinics in the CBD, while the Deep South hardly has any (Coj 2000- State of the Environment). The Johannesburg General Hospital, with 2000 beds in the city centre, is very modern and well-equipped. Baragwanath, situated in Soweto, is said to be the largest hospital in all of Africa serving 5000 patients a day, but with very limited resources (Encyclopedia Britannica 2003). There are several actors providing the city’s health service. Recently, the province launched a new system for primary health care on a district level. The system was designed to address the problem of overcrowding at the public hospitals. Now, there are many local clinics, community health centres and mobile clinics run by the regional administration. There is also a central health information system to provide the planning and logistics (Coj 2003-Health). Finally, there are a large number of private hospitals, for those who can afford more expensive health-care services.

(b) Education

The school system in South Africa is administered through the national and provincial governments. Public financing provide basic services and salaries for teachers, but all public schools also charge varying types and amounts of fees for both capital and operational expenditure. Thus, there is a clear connection between the parent’s financial means and the quality of their children’s education. The vast majority of schools and universities are public, but the share of private ones is growing.

Among both private schools and universities, qualitative differences is huge (IMC 2003). However, there are ongoing initiatives to standardize the quality of education through the National Qualification Framework under the South African Qualifications Authority. Other initiatives are also being undertaken to restructure the education system with introduction of a new curriculum.

Low skills levels among Johannesburg’s population is highlighted as a severe obstacle to increasing economic growth. To-date, 25% of the city’s adult population is technically illiterate, another 39% have less than grade 12 education, and only 4% have a degree (Allan, Gotz and Joseph, 2001). The levels of skills in the city is much lower than what is required for the city to operate effectively. The city, and the country as a whole, has experienced a major brain drain in the last decade as some professionals have chosen to emigrate.

(c) Employment and income

A public survey done for the City Council of Johannesburg showed that job creation was regarded as the first priority problem (Coj 2002 - Joburg 2030). The unemployment level is about 30% and has been increasing over the last few years in particular due to ongoing reorganizations from the secondary and primary sectors as well as poor matching of skills and opportunities in the tertiary sector which is predominant.

Income distribution in South Africa is extremely unequal. The Gini coefficient is almost 60% which internationally is very high. Only three other countries in the world have a worse distribution compared to that of South Africa (CIA 2002). This aspect is significantly magnified within Johannesburg as the key hub for the generation of wealth and economic growth of the country and the region.

Transport

The city operates a municipal bus system and a separate private bus company serves the connections between Alexandra, the city centre and Soweto as part of a national transport subsidy programme (paid to private bus operators but excludes the taxi mini-buses). The buses cater for 13% of passenger transport and as much as 29% is catered for by the burgeoning mini-bus-taxi industry. Use of the private passenger vehicles is quite high. The average time is estimated at 72 minutes, which means that many people do spend many hours per day traveling between their homes to the work place (Coj 2002b).

There is a rail system, operated by Metrorail (a parastatal), with trains connecting to some of the townships and surrounding cities like Pretoria and Ekurhuleni. The northern parts of the metropolitan areas are not covered by this system. Park Station, which is located at the centre of the city, is said to be the largest train station on the continent (Coj 2003).

Economy, public finance and economic planning

Johannesburg’s economic development has followed the pattern of many advanced industrial countries after World War II. The recovery of Europe created a global demand for manufacturing industry products, which triggered a rapid employment growth in Johannesburg. The post-war boom lasted until the oil crisis in the mid-70s, but since then the growth never really recovered. Unlike many other developed countries, there was a dramatic decline in manufacturing while the tertiary industry progressed slower than for the high-income countries. Regardless of this, Johannesburg is still a leading industrial and economic city of South Africa and even on the African continent (Beali 2002).

With a GDP per capita of about US$3400 (2001 estimates, according to CIA 2002), South Africa is at the top among African countries and close to the upper quarter of all countries in the world. Being the world’s largest producer of platinum, gold and chromium, the mining industry has been the main growth driver during the 20th century, with Johannesburg as the natural centre.

Today, South Africa has a well developed tertiary economy most of which is centred around Gauteng conurbation (Johannesburg, Pretoria, Ekurhuleni and other smaller municipalities). Almost half of the employees in the formal sector work in the service sector, which contributes up to two thirds of the GDP. The primary sector represents only 3% of the GDP, even then it is still the main occupation for the large proportion of the population. Over 50% of the population still lives below the poverty line.

Johannesburg is seen as the economic hub of Sub-Saharan Africa. The city hosts a network of investment and support systems covering almost the whole continent. Its cross product represents about 16% of national GDP. Three out of four of all corporate headquarters include finance, business services, trade and manufacturing.
An annual growth rate of about 0.9% is expected over the next ten years, which is very low in international comparison. One possible explanation for the low growth rate is that Johannesburg does not include its informal sector in the GDP. The informal sector has grown significantly. In 1999 it was estimated to contribute 16% of the total employment, mainly in the retail trade sector. But there are other factors affecting the economic growth of the city. Low literacy and skill-levels, high crime rates and inadequate infrastructure are highlighted as obstacles to growth (CoJ, 2000b).

Public finances

The government revenue in South Africa is fully based on taxes and duties. One third comes from personal income tax and a quarter from value added tax (VAT). In expenditure, education takes the largest share (about 20%) followed by social security and welfare (15%) and health (12%). Interest from loans, mainly domestic, stand for as much as 15% of the expenditure (RSA Budget 2003). Most services and development investment are paid through the provincial and local governments. The Province of Gauteng has a budget of about R23 billion (US$1.8 billion). 95% of the revenue is from national allocation, but there is some revenue from gambling tax and vehicle licences. More than 80% of the provincial spending goes to education, health and social services. Different development projects like the Alexander renewal and the Gautrain were budgeted to R2.2 billion for the financial year 2002/3.

The city of Johannesburg has a budget of around R11 billion (US$0.8 billion) based mainly on service charges. The budget can be divided into two blocks: approximately 60% for the core administration and the rest of the twelve UACs (Utilities, Agencies and Corporate agencies). The core administration is financed mainly by property rates, regional service levies and other interests and charges. This finances the work at the municipal departments and regions. Some of the UACs are financed through their own charges, even if many are dependent on the council subsidies or grants which have limited opportunities of charging full service costs. This is expected to increase over the coming three years (CoJ 2002a).

Economic planning

The economy of Johannesburg reflects strongly successive waves of development and decline, which have seen the city move away from mining and industry production towards an economy fundamentally based on services and trade as well as some high value manufacturing. This trend is in line with global trends and the city's comparative advantages. While crime and unemployment are seen as major stumbling blocks for economic growth in the country, the city is promoting small and medium enterprises (SMMES) as strategies to aid economic development in the city, reduce unemployment and help the citizens of Johannesburg become more market-connected.

Johannesburg has a rich history of developing and implementing sophisticated and advanced programmes, which deliver economies of localization. Unfortunately these economies of localization are in place for heavy, primary production sectors, most especially gold mining and iron and steel industries. As these industries decline and their contribution to GDP and employment growth decreases, so the economies of localization present in the city become more outdated (CoJ 2002a).

CHALLENGES, GOALS AND OPPORTUNITIES FOR SUSTAINABLE URBAN DEVELOPMENT IN JOHANNESBURG

Defining sustainable urban development for Johannesburg involves the synthesis of three major categories of challenges and opportunities to which the city's development will be responding in the 21st century.

Firstly, Johannesburg has articulated for itself the vision of a world class African city with the capacity to attract and retain international and local investment for economic survival of its citizen while ensuring its fair contribution to the economic development of South Africa (see for example iGoli 2010, Johannesburg 2030 and CDE 2002). In this vision, the city management has reinvented its role from the former passive control and regulation of externally-determined development processes to being an active agent and catalyst for facilitation of the right mix/scale of private sector investment from local and international sources. World class infrastructure, a rich pool of relevant skills and strong institutional management capabilities are some of the critical issues identified. The central role of crime reduction in this vision has also been clearly identified.

