Victims, villains and fixers: the urban environment and Johannesburg's poor

Victims, Villains and Fixers: the Urban Environment and Johannesburg's Poor [*]

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Urban water supply, sanitation and electricity have been identified as basic needs by the post-apartheid government and the Greater Johannesburg Metropolitan Council (GJMC). This article explores the relationship of Johannesburg's poor to the urban environment and in particular these three key urban services. On the basis of survey data, case studies, textual analysis and in-depth interviews with policy makers and planners, it reviews how poorer citizens were for a long time seen as victims under apartheid urban planning. During the rent boycotts that characterised urban struggle politics during the era of late apartheid in Johannesburg, they were often represented as villains. This perception persisted well into the post-apartheid period, where refusing to pay for services was seen as tantamount to a lack of patriotism. Today, Johannesburg's poorer citizens are increasingly being seen as fixers. The GJMC in its policy document, iGoli 2002, *is committed to establishing the commercial viability of service delivery. Cost recovery is seen as important to solving the tension that exists between maintaining established service levels (in historically white areas) and extending services to new and historically under-serviced (mainly black) areas. We conclude that there are opportunities to address urban poverty, inequality and environmental management in an integrated way. However, these are predicated on the GJMC and its advisers understanding the ways in which pro-poor and social justice strategies interface with urban services and the urban environment.*

Introduction

In their relationship with the urban environment, poor urban dwellers are variously characterised as victims, villains or fixers.[1] As victims they are seen to suffer from poor services and environmental conditions, a situation highlighted in the South African context by apartheid's spatial legacy and racial inequalities in the segregation of urban residential areas and the provision of public goods and services. As villains,

[*] This article draws in part on the first phase of a city study of Johannesburg, conducted as part of research on urban development conducted between 1998 and 1999 commissioned and funded by ESCOR. See J. Beall, O. Crankshaw and S. Parnell, 'Urban Governance, Partnership and Poverty in Johannesburg', *Urban Governance, Partnership and Poverty Working Paper No. 12*, International Development Department, School of Public Policy, University of Birmingham, 1999). We are grateful to David Simon and an anonymous reviewer for their helpful comments.

[1] The notion of 'victims, villains or fixers' is borrowed from Rocheleau who applied it to the way women have been perceived in relation to the environment. See D. Rocheleau, 'Gender, Complementarity and Conflict in Sustainable Forestry Development: A Multiple User Approach'. Paper presented to the IUFRO World Congress, August 5-11, 1990, Montreal and quoted in H. van den Hombergh, *Gender, Environment and Development: a Guide to the Literature*, Utrecht, 1993).

urban people in poverty are seen as perpetrators of environmental degradation through illegal, wasteful and polluting practices. In Johannesburg their role as villains has been additionally underscored by past and on-going practices of boycotting of rents and service charges and illegal tapping of municipal services.

As fixers, poor people are often called upon to participate in community-based responses to environmental management, cost sharing or payment of user charges for service provision and maintenance. Two critical issues are being debated and explored in Johannesburg in the present context. This first is, which citizens are to participate in community-based responses to environmental management, given that in the past little participation was expected of better-off (predominantly white) residents, while poorer (predominantly African) urban dwellers often had to rely almost entirely on their own resources or initiatives? Second, and equally crucial is how service provision and maintenance is to be paid for in the longer term. Both issues constitute major social, economic political and environmental challenges for the Greater Johannesburg Metropolitan Council (GJMC), the new metropolitan government structure for the city.

This article explores the relationship of Johannesburg's poor to the urban environment and more specifically to three key urban services, water supply, sanitation and electricity. This focus is justified because these services are of central importance to environmental health, urban economic growth and social relations.[2] The provision of basic services and the construction of infrastructure to meet the basic needs of the poor are the widely accepted priority of both the post-apartheid government and of the GJMC, a priority that far outweighs any other urban environmental focus. The metropolitan council is equally determined to establish the commercial viability of service delivery, both to improve efficiency and in order to facilitate its commitment to a level of cross-subsidisation across the city.[3] However, while these issues have been politically and legislatively resolved, they have not yet stood the test of implementation.

[2] Significantly fire and water are among the four elements in ancient and medieval philosophy and both are considered essential for human life.

Urban Poverty and the Urban Environment

The number of people in poverty, as measured by conventional income-based poverty lines, is rising in cities of the South. According to these measures by the year 2000 it is estimated that more than half the world's absolute poor will be living in urban areas.[4] For this reason, those concerned with international social policy and development are taking the issue of urban poverty increasingly seriously.

However, while conventional definitions and measurements of poverty have primarily focused on household income and expenditure, urban poverty specialists are keen to point out that well being cannot be divorced from both the operation of urban labour markets and the physical and social environment.[5] Security of tenure or occupation, access to adequate services and ensuring safe living environments can go a long way towards securing the life chances of low-income urban dwellers. Thus people's well-being and livelihood opportunities are as closely linked to *where* they are as to *what* they do.