Secondly, as a member of the global community of cities and nations grappling with sustainability arising from past concerns with economic growth in disregard of environmental degradation and socio-economic inequalities, Johannesburg must shoulder its fair share of sustainable development responsibilities in the context of internationally- and nationally-agreed frameworks/legislation and policies. The key issues fall into the broad categories of bio-physical concerns (such as bio-diversity, energy and climate change, water scarcity and quality as well as general resource degradation/conservation) and socio-economic challenges such as poverty reduction, gender imbalances, distribution of wealth among developed and developing countries as well as equitable access to basic needs such as shelter, energy, water, sanitation, education, recreation and waste disposal.

Regional and national commitments on these issues must find actual translation into the development agenda and vision of Johannesburg in the 21st century. Agenda 21 and related Local Agenda 21, Johannesburg WSSD outcomes and commitments, NEPAD and AU frameworks, South Africa's legislation and policies on environment, land use and socio-economic growth/development (in areas like municipal structures and responsibilities, housing and services, local economic development and equity (racial-, gender- and disability-based) are some of the key frameworks and commitments in this category.

Thirdly, since Johannesburg lies at the local sphere of the governance system in South Africa, it shoulders the responsibility of ensuring the systematic translation of the visionary and global commitments to match the specific needs and resource constraints of the highly diversified and spatially segregated regions and citizen groups of the city. This grassroots factor is key to ensuring the critical support and ownership of the broader visionary and global commitment responses mentioned above. The spatial development framework
OPPORTUNITIES AND CHALLENGES RELATED TO JOHANNESBURG AS A WORLD CLASS AFRICAN CITY

Johannesburg's efforts to meet global demands

In order to advance in its position as a world-class African city, Johannesburg must ensure that it can compete favourably with its counterparts in other parts of the world. It must occupy and sustain a strong position as a destination of choice for the location of corporations and skilled professionals. The city has been recognized for being at the forefront of economic activity on the continent. It generates more than 35% of South Africa's Gross Domestic Product (GDP) and 10% of Gross Geographic Product (GGP) of the Southern African Development Community (SADC). It is also the centre of transportation and shopping in the SADC region. Johannesburg, in its position as the foremost world-class city on the continent, bears the challenge of competing with other cities internationally (Centre for Development and Enterprise, 2002).

As South Africa directs its energies towards casting off the apartheid past, it has to similarly take cognizance of changing global demands. Neglecting the latter can result in it losing its competitive edge, particularly as globalization forces increasingly take effect across the globe. According to the Centre for Development and Enterprise (CDE 2002) the following criteria are necessary for cities to ensure success for achieving international status: Strong leadership; A vision supported by key stakeholder groups in the city; A unique and marketable image; Devolution of powers and authority from national governments; Establishment of partnerships between various stakeholders that will enable the city to adjust quickly to new global demands; Public services and business-friendly environment to compete for foreign investment; Infrastructure, particularly transportation and communication; Educated, skilled and healthy citizens; Good urban governance that delivers social, economic and environmental sustainability and creating strong neighbourhoods with good quality of life for its citizens and business enterprise.

How well does Johannesburg fit the profile for a world-class city? The city vision declares that this is the goal it has set itself for the next 30 years (City of Johannesburg, 2002b). Its "Vision 2030", in turn, is supported by a Spatial Development Framework that also links it to the Integrated Development Plan (IDP) of the city (City of Johannesburg, 2002a). The IDP is a recent statutory requirement that considers status quo information and community needs at grassroots level to inform the compilation of a development plan for the city. Social, economic and environmental needs are considered in an integrated way (Department of Provincial and Local Government, 2002).

Figure 4. - Interactions between Vision 2030 and the integrated development planning process in Johannesburg

These declarations will now be examined to ascertain to what extent the city meets the criteria for the world-class position it aspires to. In 1994, South Africa moved into the new democratic political dispensation. This meant that every city and town faced the challenge of replacing an institutional organisation that served the previous apartheid paradigm. During the period 1999 - 2000 Johannesburg commissioned an extensive status quo exercise, supported by public participation from various sectors in the city. The results were used to draw up the 'Goli 2002' plan for restructuring the local government institution, as well as a ten-year vision for the city, 'Goli 2010'.

Also during this period, new planning legislation was introduced that compelled local governments to work with their communities to develop a common vision. This "Integrated
Development Plan (IDP) process considers social, economic and environmental issues for prioritisation, and develops action plans to address them in the eleven regions of the city. Despite IDP processes being poorly attended, the overall priorities that were determined nevertheless cover broad concerns that almost all communities will identify with. The five strategic priorities of the IDP are listed in Table 4.

Table 4. - Inter-relationship between the IDP-strategic outcomes and Mayoral Priorities for Johannesburg

<table>
<thead>
<tr>
<th>Strategic Outcomes</th>
<th>Mayoral Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Affordable, sustainable customer-focused delivery</td>
<td>1. Service delivery excellence</td>
</tr>
<tr>
<td>2. Economic growth &amp; development</td>
<td>2. Economic development and job creation</td>
</tr>
<tr>
<td>3. Safe &amp; secure city</td>
<td>3. By-law enforcement and crime prevention</td>
</tr>
<tr>
<td>4. A quality built and natural environment</td>
<td>4. Inner city renewal</td>
</tr>
<tr>
<td>5. Citizens enjoy an improved quality of life</td>
<td>5. HIV/AIDS</td>
</tr>
<tr>
<td>6. Financial viability and strength, Organizational development &amp; excellence</td>
<td>6. Good governance, customer care and 'Batho Pele' ('People First')</td>
</tr>
</tbody>
</table>

This exercise culminated in the IDP formally being adopted by the city at the beginning of 2002. In addition, Key Performance Areas (KPAs) were determined for the IDPs, and these are to be monitored using Key Performance Indicators (KPIs). To-date the city has completed the annual review of the IDP as well as the formulation of the second cycle of IDP and SDF for 2003/04.

Recommendations of iGoli 2002 on institutional restructuring have been implemented, with the objectives of correcting past inequitable access to basic services and to improve service provision in general. This will improve the quality of life of residents, particularly poorer communities. The city has instituted a policy that ensures households free access to basic levels of water and electricity. These deliverables go a long way towards achieving national priorities of reducing poverty and correcting inequalities, as captured in the Reconstruction and Development Programme (RDP: the primary overarching policy of the first democratic government of South Africa) (ANC, 1994).

iGoli 2010, however, was not implemented. It was agreed that ten years was too short a time frame to make significant changes. The city set out on a path to form a vision achievable in the next 30 years (City of Johannesburg, 2002b). The Vision 2030 exercise, however, was carried out in isolation from the IDP process. Further, although Vision 2030 has been informed by the research conducted for iGoli 2010, there is a bias towards economic issues.

The Vision 2030 team conducted a household survey in October 2000 to determine the most pressing concerns in the city. Uppermost in the minds of citizens was the need for employment. Fifty percent of people surveyed asked that the Council prioritise job creation. This is not surprising, considering that the unemployment rate in the city has risen above 30%.

Vision 2030 is, unapologetically, an economic vision for the city. Focus is placed on improving efficiencies for business. It conceives that local government is directed largely by national policy processes, making it primarily a "policy taker", rather than a "policy maker". This has prompted the city to investigate how it can create supportive environments for fulfilling a role as an agent for economic growth. It is envisaged that increased GGP will result in better standards of living and an improved quality of life, as measured by the Human Development Index (HDI). Furthermore, the city wants to ensure that increased GGP is shared by all; increases in salary will therefore be accompanied by increased parity. Increased GGP will also mean increased revenue that will enable the city to provide better facilities.

It must be recognised that other factors, apart from the lack of disposable income, must be addressed to ensure that citizens pay for their city services. The Auditor-General's report released to the City Council in November 2002 shows an accumulated deficit of R1.45 billion, down from a surplus of R61m in 2000. Inner city decay, poverty and the culture of non-payment have been singled out as the key causes of this decline (The Star, 2002).

Other research conducted for Vision 2030 identified high levels of crime and inappropriate skills as the major impediments in investment decisions. 'Vision 2030', the 30 year goals for the city, has adopted these concerns as 5 star priorities, in order to achieve the outcomes of increased business confidence and increased investment. The high levels of crime have rendered the city as 'a place of fear' (Centre for Development and Enterprise, 2002), and has contributed negatively to the image of the city.

To provide safety and efficiency, city efforts must be directed towards enforcement of the by-laws and building codes. The types of crime that citizens, including business, are concerned with are, however, of a more serious nature. Only steps that effectively address crimes such as armed robbery, hijackings, murder and rape will win the confidence of citizenry and business. Joint strategies with the South African Police Services, using institutions such as Community Policing Fora, will have to be devised to reduce levels of serious crime. Vision 2030 recognises the limited powers of the Metro Police, and calls for partnerships with other government policing agencies, business and communities to effectively address the problem. Effective partnership efforts will instill a greater sense of security and improve the image of the city, both in the eyes of communities and business, locally and globally.

Vision 2030 will put in place strategies that will ensure an improved labour force with appropriate skills, as measured by increased numeracy and technological literacy. It is anticipated that literacy and numeracy levels of 100% will be achieved by 2030. The need for critical strategies towards creating skilled citizens for future skills-demand in the city has been consistently highlighted. However, little attention is given to addressing employment needs of the "inappropriately skilled" populations currently unemployed or being retrained by the formal sector. Efforts to meet education and employment needs must be initiated sooner than later as the spin-offs would benefit the city both in the short- and long-term. The empowerment of the currently unemployed and illiterate will enable them to better participate and contribute in the realization of a revived world class Johannesburg.

The city will have to actively support key economic sectors, in its "economies of local-
sation' strategy. These sectors were chosen because they were evaluated to be best aligned to the city's economic vision and for their high levels of competitiveness. Despite being renowned as the 'City of Gold', the financial and business services sector has long replaced primary and secondary production, including gold, as its major contributors to GDP. The next largest contributors to economic growth in Johannesburg are transportation and communications (Centre for Development and Enterprise, 2002). The preferred sectors have thus been identified as financial and business services, followed by transport and communication. CDE 2002 concurs with Vision 2030 in the identification of the priority areas for revitalising economic growth in the city.

The vision proposes a strategy to support small, medium and micro enterprises (SMMES), but not with the same detail of support as it does for firms with larger than 50 employees. This is a major oversight, considering the high unemployment levels and the prevalence of 'inappropriate' skills that have been identified. Support for SMMES is not only essential for economic growth but would also simultaneously address social concerns of unemployment. The CDE report emphasises the need to support smaller enterprises, as most new jobs in the city have been created in the city. Whilst improving infrastructure that meets large company needs will have benefits for the smaller business, finally the city must also provide support to facilitate establishment of such enterprises.

The city wants a world-class information and data system throughout to support the service sector, rather than primary production. This requirement should be extended to support social, environmental and institutional systems. Whereas data is currently being collected, very little analysis is done to track changes and determine priorities for planning and policy making. Better co-ordination of data from the various sources in the city is required. The information must be useful and accessible to a wide range of users/stakeholders. It is proposed that a central database be set up that will be responsible for collecting core indicators for city planning and policy making, and for the public. This could be located in the Corporate Planning Unit.

Vision 2030 proposes that the city will attain higher GDP levels by exploiting economies of urbanisation. This will mean better efficiencies in labour and business infrastructure (transport, commercial space) and services (telecommunications), and increased levels of their interactions. This positive step towards a compact city is supported with a Spatial Development Plan for the city as discussed later in this chapter.

Even when improved economic growth is achieved, social and environmental impacts cannot be ignored. Although economic growth and job creation are viewed as priorities by the CDE report, improving the quality of life for the majority living in the city is maintained to be just as important. The city is just as concerned with achieving better conditions for its citizens. A primary indicator that will be measured is the Human Development Index (HDI), based on life expectancy, income and literacy. Vision 2030 wishes to attain a quality of life (as measured by the HDI) that is comparable to world class standards.

It envisages a social sector that will be adequately resourced to manage AIDS orphans. There will also be decreased mortality rates, increased life expectancy, decreased birth rate, an increased population in older groups, and increasing numbers serviced by demanding private care, thus leaving public care to concentrate on smaller numbers. There will be an increased marketing of libraries, museums, educational events and exhibitions, and access to these facilities will reach 100%. These remain in the vision as a list of noble social goals; they do not share the same levels of detail in strategy that the economic objectives do.

Vision 2030 household survey recorded that 'only 33% of people are dissatisfied with services. Vision 2030 declares that this means that service delivery is "far from a crisis". However, delivery of some services in the city is far from adequate. Almost 30% of the city population is inadequately housed, with 15% living in informal settlements and 14% in backyard shacks. Here, Vision 2030 is in conflict with the IDP strategic priority of "affordable, sustainable customer-focused delivery". Improving service levels will significantly contribute to increased HDI levels. It is noted that where the Vision 2030 falls short on addressing social concerns the SDF and the IDP have considered them priority areas in the short- to medium-term.

The objectives of the SDF are to create a sustainable urban environment, to promote urban efficiencies of various components in the city, and to ensure optimal accessibility to opportunities and city experience. Key components of the SDF are an urban development boundary (urban edge as a means to a more compact city), efficient public transport systems, strong viable nodes directly linked with the transport system, enhancement and protection of residential environments, provision of a functional and sustainable open spaces system that will conserve ecologically-sensitive areas and reduce pollution, and appropriate corridor development. Strategies and target deliverables have been developed to realise these objectives.

Vision 2030 addresses other social issues with its supporting SDF and IDP. It draws attention, for instance, to the possibility that increased disposable incomes will be accompanied by greater number of private cars. Congestion in the city has increased by 26% in the last 3 years. City efficiencies are aimed to enable citizens to access commuter transport within 60 minutes of their homes. This, however, does not compare favourably with World Bank standards of reaching work from home within 60 minutes.

The SDF will facilitate the elimination of urban sprawl by increasing densification and concentration. It must, however, be noted that some parts of the city, such as the inner city, need to be re-densified because of the severe stress it is placing on service infrastructure and on social well-being. It must also be mentioned that a presidential project is currently in place to address social, environmental and economic concerns in Alexandra which is one of the most densely settled parts of Johannesburg.

Vision 2030 also aspires towards sub-urbanisation of black townships along the lines of white suburbs. The latter, it is believed, will lead to the development of a property market in traditionally black townships. It envisages that poorer communities will be concentrated in special needs areas. The apartheid city was a divided city, and these goals raise questions about the levels of integration that the city desires. Least of all, racial segregation must not be replaced by separation along economic lines.
Due to increased disposable incomes, there is an expected increase in demand for open spaces and leisure amenities which will be generated through outdoor relaxation. No mention is made of the need for re-establishing ecosystem health and restore biodiversity. Waste is expected to decrease due to increased recycling and littering levels; waste levels will decrease because it is assumed that there will be an increase in civic pride. Outputs are based on assumptions that lack of civic pride is the main reason behind poor waste management. It must be recognised that it will be just as important to create enabling conditions such as providing adequate facilities and educating people on their rights and responsibilities. To meet world-class city standards, the city will have to achieve world-class standards of environmental management. Here again, the IPD comes to the rescue, of Vision 2030, with the key performance indicator of “percent completion of environmental management indices in line with national and international standards.”

Johannesburg is party to a collaborative effort with other cities to investigate the adoption of the City Development Index (CDI). This index was developed in 1997 as part of the United Nations Human Settlements Programme (UN-Habitat) and is used to compare development levels of cities. The CDI is composed of a multifaceted array of parameters, namely, five sub-indices of infrastructure, waste, health, education and city product, each of which is given a specific weighting. It therefore provides a picture of how the city is performing in these five areas while at the same time allowing for the comparison of cities regionally and internationally.