If anything distinguishes the day-to-day life of poor urban dwellers from their rural counterparts, it is their relationship with the built environment. Poor living conditions related to contaminated water, inadequate or absent sanitation, lack of services such as electricity and the constant threat of floods, landslides or industrial pollution, particularly in conditions of appalling overcrowding, all mean that the urban poor are exposed to severe environmental health risks. There is a substantial literature on the impact of poor environments on the health and well being of low-income urban dwellers.[6] Indeed, Jane Pryer[7] argues in the context of Bangladesh for

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[3] K. Gordhan, Chief Executive Officer, Greater Johannesburg Metropolitan Council, *Interview* (Johannesburg, 1999).
[4] UNCHS (Habitat), *An Urbanizing World: Global Report on Human Settlements* (Oxford, 1996).
[5] J. Beall 'Introduction' in J. Beall (ed.) *A City for All: Valuing Difference and Working with Diversity* (London, 1997), pp. 2-37; D. Satterthwaite, 'Urban Poverty: Reconsidering its Scale and Nature', *IDS Bulletin*, 28,2 (April, 1997), pp. 9-23.
[6] C. Bradley, C. Stephens, T. Harpham and S. Cairncross, *A Review of Environmental Health Impacts in Developing Countries* (Washington D.C., 1991); M. Douglass, 'The Political Economy of Urban Poverty and Environmental Management in Asia: Access, Empowerment and Community Based Alternatives', *Environment and Urbanization*, 4, 2 (1992), pp. 9-32; J. Hardoy, S. Cairncross and D. Satterthwaite, *The Poor Die Young: Housing and Health in Third World Cities* (London, 1990); T. Harpham and T. Tanner, *Urban Health in Developing Countries: Progress and Prospects* (London, 1995); D. Satterthwaite, 'The Impact on Health of Urban Environments', *Environment and Urbanization*, 5,2 (1993), pp. 87-111.

example, that the combination of increasing poverty, deteriorating physical environments, inadequate shelter and declining investment in urban infrastructure and services has meant that health conditions are deteriorating faster in cities of the South than in the surrounding rural areas. Simply put, the poorer you are in the city, the greater the risk.

However, even though Africa is a fast urbanising continent many African cities are blatantly ill equipped to deal with the impact of urbanisation. Resource deficiencies, poor urban management and the absence of effective urban governance all combine to present enormous problems in maintaining functional cities, productive economies and in ensuring employment, shelter, infrastructure and services for all urban dwellers, particularly the growing ranks of the poorest. Clearly concern with the environment and sustainable urban development cannot be divorced from the problem of the millions of people globally, who lack access to shelter, basic services and livelihoods.

Nevertheless, internationally the campaign for environmental justice has been firmly directed at the 'green agenda' (global warming, biodiversity, resource depletion and deforestation) and global agreements on these issues. The report of the World Commission on Environment and Development (The Brundtland Report) which came out in 1987 dedicated only one chapter to the urban environment. UNCED or the Rio Summit in 1992 was guilty of similar neglect, even though two-thirds of recommended actions in *Agenda 21* have to be taken at the local level.[8] The single chapter of *Agenda 21* on the urban environment points up as key concerns for cities and towns:

> Overcrowding, inadequate housing, inadequate access to clean water and sanitation, growing amounts of uncollected waste, and deteriorating air quality are already serious problems in these cities and may worsen substantially if effective and timely action is not taken.[9]

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[7] J. Pryer 'When Breadwinners fall ill: Preliminary Findings from a Case Study in Bangladesh', *IDS Bulletin*, 20,2 (April, 1989), pp. 49-57; J. Pryer, 'The Impact of Adult Ill-health on Household Income and Nutrition in Khulna, Bangladesh', *Environment and Urbanization*, 5,2 (October, 1993), pp. 35-49.
[8] A. Atkinson, 'Introduction: The Contribution of Cities to Sustainability', *Third World Planning Review*, 16,2 (May, 1994), pp. 97-101.
[9] M. Strong, 'The Road from Rio' in I. Serageldin, M.A. Cohen and K.C. Sivaramakrishnan (eds) *The Human Face of the Urban Environment*, Environmentally Sustainable Development Proceedings Series No. 6 (Washington D.C., 1994).

These issues together constitute what has become known as the 'brown agenda', a central tenet of current urban environmental management.[10] The brown agenda has been defined as the most immediate and critical environmental problem facing cities in the South and 'closely linked to the poverty-environment nexus'.[11] In many ways, however, the 'brown agenda' appears to differ very little from the focus in the 1970s on addressing basic needs in development, in particular, the urban services approach. We should be cautious, therefore, in accepting the claim that the 'brown agenda' signals a real shift from the provision of basic infrastructure and services to a more integrated concern for environmentally sustainable development.[12]

However, since the birth of the international environmental movement in the late 1960s and early 1970s, environmental activists have by and large seen themselves in opposition to urban development. In cities of the North they have regarded their task as protecting greenbelts from the inexorable encroachment of developers. In the South, when faced with the dilemmas of increasing urbanisation and growing urban poverty, global environmental concerns have merged more readily with the preoccupations of rural development and natural resource specialists than with urban planners and activists. To the extent that cities are considered from an environmental perspective, it is usually in terms of the negative 'ecological footprints' that they cast on their hinterlands.[13]