As mentioned earlier in the chapter, the Key Performance Areas (KPAs) and Key Performance Indicators (KPIs) of the IPD are based on the strategic priorities as defined in the IDP process, and the priorities of the executive mayor. These KPAs and KPIs serve as the scorecard to evaluate the performance of the city manager and high level management in the city. As far as institutional arrangements are concerned, the Vision 2030 process identifies the Corporate Planning Unit (CPU) for managing the process. It calls for better cooperation between spheres of government, and better networking and co-ordination between economic sectors. Annual surveys conducted by the Corporate Planning Unit will measure progress towards the high service standards it wants achieved. Any strategy that is put in place will have to address unacceptable attitudes and behaviour that contribute to poor customer service.

Within the city, strong links and co-ordination between the CPU and implementing arms of the city will have to be forged to ensure steady attainment of the 2030 goals. This must facilitate the setting up of effective partnerships. A positive link has been forged between Vision 2030 process and the planning department in the city. The Spatial Development Framework (SDF), developed by the Strategic Planning division, supports the Vision 2030 by directing spatial developments within the city towards incrementally addressing competitiveness through spatial efficiencies. Interim targets must also be declared, on the road to 2030.

It has been pointed out that Vision 2030 is a living document that invites comment and discussions for improvements (Van der Walt 2002). In the interest of meeting demands for attaining and maintaining its global position the city must and address the gaps in its present vision. It can be argued that environmental and social dimensions of Vision 2030 are addressed through the Spatial Development Framework. The task still remains, though, to integrate their components so that challenges are addressed holistically and opportunities are optimally exploited. An integrated vision will also gain support from a greater cross-section of stakeholders in the city. Appropriate resources will have to be dedicated to determining the needs and solutions in each dimension for the achievement of a world-class city.

**OPPORTUNITIES AND CHALLENGES RELATED TO GLOBAL, REGIONAL AND NATIONAL COMMITMENTS TO SUSTAINABLE DEVELOPMENT**

The Rio Summit of 1992 served an agenda-setting function, registering shifts in the global context of UN-sponsored conferences, involving debates about national models and international justice. The major international Conventions signed at the Rio Summit in 1992 include the United Framework Convention on Climate Change (UNFCCC), and the Convention on Biological Diversity. The former is to stabilise greenhouse gases in the atmosphere at levels that will not upset the global climate system (Keating 1995: viii). In 1995, the Kyoto Protocol to the objectives of the Framework Convention on Climate Change was effected in which the developed nations agreed to limit their greenhouse-gas emissions to the levels emitted in 1990.

The Millennium Declaration of September 2000 contains commitments to halve by the year 2015, the proportion of the world’s population living in less than one dollar a day, suffering from hunger or having no access to drinking water. In regard to tangible outcomes of the Earth Summit in Rio in 1992, in resulting in “a more socially just, environmentally sound, economically vibrant and politically accountable world,” the answer is said to be far from satisfactory. Many have argued that the sustainable agendas failed to sufficiently mobilise people, governments and the business community in addressing the urgent problems affecting cities and societies today and in the future. The cited barriers include different approaches of environmentalists and government planners; political and institutional context within which local communities and cities operate, as characterised by obstacles both at national and international level.

The Johannesburg Summit 2002 therefore put much focus on questions of effective implementation and the institutional/political obstacles (Doran 2002: 11). It constituted an opportunity to assess the impacts of Agenda 21 outcomes, and provided renewed impetus for implementation. It reaffirmed sustainable development as a central element of the international agenda, and a wide range of concrete commitments and targets for action to achieve sustainable development objectives. It produced three types of outcomes; the Johannesburg declaration on Sustainable Development; the Johannesburg Plan of Implementation; and Type II Partnership-commitments by governments and other stakeholders, including business and non-governmental organisations. It put forward many targets towards sustainable development.
Sustainable development in South Africa

South Africa endorses Agenda 21 and has made its aims a reality at a local level (Beeton 2002: 64). It was anticipated that the country would have a national strategy for sustainable development (NSSD) by 2002 (DPLG 2002). The Habitat Agenda and its political statement (the Istanbul Declaration) endorsed and expanded on Agenda 21 and highlighted the importance to be given to urbanisation and the related issues of land, housing and urban management. It recognises that in an increasingly urbanised world, cities are the focus of social, economic, and environmental problems, as well as the source of unique opportunities for a more sustainable world.

Both agendas set the stage to bridge the so-called “green” and “brown” perspectives on urbanisation, environment and development. According to Agenda 21 and Habitat Agenda, integrated planning and sustainable developments go hand in hand (CSIR 2002b: 16). Integrated development planning is a principal strategic and systematic planning instrument which guides and informs all planning, budgeting, management and decision-making in a municipality in South Africa (Beeton 2002: 64).

The IDPs (outcomes of integrated development planning) need to integrate areas of legislation on issues such as water, transport, waste management, energy, housing, and local economic plans, and to include representative participation of all communities and stakeholders.

The South African constitutional requirements of co-operative governance, participatory and developmental governance, and promotion of a safe and healthy environment have sustainable development as a guiding principle. The constitution further includes the right to a healthy environment as a basic human right. The Municipal Act of 2000 recognizes that it is a duty to ensure that municipal services are provided to the community in a financially and environmentally sustainable manner. The various provincial planning and development acts encourage sustainable development by promoting community involvement in all planning and decision-making processes and ensuring that the basic needs of all communities are met.

The RDP is an integrated, coherent socio-economic policy framework. It aims to meet the basic needs of people: jobs, land, housing, water, electricity, telecommunication, transport, a clean and a healthy environment, nutrition, health care and social welfare. In meeting these needs, it reconstructs family and community life in society.

The draft land use management bill is based on five principles: sustainability; equity; efficiency; integration; and fair and good governance. The National Housing Code notes the need for low-income housing to be designed for energy efficiency and with water conservation in mind; and the 1998 White Paper on Local Government sees environmental sustainability as an integral component of integrated development planning. In addition, the National Environmental Management Act (NEMA) of 1998 provides an umbrella for integrating good environmental management activities across all sectors.

The Department of Environmental Affairs and Tourism (DEAT) is currently the lead agent championing the case, particularly so as required in the NEMA. It is also spearheading the formulation of a national strategy for sustainable development (NSSD) which is still in the formative stages.

Targets/Indicators for the component

Water and sanitation - water security for all. The national water and sanitation aims to provide households with clean, safe water supply of 20 – 30 litres per capita per day within 200 metres, an adequate/safe sanitation per site, a refuse removal system to all urban households.

Energy and electrification - Electricity for all - provide access to electricity for an additional 2.5 million households by the year 2000 therefore increasing the level of access to electricity to about 72% of all households. Both grid and non-grid power sources such as solar electricity (photovoltaics) and generators must be employed.

Telecommunication - A modern and integrated telecommunication and information technology system must be provided to all schools and clinics within 2 years.

Transport - An effectively publicly-owned passenger transport system must be developed, integrating road, rail, and air transport. All privately-controlled passenger transport must be effectively regulated and controlled.

Environment - Environmental considerations must be built into every decision, and procedures must be set in place which obliges decision-makers to demonstrate what environmental consideration they take into account when considering a project. There is a wide range of legislation of which the responsibility for implementation is scattered over a number of departments, resulting in discrepancies, anomalies and ineffectiveness. DEAT only administers few of relevant Acts.

Nutrition - Every person in South Africa should get their basic nutritional requirement each day and that they should no longer live in fear of hunger. Short-term intervention should support nutrition education and the stable low-cost supply of staple foods with carefully targeted income transfers and food subsidies.

Health - All policies affecting health must take into consideration that SA is an integral part of the Southern Africa region and has regional responsibilities to prevent and to combat the spread of disease.

National Health System (NHS) - The aim is to draw all the different role players and services into the NHS. This must include both the public and private providers and services and must be organised at national, provincial, district and community levels. Each province must have a Provincial Health Authority. NHS must be driven by the Primary Health Care (PHC) approach.

Sexual Health and AIDS - A programme to combat the spread of STD’s and AIDS must include the active and early treatment of these diseases, plus mass education programmes which involve the mass media, schools, and community organisations. AIDS education for rural communities and especially for women must be a priority.

Social Security and Welfare - A comprehensive non-racial, unitary and democratic welfare system including a negotiated social security programme, must be introduced to aid the distribution of goods and services within the framework of public responsibility.

The National Welfare Act of 1978, Social Act of 1978 and Acts dealing with child and family welfare must be changed based on the principi-
OPPORTUNITIES AND CHALLENGES RELATED TO THE GRASSROOTS FACTOR IN SUSTAINABLE DEVELOPMENT FOR JOHANNESBURG

The grassroots issues in South Africa are dominated by race-based imbalances from the apartheid era (see Wilkinson 1999) and economic, class-based imbalances of the post apartheid era (Berrisford 1999). Urban sustainability issues while linked with the national and international agenda, respond also to these imbalances via several tools, notably: the Local Integrated Development Plans (LIDPs); the city wide Integrated Development Plan (the IDP); Spatial Development Framework (SDF); Integrated Town Planning (ITP) and Land Use Management System (LUMS) among others. These are linked to citywide visions like iGoli 2010, Johannesburg 2030 and Blue 10.

The Local Integrated Development Planning (LIDP) process attempts to respond to these local needs via some key sectors, namely: land use management; housing and human settlements; social services; engineering and infrastructure including transport and health. These are responded to in view of the local needs through people’s participation in the IDP process and by linking these to citywide and national principles. It is important to measure the extent of people’s participation in local programmes, to assess whether the ‘participation principle’ of the IDP is met. Each of the areas is looked at from the criteria of needs, challenges and opportunities. The IDPs sometimes incorporate Key Performance Indicators (KPIs) as required by national legislation.

Land use management

While apartheid policies encouraged eradication of ‘illegal’ settlements, post apartheid South Africa has been characterized by organized land invasions. On the one hand there are legal aspects to this, with such legislation as Restitution of Land Act (RLA); Extension of Security of Tenure Act (ESTA) and Prevention of Illegal Occupation of and Eviction from Land Act (PIE-Act); creating challenges for developers and on the other side there is the issue of pressure on bulk infrastructure, especially from unplanned settlements. Within Johannesburg various opportunities exist in relation to land use (see IDP, 2002). They include: upgrading and formalisation of informal settlements; development of economic opportunities in close proximity to residential areas; development of local production, support for Small and Medium Enterprises (SMMES) and labour intensive manufacturing; creation of opportunities for tourism and improvement of public transport to create economic opportunities for the citizens. These opportunities are constrained by urban sprawl, land invasion, limited markets and poor relation between business location and residential location. The key issue that the city needs to track is the impact of these land use patterns on economy and the environment. This can be tracked by such indicators as the number of employees per sector and average travel time.

Human settlements

The government of South Africa, through the Reconstruction and Development Programme (RSA, 1994) committed itself to deliver one million low-cost houses in five years. So far 1.4 million houses have been delivered (Mahanyele, 2002). The predominant mode of delivery has been the one-off, supply side, project linked, individualized capital subsidy, whose effectiveness and sustainability has been questioned (Huchzermeyer, 2001). The paradigm shift locally is to support the People’s Housing Process. Whether or not this new paradigm will meet the challenges of sustainable development is still to be seen. Several Local Integrated Development Plans (LIDPs) outline these as some of the issues of human settlements which challenge sustainable urban development, including: land invasions; uncontrolled informal settlement-growth; lack of employment opportunities in close proximity to existing and proposed housing and lack of an urban bound.

The opportunities identified by some LIDPs include upgrading of informal settlements; development of mixed income and mixed land uses next to existing residential neighbourhoods; densification and infill developments to create efficient urban systems and creation of order in housing through a detailed planning framework. The physical quality of human settlements and efficient urban systems are some of the key concerns of human settlements in Johannesburg. Such indicators as urban resi-
residential densities and floor area per capita can be used to track progress in this area.

Social services

Johannesburg exhibits stark differences in provision and distribution of social amenities. These social amenities include: hospitals; education facilities; nature reserves; parks; open spaces; recreational areas; security provisions; preservation of places of cultural and historical heritage, cemeteries, etc. Radical inequalities exist between different regions, e.g. the up-market Sandton area and the lower income Alexandra area for instance. These differences have created several challenges to sustainable urban development in Johannesburg, including high levels of crime; fragmented service delivery; limited socio-economic opportunities and high poverty level in former black townships and in informal settlements (LIDP, region 2). One of the key indicators for improved social services is the percentage reduction of crime.

The opportunities identified by some LIDPs include upgrading of informal settlements; development of mixed income and mixed land uses next to existing residential neighbour-

hoods; densification and infill developments to create efficient urban systems and creation of order in housing through a detailed planning framework. The physical quality of human settlements and efficient urban systems are some of the key concerns of human settlements in Johannesburg. Such indicators as urban residential densities and floor area per capita can be used to track progress in this area.

Infrastructure and services

Another local concern is engineering, infrastructure and by extension, environmental issues. Generally the LIDPs raise as issues of importance: state of the roads; storm water drainage; floods; sewage system; waste management systems; electricity provision, etc. Waste collection in the city is done at least once a week (Pick it Up). Street cleaning is also meant to take place at the same frequency. It has been observed that several zones of the city do not have adequate landfill sites. Electricity is provided by the City of Johannesburg and ESKOM. Though the infrastructure and service levels are generally adequate in Johannesburg, it is useful to measure the status quo. Annual energy consumption and CO₂ emission per capita are useful indicators in tracking the status quo of services. The Metropolitan Open Space System (MOSS) needs to be implemented, as open space seems to be one of the major problems, especially in low-income tenements, within the city. It is observed that practices such as use of alternative energy, waste recycling; water harvesting and management, etc, seem to be lacking in the LIDPs. It may require a proactive role of the city to mainstream some of these sustainability issues.

Transport

Inadequate public transport is one of the local concerns (LIDP Region 2). This is coupled with increased use of private cars and continued growth of suburban commercial and retail outlets. The transport infrastructure and systems have several implications for the Johannesburg resident. The relationship between transport and job opportunities; pressure from uncontrolled growth of commercial centers and high-density informal settlements and poor relationship between the housing and labour markets, are some of the tensions that the transport system will have to reconcile. The urban transport system is considered as an opportunity to integrate the urban area and is a key factor in urban sustainability. On one hand the results of this inefficient public transport is reflected in the average time one spends on the road and on the other hand by the levels of CO₂ emissions, as vehicular transport is one of the major polluters of the environment in Johannesburg. The proposed express rail system (Gautrain) is intended to improve attractiveness of public transport on the Pretoria – Johannesburg corridor. The extent to which it is going to do this needs monitoring. It would be important to know the cost, travel time and pollution reductions by modal split.

Health

Health is a major local factor in sustainable urban development in Johannesburg (COJ 2002a; COJ 2002b and COJ 2000). There are several problems linked to HIV/AIDS that impact negatively on urban sustainability in Johannesburg. They include: change in household structure; HIV/AIDS orphans; increased infant mortality rates and pressure on health facilities and government resources.