Likewise, in South Africa the dominant environmental discourse places primary emphasis on preserving areas of outstanding natural beauty, a vantage point which does not resonate well with the urban industrial experience of metropolitan Johannesburg. Moreover, an overwhelming preoccupation with issues of social justice has meant a rather slow start to the campaign for environmental justice. In Johannesburg the questions of how to extend basic services to the historically disadvantaged populations and how to pay and charge for services across the city

[10] See J. Leitmann, 'The World Bank and the Brown Agenda', *Third World Planning Review*, 16,2 (1994), pp. 131-140.
[11] C.J. Bartone, J. Bernstein, J. Leitmann and J. Eigen, *Toward Environmental Strategies for Cities, Policy Considerations for Urban Environmental Management in Developing Countries*, Urban Management Programme Policy Paper No. 18 (Washington D.C., 1994).
[12] J. Beall, 'Households, Livelihoods and the Urban Environment: Social Development Perspectives on Solid Waste Management in Faisalabad, Pakistan', PhD Thesis, University of London (1997).
[13] W. Rees, 'Ecological Footprints and Appropriated Carrying Capacity: What Urban Economics Leaves Out', *Environment and Urbanization*, 4,2 (October, 1992), pp. 121-130.

have most concentrated the minds of participants in urban governance[14] in the post-apartheid period.

There are also widely held perceptions that many whites in South Africa, who identified with or participated in the struggle against apartheid, have retreated into green issues. It is felt in this regard that core establishment concerns such as maintaining lifestyles and local area-based standards or protecting private property are now pursued behind a mask of commitment to environmental issues such as conservation and the preservation of green spaces. Indeed, the argument can be made that institutional racism is increasingly disguised as an 'environmental syndrome' akin to Swanson's (1976) famous 'sanitation syndrome'.[15]

There are additional problems in advancing environmentalist agendas in Johannesburg on the cusp of the millennium. One area for confusion is that environmental management is both a provincial and a local government competency. Additionally, different commitment, expertise and perceptions exist in relation to environmental management and priorities across the four municipal sub-structures currently comprising the GJMC. In particular, different environmental issues present themselves in the north and south of the city. In the south, for instance, land issues are important in the context of growing demand for housing development. Pollution control is also a pressing issue, particularly in relation to air quality as a result of the mine dumps. In the north much of the concern is with resource management, protecting internal assets such as the ridges and koppies that are so characteristic of the Johannesburg landscape and which constitute the lungs of the city, as well as the rivers and open spaces.

Unlike Cape Town, which is the home of the nation's green movement, or Durban, which seems to be leading the way in implementing South African Agenda 21 programmes, Johannesburg is seen as a non-starter in the realm of environmental politics. This is partly for the reasons cited immediately above, partly because it has got off to a slow start in terms of environmental action and partly because it is a

[14] Urban governance is understood to refer to more than urban management or local government and to include both civic engagement and responsive government in a context which is political as well as constitutional, legal administrative and managerial.

comparatively ugly place. This reputation is unfair. In the 1980s Johannesburg, as the country's industrial heartland, nurtured the powerful South African trade union movement, which in turn politicised industrial health and safety concerns. By the same token, the 1980s saw the civic movement in Johannesburg spearhead the demand for affordable shelter and urban services in the context of the rent boycotts. Although not promoted or articulated in terms of an environmental agenda, the issues they raised are nevertheless crucial to mitigating urban environmental risk.

The South African Constitution states that citizens have rights to a safe and healthy environment but that equally they have a responsibility to participate in environmental management. The 1995 *Development Facilitation Act* (DFA) provided a national legislative framework for land development and stipulated that the Johannesburg metropolitan area and each of the four municipal substructures prepare policy guidelines known as *Land Development Objectives* (LDOs). The guiding principles for environmental management in Johannesburg are encapsulated in the *Composite Land Development Objectives*.[16] Rights to environmental justice are addressed with particular reference to the 'equitable distribution of resources'.[17]

While community members are expected to be involved in greening strategies, there are plans afoot to promote environmental education and to increase the capacity of local government to promote community participation in the environment. Outside of solid waste management, however, environmental management is not explicitly linked to other urban services. If the city can successfully make the links between environmental management and urban service delivery, it may well be that a city not especially well endowed with natural beauty can bridge the divide between the green and brown environmental agendas.

If adequate public services cannot be accessed, people make their own inadequate arrangements or pay excessively for informal private solutions. Apart from the overwhelming economic and social arguments, there are also powerful environmental reasons for improving water supply and sanitation. In the case of

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[15] J. Beall, O. Crankshaw and S. Parnell, *Urban Governance, Partnership and Poverty in Johannesburg*, p. 196.
[16] GJMC, *Composite Land Development Objectives* (Johannesburg, 1997).

electricity supply, this has for a long time now had particular political significance in the context of Johannesburg's townships, given that electricity charges triggered the rent and services boycotts in Soweto and beyond during the mid-1980s.[18]

Victims: Apartheid's Legacy

Under apartheid, South Africa was a country exhibiting levels of inequality in wealth and access to services among the highest in the world.[19] A combination of policies and legislation dating from the early 20th century consistently denied Africans vital components of well-being and a secure base in the cities[20] where, in principle at least, they were not allowed to live permanently. This gave rise to racial imbalances in the provision of housing, infrastructure and services, which were inherited by post-apartheid local governments.