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Table 5. - Analysis of regions according to selected criteria

<table>
<thead>
<tr>
<th>Region</th>
<th>Population figure</th>
<th>Unemployment %</th>
<th>% Adult population without matric</th>
<th>% of population with no and low income</th>
<th>Service Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30 121</td>
<td>18%</td>
<td>65%</td>
<td>72%</td>
<td>3 service organisations</td>
</tr>
<tr>
<td>2</td>
<td>132 624</td>
<td>18%</td>
<td>64%</td>
<td>69%</td>
<td>8 service organisations</td>
</tr>
<tr>
<td>3</td>
<td>161 365</td>
<td>3%</td>
<td>32%</td>
<td>46%</td>
<td>44 service organisations (46)</td>
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<td>4</td>
<td>199 717</td>
<td>6%</td>
<td>43%</td>
<td>48%</td>
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<tr>
<td>5</td>
<td>175 933</td>
<td>5%</td>
<td>38%</td>
<td>40%</td>
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<tr>
<td>6</td>
<td>608 927</td>
<td>22%</td>
<td>76%</td>
<td>85%</td>
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<td>7</td>
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<td>75%</td>
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</tr>
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<td>11</td>
<td>269 164</td>
<td>15%</td>
<td>73%</td>
<td>83%</td>
<td>35 service organisations</td>
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</tbody>
</table>

Source: coj 2000: social welfare report: final draft

(1) Adults aged 20+ years with grade 1 to grade 11.
(2) Income between R 0 and R 3 500 per month per household.
(3) Indicates services for youth and children, women, people with disabilities and the aged. These services are amongst the larger more established organisations. Hence, the smaller community-based organisations that provide valuable services at local level would not be included in this table.
(4) Many of these are head office administrations of organisations which serve several of the administrative regions.
(5) 15 of these are old-age homes, sub-economic housing schemes and one service centre for the aged.
(CCJ 2002a: 24). Another result of this pandemic is the reduction in urban population growth, with the effect on the manpower needed to sustain urban processes. There are also other diseases that affect the urban resident in Johannesburg that need to be provided for. As such there is need for multi-sector indicators to measure improved quality of life, because of the many parameters involved. Life expectancy and mortality rates are two such indicators. Besides there is need to project the long-term impact of HIV/AIDS on the socio-economic and spatial subsystems in Johannesburg.

Indicators for sustainable urban development in Johannesburg

The main purpose of an indicator is to capture the complexity in the state of a system into simplified information. With the help of indicators, the state of a system can be described and compared with other places, or over time. Indicators can also facilitate the visualization and communication of comparative and longitudinal studies.

In sustainable development, a wider range of indicators has emerged to support the need to monitor and report inter-relationship between environment, society and economy. However, not all the available indicators are relevant or appropriate for application in every context or city. In the case of the city of Johannesburg several tools or indicator sets have been used to measure urban sustainability. These include the following:

(a) IDP targets and the city scorecard

In the IDP process, the city of Johannesburg has adopted the balanced scorecard approach, which is a strategic framework for measuring and management. The city scorecard model recognizes a number of key performance areas (KPAs), which will link the concrete initiatives to the mayoral priorities. Each KPA is then linked to one or several key performance indicators (KPIs), which make the outcome measurable and tangible. For the KPIs, the city has defined target values. In total there are 20 KPAs and 36 KPIs with special targets, covering the six mayoral priorities from four different perspectives. These include customer perspective, financial perspective, internal business process perspective, and learning and growth perspective. The scorecard is meant to function as a planning and business guide for all departments and UACs within the Council.

The city scorecard approach is more of a model for measuring the city’s performance management in a short-term perspective, than measuring the long term development sustainability. The indicators and targets are suited to match the existing political agenda and do not even adequately cover the visions outlined in Vision 2030. It will possibly indicate the successfulness of the measures and strategies in use, but missing a lot of important areas that were not among the main priorities.

(b) State of the environment

Johannesburg was selected along with 14 other cities worldwide to participate in the project “Cities Environment Reporting on the Internet” (CER0I), supported by UNEP. A State of the Environment report has been prepared with 40 indicators having been identified to represent six priority areas, viz: pollution, poverty, environmental health, conservation, parks and open space and waste. One of the key objectives of CER0I is to make the information visible and accessible through the means of modern information technology. On the State of the Environment website its is possible to find GIS maps showing the indicators’ current states in Johannesburg (CCJ 2000– State of the Environment). The indicators used cover a broad range of sustainability issues besides the physical-environment concerns.

(c) National Environmental Indicator Programme, NEIP

A project was initiated by the national Department of Environmental Affairs & Tourism at the end of 2000, to develop a core set of environmental indicators for the country.

(d) Human Development Index and City Development Index

The Department of Provincial and Local Government has done a City Development Index assessment for Johannesburg and other South African cities. The Human Development Index is frequently referred to in the city’s documents to compare with other cities and countries.

(e) National Environmental Indicator Programme, NEIP

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(g) Gross Geographic Product(GGP/Capita)

The indicator is commonly used to compare economic growth within and between geographic locations. Thus Johannesburg can be compared with other cities, nationally and internationally. The Gross Geographic Product for Johannesburg during 1999/2000 was R31,000/capita/yr. This places it in the World Bank category of middle-income countries. It generates more than 35% of South Africa’s Gross Domestic product and 10% of Gross Domestic Product of the Southern African Development Community (SADC) (Centre for Development and Enterprises, 2002).

Indicator sets for Johannesburg

Using the above tools to measure urban sustainability a number of indicators for the city of Johannesburg have been arrived at. In the sections below we outline these:

Social Economic Issues

Information on social indicators is disjointed. The key social indicators are: number of labour intensive jobs created; number of people receiving assistance from government; the ratio of government spending between economic growth and social investment; percentage of household income spent on medical expenses etc. A number of efforts both by central government and the city have been taken but indicators for the city are not readily available.

Environmental issues

The key environmental indicators include: Greenhouse gas emissions; consumption of ozone depleting substances; land cover; land
Figure 5: Model of the city’s scorecard strategy (source: CoJ 2002a – Integrated Development Plan). For an overview of the priorities and KPAs, see appendix II.

**City of Johannesburg focus areas**

- Improved settlement services & housing focus
- Economic development & job creation
- A safe and secure environment
- A healthy natural environment
- greener, cleaner, smarter environment
- Financial sustainability & strategic organizational performance & resilience

**Mayoral priorities**

- Service delivery excellence
- Economic development & job creation
- Crime prevention
- Inner-city renewal
- HIV/AIDS
- Good governance, customer care & anti-corruption

**City of Johannesburg scorecard – Key performance areas by perspective**

- **Environmental perspective**
  - Ensure sustainable service delivery
  - Enhance customer service
  - Improve crime management and security
  - Enhance emergency and disaster management
  - Enhance the provision of living space in a safe city
  - Effectively address the challenge of HIV/AIDS
  - Improve access to comprehensive primary health care services

- **Financial perspective**
  - Ensure sustainable service delivery
  - Enhance customer service
  - Financial management and management
  - Effective financial management
  - Ensure effective capital expenditure

- **Social perspective**
  - Enhance social economic development
  - Enhance urban sustainability
  - Ensure effective customer relationships
  - Enhance effective customer relations management
  - Ensure efficiency and effectiveness of services

- **Implement** employment creation and skills development

**Human settlements and land use management**

The key indicators are: urban residential densities and floor area per capita. The state of human settlements in Johannesburg remains relatively poor with 15% of the population in informal settlements and 14% in backyard shacks (IDP:20). Population densities in the townships are quite high, e.g. 1 person per 29m² in Alexandra. There is need for intervention in this area. Various data exists in the City Department’s of GIS and is relatively reliable though infrequent. Other state oriented indicators for human settlements include land use change, ratio of reused to newly used surfaces and degree of sealed surfaces which can be sourced from the Department of GIS. Both indicators projected across time can actually be used to measure the government’s response. They can also be sued in measuring the driving forces for ‘unsustainability’ and the pressures of human settlements on the environment.

**Social services/Institutional framework**

The city targets 60% increase in compliance with by-laws. This is to be accompanied with a 10% increase in the number of prosecutions (IDP). Institutional capacity is particularly lacking at grassroots level and hence needs addressing. By the city government focusing more on the use of agents to deliver services, this becomes a driving force against participatory governance. The status quo indicates that there are still civic organization structures on the ground, which mobilize the citizens more towards political courses. These could be used as the basis for participatory development organizations. A useful indicator is the level of citizen satisfaction in general and with regard to specific programmes in the city. This indicator can be derived from the LIDP.