The legacy of apartheid impacted specifically on the provision of services in Johannesburg in two ways. First, the well-known policy of providing inferior quality services for Africans meant that standards of social and physical infrastructure were intentionally set lower than they were for whites. In public education, health, housing and transport, racially defined standards of construction and service gave tangible expression to the political and economic hierarchy on which white supremacy was based. The second explanation relates to the decision taken by the apartheid government in 1968 to stop the development of African areas in 'white' South African cities. The metropolitan outcome of the policy of separate development, which insisted that African development be restricted to rural settlements or small towns in racially defined homelands, was the massive backlog of housing and infrastructure development in the old township areas of Johannesburg.[21]

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[17] *Ibid.*, p.58.
[18] M. Swilling and K. Shubane, 'Negotiating Urban Transition: The Soweto Experience' in R. Lee and L. Schlemmer (eds) *Transition to Democracy: Policy Perspectives 1991* (Oxford and Cape Town, 1991), pp. 223-258.
[19] F. Wilson and M. Ramphele, *Uprooting Poverty: The South African Challenge* (Cape Town, 1989), p.4.
[20] For example the Natives (Urban Areas) Act of 1923, the Slums Act of 1934, the Black (Urban Areas) Consolidation Act of 1945 and the Group Areas Act of 1950.
[21] Beall, Crankshaw and Parnell, *Urban Governance, Partnership and Poverty in Johannesburg.*

As the background paper on 'Poverty, Housing and Urban Development' prepared for the Poverty Hearings in South Africa put the urban case:

> Poverty in South Africa is more than usually associated with the high cost of household expenditure. The irrationality of the segregation driven location of the residential areas of the poor has increased costs such as transportation. Moreover, because of the system of financing townships, there is a legacy of the unfair cross subsidisation of rates to rich white neighbourhoods instead of poor African residential areas. In common with other third world cities, residents of informal settlements pay the highest per item costs on basic commodities such as water and fuel.[22]

Clearly then, issues of poverty and environmental justice cannot usefully be tackled in isolation. In the context of urban South Africa most particularly, it is difficult to address either outside a consideration of inequality, not least for political reasons.

It is not just apartheid South Africa that has provided adequate and reliable services to only a minority of its urban citizens. Across many cities of the South, mains water and sewerage connections are concentrated in better off areas, while new investment has tended to be in existing serviced areas. Thus it is common for local governments to subsidise elites heavily in terms of urban services[23] and this is compounded by the fact that cost sharing or community participation increasingly and commonly characterises new investment in low-income areas. Referring specifically to inequalities in access to urban water and sanitation facilities, Caroline Stephens identifies the health inequalities that can arise:

> …the urban poor often have least access to piped water and are forced to pay more than the wealthy for poor quality and limited quantities of water from vendors. This becomes a doubly regressive taxation in which one group is doubly disbenefited (in health and economic terms) while another doubly gains. Put bluntly, the poor pay more for their cholera.[24]

What follows in this section is the presentation of some statistical data drawn from our own analysis of the October Household Survey (OHS) on provision of water

[22] SANGOCO, *Poverty, Housing and Urban Development in South Africa*, a briefing paper for the Poverty Hearings (South African NGO Coalition, Occasional Publications Series No. 5, April, 1998), p.15.

[23] J. Jarman, 'Water Supply and Sanitation' in J. Beall (ed.) *A City for All, Valuing Difference and Working with Diversity*, (London, 1997), pp. 182-193; M. Black, *Mega-Slums: The Coming Sanitary Crisis* (London, 1994); Department for International Development, *Guidance Manual on Water Supply and Sanitation* (Loughborough, 1999).

supply, sanitation and electricity in Johannesburg.[25] The data provide a picture of the conditions of some of apartheid's victims when a democratic government took office in 1994.

One thing that emerges from the tables below is that when access to such services is used as an indicator of poverty, then Johannesburg's poor are better off than many other urban dwellers across the continent. In Africa, 36 per cent of the urban population are thought to be without an adequate water supply and 45 per cent are not covered by sanitation.[26] It should also be pointed out that the situation of Johannesburg's poor also compares well with national figures.[27] For example, it has been estimated that for the country as a whole, in the immediate post-apartheid period, only 21 per cent of households had access to piped water and only 28 per cent to sanitation facilities. Over 80 per cent of poor rural households had no access to either.[28] Nevertheless, intra-urban inequalities exist and this is undoubtedly the most startling picture that emerges within Johannesburg. Although almost all the residents of backyard shacks and informal settlements are African, there is nonetheless considerable differentiation within the African population. This is illustrated in Table Four, which shows the distribution of housing type by race. Whereas coloured, Indian and white households live almost exclusively in formal houses or flats, African households are distributed across a much wider range of informal and formal types of accommodation.

Table 1: Main Source of Domestic Water in Johannesburg by Race (%)

Source of Water	African	Coloured	Indian	White	All Races

[24] C. Stephens, 'Health Cities or Unhealthy Islands: The Health and Social Implications of Urban Inequality', *Environment and Urbanization*, 8,2 (October, 1996), p. 16.
[25] The OHS is a national survey of about 30,000 households, which is conducted annually. This was the most recent source at the time of writing, from which data could be drawn conforming to the present boundaries of the GJMC. It will be interesting to compare this analysis with future analyses based on the 1998 census data, which have recently been released.
[26] WHO/UNICEF Joint Monitoring Programme quoted in F. Nunan and D. Satterthwaite, 'The Urban Environment' Theme Paper 6, ESCOR commissioned research project on urban development (University of Birmingham, International Institute for Environment and Development, London School of Economics and University of Wales, Cardiff, 1999). See also D. Simon, 'Urbanization, Globalization and Economic Crisis in Africa' in C. Rakodi (ed.) *The Urban Challenge in Africa: Growth and Management of its Large Cities* (Tokyo, 1997), pp. 74-108.
[27] We were unable to fine equivalent figures for access to electricity connections.
[28] J. May (ed.) *Poverty and Inequality in South Africa* (Durban, 1998), p. 138.

Tap in house/flat	67	100	100	97	80
Tap on the stand	29	0	0	3	18
Public tap/kiosk/borehole	4	0	0	0	2
Total	100	100	100	100	100

***Source**: Own analysis of the 1995 October Household Survey*[29]

Table 2: Type of Sanitation Provision in Johannesburg by Race (%)

Type of Sanitation	African	Coloured	Indian	White	All Races
Flush toilet in dwelling	50	89	94	99	70
Flush toilet on site	38	11	6	1	23
Toilet off site (all types)	4	0	0	0	3
Other toilet on site (chemical & bucket)	5	0	0	0	3
Pit latrine on site	2	0	0	0	1
Total	100	100	100	100	100

***Source**: Own analysis of the 1995 October Household Survey*

Table 3. Main energy source for cooking in Johannesburg by race (%)

Type of Energy	African	Coloured	Indian	White	All Races
Electricity	86	99	99	98	91
Gas	3	0	1	2	3
Paraffin	9	0	0	0	5
Wood	0	0	0	0	0
Coal or Charcoal	1	1	0	0	0
Total	100	100	100	100	100

***Source**: Own analysis of the 1995 October Household Survey*

Table 4: Type of Dwelling by Race in Johannesburg[30] (%)

Type of dwelling	African	Coloured	Indian	White	Total

[29] The following analyses are for the magisterial districts of Johannesburg, Randburg, Roodepoort and Soweto, the boundaries of which approximate the present boundary of the Greater Johannesburg Metropolitan Council. The OHS data are weighted to reflect the actual size of the provincial populations and not the population of the metropolitan areas. However, because the population of the GJMC contributes a relatively large proportion to the province of Gauteng, the weighting of the data for the districts that make up the GJMC is fairly accurate. The total number of households reflected in the weighted results is 396,809, which represents a population of roughly 2.4 million. This figure is only slightly higher than the 1996 Population Census estimate of 2.3 million. Another problem with using the OHS data at the level of only a few districts is that the sample size is only 711 households (339 African, 95 coloured, 80 Indian and 197 white households). This means that in this and most of the following tables, the figures are accurate to within 10 per cent in 95 per cent of cases.

[30] In South Africa informal dwellings include formally planned site and service settlements, which have low building standards, as well as illegal and unplanned dwellings of various types. Formal backyard dwellings would refer to free-standing structures for which planning permission had been received. Informal backyard dwellings would refer to backyard shacks.

Formal dwelling (house or flat)	62	97	100	95	77
Formal dwelling in backyard*	20	2	0	4	13
Informal dwelling in backyard**	3	0	0	0	2
Informal dwelling not in backyard	10	0	0	0	6
Hostel	4	1	0	1	3
Other	1	0	0	0	0
Total	100	100	100	100	100

***Source**: Own analysis of the 1995 October Household Survey*

Water

In Johannesburg, the metropolitan government is acutely aware that the extensive and generally very effective network of water coverage is not universal across the city. For example, it does not reach the new development nodes to the north and south of the city adequately.[31] Moreover, in a pattern that is repeated across many services, standards of water delivery vary enormously according to both the original racial occupation of the suburb and the type or generation of housing in which a household lives. In practice and as illustrated in Table Five, the worst supplied are the more recently urbanised African households or children of established urban dwellers who have moved from formal housing stock in townships into informal settlements. There are limited cases where water is trucked into informal settlements and a small fraction of the population depends on water from rivers and streams. However, taps in houses or on the stand provide most of the population with safe and drinkable water.

Table 5: Main Source of Domestic Water by Type of Housing in Johannesburg (%)

Source of Water	Formal Dwelling (house or flat)	Formal Dwelling in Backyard	Informal Dwelling in Backyard	Informal Dwelling not in Backyard*	Hostel	Other	All Housing Types
Tap in house/flat	90	65	0	4	100	40	80
Tap on the stand	10	34	55	78	0	60	18
Public tap/kiosk/borehole	0	2	45	18	0	0	2
Total	100	100	100	100	100	100	100

*These include free-standing squatter settlements and informal settlements set up or sanctioned by the state.