**Another indicator and concern is the level of crime. Generally crime is considered to be high in the poorer neighbourhoods in the city attributed to low incomes, unemployment and poverty. The wealthier suburbs are less crime prone. The impact of crime in Johannesburg has generally been to discourage investments in areas hitherto seen as crime zones, i.e. the inner city and the townships. This has resulted in downgrading of these areas. The government**

**Water**

The city of Johannesburg has targeted 5% as the percentage increase of the number of households with access to basic level of water provision (IDP2002). While percentage increase in access to water is important, other issues, e.g. water quality and supply to informal settlements are important. There is data from the Council and, from Rand Water on water use per capita, % population with access to public taps, % of population with access to piped water to dwelling etc. Generally infrastructure and service provision in the city is considered good, with only 16% of the population receiving service below minimum standards (IDP: 20).

**Indicators for meeting grassroots needs**

These include human settlements and land management, infrastructure and services, transport, health, and poverty and unemployment.
has responded with several renewal programmes within the inner city and the townships.

**Transport**

The key indicators are: the average time one spends on the road, the levels of related CO2 emissions, modal split/choices and proportion of income spent on transport. The IDP for the city gives Johannesburg a clean bill of health with regard to transport, i.e. average travel times of about 72 minutes, 11% of the population spending more than 10% of their income on transport, a sizable population living farther than 500m from a passenger bus stops and 0.8% stranded persons (against a national average of 13%) (IDP, 2002:20-21). One of the key problems noted is that of congestion of the roads; hence a need to develop indicators to measure this. There is also need to address the issue of sprawl by slowing it.

**Health**

Johannesburg wishes for its citizen's good quality of life and higher population of living (IDP: Vision 2030 and iSidl 2010). The key problem of HIV/AIDS impacts have been acknowledged as one of the bottlenecks to this goal. Reduction of infant mortality rates and increase in life expectancy are also part of the goal. Health facility provision will be needed, coupled with socio-cultural amenities and increased levels of education (IDP 2002:24).

Data exists to measure the standard of living. There are data on the number of clinics per population. Life expectancy and mortality rates as an indicator is derived from statistical reports of Health, Housing and Urbanisation Directorates. Other data can be derived from the annual reports of the Medical Officers of Health. Crime data can also be collected from the National Census and Crime rate Surveys.

On sanitation, there is data on indicators which show location of settlements with specific sanitation facilities like ventilated pit latrines, ablation blocks, pit latrines etc. Further, there are high levels of unemployment in and around Johannesburg (30% in 2001), great disparities in individual/household income levels and high unemployment for population with poor education. To-date, 19.2% of the people are illiterate and the number of persons with post matric qualification is still low. Attempts to deal with poverty and unemployment have been through job creation, local economic strategies and access to training to enhance opportunities.

**MONITORING AND CONTROLLING SUSTAINABLE DEVELOPMENT**

In view of the complexity of visioning and monitoring sustainable urban development, there needs to be a strong and integrated system of planning and implementation tools as well as mechanisms to monitor status and progress towards the set goals and objectives. With regard to planning and implementation system, Johannesburg is responding strongly to the legislated requirement for integrated development plans (IDPs) with related sector plans such as spatial, open space, transport, water etc. In this section an examination of the substantiation of the IDP planning process and its relationship to the visionary goals/objectives of Johannesburg is made. In conclusion, the section will also provide an assessment of the major gaps to be filled in order for the IDP to become a comprehensive mechanism for implementation and monitoring/reporting of sustainable urban development for Johannesburg.

The IDP is closely linked to budgeting both in the short and medium term. In its current framework of implementation, municipal IDPs are being viewed as the Local Agenda 21 planning frameworks for South Africa (Coetzee 2000). Figure 6 represents the hierarchy and interrelationships of various plans and visoning processes/frameworks for Johannesburg.

**Use of indicator-based controlling in urban planning**

**The legislative context of the IDP as a framework for indicator-based planning in Johannesburg**

The IDP process is the principal strategic planning process used in South Africa and the city of Johannesburg. It requires participation of all stakeholders and was initiated to assist in the new development roles of local government. The Municipal Systems Act of 2000 requires municipalities to draw the IDP, as the single inclusive strategic development plan to link, integrate and include all other plans, and be aligned with municipal resources and capabilities, and especially the annual budgets. It also requires that IDP be aligned with provincial and national plans. Integrated development planning crosses different departmental divisions by linking physical, social, institutional and economic components of planning and development with management and implement-

![Image of the IDP framework for monitoring and controlling sustainable urban development](source: CDD 2002c)
tation structures (horizontal integration). It also integrates planning in the different spheres of government (vertical integration). It is further meant to integrate municipalities with service providers and residents.

**Implementation of the proposed indicator set**

**Contents of IDP**

The minimum IDP contents as legislated in the Municipal Systems Act are:
- Vision;
- Assessment of Existing level of development
- Reflect on the council development priorities and strategies;
- Spatial Development Framework;
- Council's operational strategies;
- Disaster Management Plan;
- Financial Plans and
- Key performance indicators (KPIs).

It should reflect
- Existing institutional framework
- Investment initiatives
- Development initiatives
- All known projects, plans and programmes.

The IDP is based on Johannesburg's long term, 30 year plan, **Johannesburg 2030**, and on its medium-term five year plan, arising from the six Mayoral Priorities. The **Vision 2030** envisions Johannesburg developing into a world class city, with economic and labour force specialized in the service sector and an outward-oriented economy operating on a global scale. The strategy focuses on economic growth as the crucial driver to building a better city.

**Joburg 2030** focuses on economic growth as the means for increased prosperity and improved quality of life. This needs to be questioned as economic growth does not necessarily translate into sustainable development. Evidence in literature suggests that there is no automatic link between economic growth and overall improvement in living standards as a majority of poor persons tend to remain marginalized outside the benefits of economic growth (Pugh 1990:37; ILO, 1777; Chenery et al. 1974).

**Mayoral priorities versus sustainable urban development**

The six mayoral priorities arising from **Vision 2030** are as follows: Economic development and job creation; Public safety; Service delivery excellence, customer care etc; Good governance; Inner city regeneration; and HIV/AIDS.

**The Spatial Development Framework (SDF)**

As a framework, the SDF addresses the following spatial planning and development issues: appropriate densities, support for public transport, clustering and focus of economic activities, growth management, the enhancement and protection of residential environments, support of viable service and infrastructure provision, guide and direct affordable housing developments, environmental management and provision of a framework for the upgrading and development of historic black townships (CoJ 2003; IDP 2003/4).

At a local level, the directorate is responsible for the development of regional spatial frameworks. It also takes a lead in ensuring that the allocation of the city's capital budget is in line with the city needs and priorities. This is done through the development and coordination of the Capital Investment Framework.

Other mechanisms and processes utilized are policies, initiation of appropriate developments, coordination of processes and specific precinct plans.

The SDF is also informed by the Regional Spatial Development Framework which is done for all the 11 regions of the city of Johannesburg.

**The city of Johannesburg GIS System**

In 2001 the city of Johannesburg finally provided the opportunity to establish a fully-fledged and properly resourced GIS department with the following objectives: to provide strategic direction for the city's GIS; to analyze customer needs/requirements; to manage GIS projects; to build, validate and maintain database content; data base management; to add value to data etc.

Internal clients use the GIS mainly to support decision-making in implementing the vision of the city. Consultants and developers often use the GIS to assist in infrastructure and services planning. Rate payers, students and other people also use the system. The IDP and SDF processes of Johannesburg are strongly facilitated by GIS in various ways. For example, the CGIS produces a variety of maps on proposed and planned land use maps, spatial representation of surveys conducted in specific areas, locality maps for research etc.

In view of the strong role which GIS has come to play in the IDP and related sector plans, it is critical that a GIS-based system of monitoring and reporting sustainable urban development indicators be established as an extension to the management/operational KPAs/KPIs. This approach could be further enhanced through skills- and capacity-building in scenario-building/modelling based on GIS-linked databases.