***Source**: Own analysis of the 1995 October Household Survey*

[31] GJMC, *Composite Land Development Objectives*.

Most survey research suggests near universal access to piped water in the GJMC area. Findings are based on set criteria such as the distance of a household from a tap or other water source. Micro studies of water supply based on qualitative data analysis reveal greater differentiation in terms of access to piped water. For example, a recent survey of informal settlements in the GJMC showed that as many as 12 per cent of residents in clusters of poorly serviced land depend on non-piped water.[32] In a study of Soweto the variations between housing types emerged as a reliable predictor of access to water. Less than 40 per cent of Soweto households were found to have piped water in the house and a high proportion of even the original Soweto houses built in the 1950s and early 1960s still relied on a tap outside the kitchen door.[33]

Compared to other cities of the South, purchase of water from private vendors is relatively uncommon in Johannesburg. However, in townships rental arrangements mean that sub-tenants pay landlords for water and in informal settlements shacklords can control access to water sources. Consequently, a large proportion of those paying for water in the Province of Gauteng, of which Johannesburg forms a significant part, are not necessarily paying the service provider but an intermediary. What this signals is that the politics of water supply are not confined to who gets what at the level of the city. They also involve vested interests at the local level that will oppose improvements in delivery because they are making a profit from the current unregulated supply of water. The study that unearthed this information[34] was done on behalf of the utility company, Rand Water Board, which wished to know *inter alia*, how many residents were prepared to pay for water.

It is frequently argued in the international literature that because poor urban residents pay informally for water supply that they are therefore willing to pay for a more efficient formal water supply. This assumption is reinforced by the affirmative results

[32] CASE, *Investigating Water and Sanitation in Informal Settlements*, (Community Agency for Social Enquiry, Johannesburg, 1998).
[33] A. Morris (ed.), B. Bozzoli, J. Cock, O. Crankshaw, L. Gilbert, L. Lehutso-Phooko, D. Posel, Z. Tshandu and E. van Huysteen, *Change and Continuity: A Survey of Soweto in the Late 1990s*, Department of Sociology, University of the Witwatersrand (Johannesburg, 1999).
[34] CASE, *Investigating Water and Sanitation in Informal Settlements.* The Rand Water Board provides the GJMC with bulk water, the long term supply of which is guaranteed by the controversial Lesotho Highlands Water Scheme (see Thabane, this volume). The GJMC has been providing bulk water connections to the four municipal sub-structures, which in turn bill residents with formal connections.

from contingent valuation and other methods for assessing demand for services. However, it is also increasingly recognised that willingness to pay is simply that, willingness to pay and does not necessarily say anything about affordability or the proportion of household income that poor households have to spend on water. Moreover, as Michael Goldblatt points out in the context of Johannesburg, 'it does not provide answers to the moral questions concerning the welfare role of government, and whether water supplies, and other urban services, are a good vehicle for pursuing welfare strategies'.[35]

There is official and constitutional commitment to the right of access to safe and sufficient water in South Africa and political will to redress historical racial inequalities underpinning its present distribution. In its 1994 White Paper, the Department of Water Affairs and Forestry (DWAF) translated the general constitutional obligations into the practical goal of providing access to basic water and sanitation services to all within seven years.[36] Responsibility is located with local or third tier government, which has a constitutional obligation to provide for basic needs. In respect of water supply this is defined by DWAF as 25 litres per person per day of good quality water, provided at a maximum distance of 200 meters on a regular and reliable basis. However, there are also severe resource constraints, not least of all in cash-strapped Johannesburg Metro.[37] Under the influence of international agencies such as the World Health Organisation (WHO) and the World Bank, cost recovery has become the mantra governing public provision and performance in South Africa.[38] An alternative view is that cost recovery is neither socially just, given the historical legacy of apartheid planning and resource distribution, nor is it necessarily a

[35] M. Goldblatt, 'The Provision, Pricing and Procurement of Water: A Willingness to Pay Survey in Two Informal Settlements in Greater Johannesburg' (MSc Dissertation, University of the Witwatersrand, 1997). It is also noteworthy that from the point of view of environmental health, if not approached holistically alongside adequate drainage and solid waste management, increased water supply can lead to public health problems by increasing sullage (waste water from households excluding from toilets), thereby exacerbating waste water disposal problems.

[36] DWAF, *Water Supply and Sanitation Policy White Paper: Water – an Indivisible National* Asset (Pretoria, 1994). See also DWAF, White *Paper on a National Water Policy for South Africa* (Pretoria, 1997). See also D. Potts, 'Urban Lives: Adopting New Strategies and Adapting Rural lives', in C. Rakodi, *The Urban Challenge in Africa* (Tokyo, 1997), pp. 447-494.

[37] The DWAF approach to water should be seen in relation to the Municipal Infrastructure Investment Framework (MIIF) developed by the Department of Constitutional Development (DCD) in 1996 and which addresses the backlog in service provision in both urban and rural areas. M. Goldblatt, 'The Provision, Pricing and Procurement of Water', p. 37.

guarantee of improved and sustainable domestic water supply.[39] These debates are picked up again in the following section.

Sanitation

Planning for urban water supply and sanitation is often neglectful of sanitation.[40] If the official, albeit preliminary report, *State of the Environment in Gauteng*[41] is anything to go by, it appears that Gauteng Province is no exception. The report does not even have a chapter on sanitation and to the extent that it is covered it is only in respect of the effect of waste sources on water quality. Having said this, as illustrated in Tables Two and Six, sanitation coverage in Johannesburg is fairly extensive. Nevertheless the same patterns of service delivery as for water are reflected. Formal housing has a high level of service, while newer informal areas are poorly supplied.

The standard of formal sanitary services in Johannesburg is very high, with flush toilets being the norm. The GJMC is the sole agent responsible for bulk sewerage and waterborne sewerage and wastewater treatments dominate, covering almost 80 per cent of the metropolitan area. Historically areas without waterborne sewerage had the bucket system, with local authorities being responsible for ultimate disposal. Today, chemical toilets are used extensively in informal settlements but it is shack owners who often have access to chemical toilets and pit latrines, while many tenants who rent shacks are still forced to use buckets.

Within the townships there are also important differences in standards of sanitation that emerge more readily from micro studies. Results from the *Survey of Soweto in the Late 1990s*[42] show very clearly that it is only in the elite new private sector developments that flush toilets in the house are the norm (see Table Seven). A very similar profile emerges for Alexandra Township (see Table Eight). So levels of service differ dramatically across different settlement and housing types but there are also important variations within settlements.

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[38] *Ibid.*, p. 6.

[39] P. Bond, *Cities of Gold, Townships of Coal: Essays on South Africa's New Urban Crisis* (forthcoming). We are grateful to Patrick Bond for allowing us to read his manuscript in advance of publication.

[40] DFID, *Guidance Manual on Water Supply and Sanitation*.

[41] Gauteng Provincial Government, *State of the Environment in Gauteng, a Preliminary Report* (Johannesburg, n.d.)

The issue of service standards also has as much to do with the micro-politics of the number of people per toilet as with the technical quality of the service. For example, the flush toilets of Soweto's hostels are essentially communal facilities associated with the worst humiliations of abject living conditions.[43] Backyard renters usually have to share a toilet on site and in Alexandra the proportion of households who share toilets with other households on the site is as high as 87 per cent.[44] In the same study Alexandra backyard shack dwellers complained that not only did flush toilets not work but access was difficult because landlords locked working toilets at night, to stop them being used by squatters and other non-tenants in the area.

Table 6: Type of Sanitation by Type of Housing in Johannesburg(%)

Type of Sanitation	Formal Dwelling (house or flat)	Formal Dwelling in Backyard	Informal Dwelling in Backyard	Informal Dwelling not in Backyard	Hostel	Other	All Housing Types
Flush toilet in dwelling	79	54	0	0	98	0	70
Flush toilet on site	20	43	55	13	2	100	23
Toilet off site (all types)	0	3	40	19	0	0	3
Other toilet on site	0	0	0	50	0	0	3
(chemical & bucket)	0	1	4	18	0	0	1
Pit latrine on site							
Total	100	100	100	100	100	100	100

***Source**: Own analysis of the 1995 October Household Survey*

Their position is less desirable than that of informal settlements, where although technically lower standards prevail, there is better control over the maintenance of facilities. For example, in the official informal settlement of Diepsloot, which falls under the Eastern Municipal sub-structure, private operators under contract to the municipality provide chemical toilets and tank water. They are also strictly managed and monitored by the Diepsloot Community Development Forum.[45] Tensions over sanitation are one of the issues that some squatters voiced as the reasons for their move away from the backyard shacks into the informal

[42] A. Morris *et al* (1999).
[43] G. Pirie, 'Housing Essential Service Workers in Johannesburg: Locational Constraint and Conflict', *Urban Geography*, 9 (1988), pp. 568-583.
[44] CASE, *Determining Our Own Development: A Community-based Socio-economic Profile of Alexandra* (Johannesburg, 1998).
[45] J. Beall, O. Crankshaw and S. Parnell, *Urban Poverty and Urban Governance in Johannesburg: Phase Two Report*, ESCOR commissioned research on urban dDevelopment (forthcoming).

settlements.[46] However, the perception that sanitation is less contested in informal settlements may not be true either. A large proportion (40 per cent) of residents in informal settlements in Gauteng also reported having to share their toilets with other households.[47]

No separate charges are levied for sanitation in Johannesburg and the costs form part of the rates. In poor areas, sanitation charges are part of the flat rate system. The key debate in the post-apartheid city, therefore, relates to the issue of standards and technology choice; waterborne sewerage versus pit latrines or chemical toilets. The basic services approach adopted by the Department of Constitutional Development's Municipal Infrastructure Investment Framework (MIIF)[48] has opted for the latter. There are both political and environmental issues at stake in this choice. Waterborne sewerage was the norm for historically white areas and formal townships and there are expectations that this should be extended to informal settlements, even if this puts pressure on the city's water supply. In some informal settlements such as Diepsloot, extension of services is feasible because of the proximity of the settlement to existing trunk sewerage lines. However, this is not always the case and alternative arrangements have to be made. Despite their adverse impact on the environment, chemical toilets have been the technology of choice over pit latrines because of political imperatives (they appear more modern and temporary) and the speed at which they can be erected in the face of popular demand.