**IMPROVED MECHANISMS AND STRATEGIES FOR SUSTAINABLE URBAN DEVELOPMENT OF JOHANNESBURG**

One way of improvising the current system is by introducing sustainability indicators into the city's KPA/KPI and score card. The City uses the IDP process to determine how well it is performing. The "City Scorecard" identifies priorities, establishes indicators to measure performance and acts as a reporting framework to measure delivery. It includes results aligned to its planning and development philosophy: key objectives or "performance areas", key measurements or "performance indicators" and targets. There are objectives or "performance areas", key measurements or "performance indicators" and targets. There is a very good opportunity to incorporate sustainability indicators as integral part of performance measurements. It is also pertinent to include "Key Sustainability" issues into Key Performance Areas. The IDP would be a good tool as it is meant to align literally every developmental issue, which goes on within the city. Performance is assessed for each region, department, utility, agency and corporate entity as well as for the city as a whole.

For example, the key performance areas in the 2003/2004 of the IDP are: Enhancing customer service; Providing basic services to all residents within the metropolitan areas with below basic levels of service; Ensuring the sustainability of service delivery; improving crime management and prevention; enhancing emergency and disaster management; effectively addressing the challenge of HIV/AIDS; improving access to comprehensive primary health care within the city; ensuring sustainable urban...
development and management, ensuring inner city regeneration, promoting community empowerment and skills development and enhancing transportation service delivery.

One cannot help noticing that urban sustainability is considered to be a small part of development priority areas. The question is should urban sustainability be a subset of the performance areas or should it guide the overall performance areas? One sees an opportunity here for both. In its mature stage, urban sustainability should be the overall philosophy which informs the setting of a city’s priorities as well as the related key performance areas/indicators (KPIs) and budgets.

The IDP and the city-budget process

The IDP contains the budgets for all council departments and for all the utilities, agencies and corporate entities. The main advantage of linking the IDP and the budget is that it provides the necessary financial backing for the planned programmes which in turn makes the IDP a critical mechanism for implementing sustainable urban development in Johannesburg. This is intended to allow residents insight about how the city intends to spend its finances over the next financial year.

Council bylaws as a tool for urban sustainability

The Council bylaws have a potential of contributing to urban sustainability, covering social, economic, physical, and institutional sustainability issues. This could only be realized if the bylaws are aligned with key sustainability issues, which is currently not the case. However, there are still sustainability issues which are indirectly addressed by the city bylaws. In June 2003, the Council adopted a revised set of bylaws for the city of Johannesburg, based on draft bylaws that were presented for public comment earlier in the year covering several areas/sectors like public roads, crematoria, street trading, waste management, water management etc.

The bylaws focus more on legalistic and economic issues and less on sustainability. The bylaws around public health lay emphasis on waterborne sewer systems, and very little on alternative sanitation, which could be more sustainable in the long run. Action on public open spaces focuses more on management of these spaces, rather than looking at their potential in terms of physical and ecological sustainability and so forth.

Public roads-related bylaws do not lay adequate emphasis on pedestrian roads, but instead cover a whole array of persons’ conduct. Waste management is totally silent on waste recycling. The point here is that the opportunities of bylaws as tools and mechanisms for urban sustainability can only be realized when they are recognized as such and sustainability principles are used as a guide in their formulation, enforcement and monitoring.

CONCLUSION AND THE WAY FORWARD

The emergence of Johannesburg from a grass-stand of wildlife subsistence to commercial farming and mining/manufacturing to ultimately a city of over 3 million people barely a century has contributed to a city faced with major sustainability challenges and opportunities. These challenges were further complicated by the legacy of apartheid policy and planning up to 1994. The sprawling of the city and related low densities, emerging shortage and competition over key resources like land and water as well as depletion/ degradation of resources and environment are some of the key environmental challenges. Due to the apartheid legacy, the city has its share of major socio-economic and cultural challenges which require urgent attention. These include unemployment (now estimated at close to 40%) and poor skills-base (especially in view of a tertiarised economy) and backlog in housing/services such as water, energy, sanitation and waste disposal.

It is therefore ironic that the city which has grown to be the only world class African city due to its strong global network of businesses and corporations also displays such severe manifestations of African urbanization outcomes. These include high urbanization rate, severe unemployment and poverty, homelessness and informal settlements, large informal sector, high rates of HIV/AIDS and severely degrading environment.

It is this context that inspired the city’s Vision 2030 of 2002. The document first recognizes that the unique status which the city enjoys as well as the key threats to that status. It then maps a developmental pathway highly focused on facilitating economic growth driven by private-sector investment with the Council playing a significant role of ensuring the right physical infrastructure as well as socio-economic ad cultural foundations such as controlling crime and enhancing literacy and skills-base.

The focus of Vision 2030 and the development challenges at grassroots level will have to be addressed in a global context where sustainable development in the 21st century has been politically debated and accepted. The quest for development which ensures non-depletion and non-degradation of resources and environment has therefore become a major factor to be addressed by all development agencies including local authorities.

The above scenario thus translates to three major categories of challenges for sustainable urban development for Johannesburg. The first one is the desire to sustain its African world class city status. The second one is to address the glaring grassroots needs for basic needs and alleviation of poverty (including tackling the HIV/AIDS impacts). The third one is to ensure that all this will be achieved within the framework and principles of sustainable development.

Although, the above scenario looks daunting in terms of complexity and scale, Johannesburg has an extremely high chance of achieving this objective especially through the integrated development planning (IDP) process. Due to the new constitution and governance system of the democratic South Africa, the IDP has become a legislated requirement of each local authority. The strong commitment of governments at different spheres (local, provincial and national) to ensure that IDPs are generated and implemented effectively will definitely ensure the nurturing and maturing of a systematic planning practice in South Africa and Johannesburg in particular.

However, in spite of the strong alignment between IDPs and local agenda 21 principles and process, there has not been an official recognition of the opportunity of applying sustainable urban development as the overall framework for the IDP process and outcomes. Consequently, no urban sustainability strategy (tools and mechanisms) has been explicitly applied in the conceptualization of the IDPs.

For example, even though environmental plans
are a required component of the IDP, there is no requirement that this be broadened out to encompass sustainable urban development as the key framework of the IDPs. Instead, the need to ensure an institutionally- and financially-viable local authority as well as the socio-economic demands for job creation, increasing competitiveness for economic growth and addressing backlogs in housing/services constitutes the key focus issues for Johannesburg’s IDP process and outcomes.

This arises from the strong bias of Vision 2030 towards global economic competitiveness, followed by socio-economic concerns, with environmental concerns falling way below in the priority list. The key performance areas and indicators clearly reflect this bias. Even though key operational performance areas and indicators have been formulated as a response to the legislated IDP requirements, they do not address urban sustainability in the broader context.

The state of the environment report (one of the major inputs to the environment-sector plan) comes closest to identifying the broader sustainable urban development challenges and opportunities. The document actually sets a strong base for status quo and future monitoring of key sustainability indicators (environmental, socio-economic, cultural and institutional). The document applies the DPSIR model (driving force, pressure, state, impacts and responses) of data capture and reporting. It is definite that with regular capture and reporting of such data as used in the report, one can easily track sustainability trends of the city.

However, there is no systematic mechanisms/strategies of linking the monitoring/reporting outcomes/indicators of the report to the other sector plans to ensure action aimed at improving on the indicators in an integrated and synergic approach. In other words, there has not been an explicit effort towards closing the loop of sustainable urban development (planning, implementation, monitoring/evaluation and back to planning stage).

One can therefore conclude that from a legislative and institutional point of view, Johannesburg has a very strong base for explicitly embarking on sustainable urban development. Recasting of Vision 2030 and future cycles of IDPs (including related SDGs and other sector plans) with the broader framework of urban sustainability would be a primary step in the right direction. This could be followed by expanding the key performance areas and indicators of the IDP (KPAs and KPIs) of the City’s Score Card to include both operational/management areas/indicators as well as the broader urban-sustainability indicators to facilitate and support monitoring/evaluation for both categories of issues rather than the management ones only. It is this need/re-requirement which Johannesburg must relocate its attention to in order to sustain its global and regional competitiveness and also ensure that the grassroots needs will be met in a sustainable manner over time.

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