Electricity

The townships were electrified only after the 1976 Soweto uprisings. Among the reasons for this belated initiative was the hope by the Department of Mineral Affairs and Energy (DME) that power supply to low income areas would stimulate local economic development. Initially the cost of electrical power was higher in the townships than in the white suburbs as the Black Local Authorities tried to recoup the costs of installation. It was this levy that above all fuelled the rent and rates boycotts

[46] O.Crankshaw, 'Social Differentiation, Conflict and Development in a South African Township', *Urban Forum*, No. 7 (1996), pp. 53-68; A. Morris (ed.) *et al, A Survey of Soweto in the Late 1990s.*
[47] CASE, *Investigating Water and Sanitation in Informal Settlements.*
[48] DCD, *Municipal Infrastructure Investment Framework* (Pretoria, 1997).

that characterised the 1980s and beyond and that underpin the current fiscal problems of the GJMC.[49]

Since the electrification of many of the townships in the 1980s, there have been various efforts to promote increased consumption. Progress has been steady but a recent survey of informal settlements in Gauteng suggested that only 11 per cent of informal residents used electricity as their major source of power.[50] The figures drawn from the October Household Survey and illustrated in Tables Nine and Ten suggest that consumption for backyard shacks (29 per cent) and informal settlements (59 per cent) is substantially higher than this study suggests, although they reflect similar trends of low electricity usage.

Once power has been made available, the major reason for low consumption is affordability. The average bill for households with electricity in Soweto was found to be R97 per month in 1997,[51] almost ten pounds sterling and a sum substantially beyond the means of many African households (see Table Ten). One factor thwarting efforts to increase consumption is the fact that traditional methods of cooking continue to be favoured by many low-income households as illustrated by Table Eleven. This is especially the case given affordability issues and the fact that people are fearful of their ability to control the use of electric power. They are also mistrustful about the ability of Eskom (the parastatal which undertakes electricity generation for metropolitan Johannesburg) to levy the correct charge for the service.[52]

The DME is rethinking the way that electricity services are provided, still with the view that by providing a power supply to poorer areas and households, local economic development will be stimulated. As a result of a major research initiative funded by the DME some changes are occurring in the way that the service is

[49] H. Meintjes and C. White, '"Robbers and Freeloaders": Relations between Communities and Eskom in Gauteng Townships', *Policy Issues and Actors*, 10, 5, Social Policy Series, Centre for Policy Studies (Johannesburg, 1997); M. Swilling and K. Shubane, 'Negotiating Urban Transition: The Soweto Experience'.
[50] CASE, *Investigating Water and Sanitation in Informal Settlements*.
[51] A. Morris (ed.) *et al, A Survey of Soweto in the Late 1990s.*
[52] C. White, O. Crankshaw, T. Mafokoane and H. Meintjes, 'Social Determinants of Energy Use in Low Income Households in Gauteng' (Pretoria, 1998).

delivered.[53] Traditionally, credit meters were used to measure consumption, but severe tensions resulted between Eskom[54] and users in areas such as Soweto, including allegations of corruption against Eskom employees and frustration on the part of Eskom officials over the practice of many poor consumers simply to pirate power from overhead cables.[55] This has led to a slow reassessment of delivery methods and, following unsuccessful experiments with traditional credit meters, there is now a greater focus on pre-paid electricity. However, by 1997 only 5,000 prepaid meters had been installed in Soweto[56] and there is a long way yet to go in establishing trust between Eskom officials and workers on the one hand and electricity users on the other, not to mention issues of affordability and adherence to customary cooking and heating practices.

Table 7: Types of toilet in Soweto by housing type (%)

Type of Toilet	Council Houses (Forced removals)*	Council Houses Pre-apartheid	Council Houses (Apartheid period)	Private Sector	Backyard Shacks	Informal Settlement	Hostel	Site and Service	%
Flush Toilet in backyard	64.3	77.6	86.7	0.8	95.7	0	0.3	0.3	41.0
Flush toilet inside	35.7	22.4	13.0	98.3	3.7	0	0	2.4	21.7
Communal Flush toilet	0	0	0	0	0	14.1	99.7	0.3	14
Pit Latrine	0	0	0	0	0	11.4	0	7.7	2.4
Chemical Toilet	0	0	0.3	0.6	0	74.5	0	0.3	9.4
No toilet	0	0	0	0	0.5	0	0	0	0.1
Septic Tank	0	0	0	0	0	0	0	88.9	11.4
Total	100	100	100	100	100	100	100	100	100

***** State-owned houses for rental by officially recognised African urban dwellers.

***Source**: A. Morris (ed.) A Survey of Soweto in the Late 1990s.*

[53] T. Mafokoane, 'Marginal Returns: Problems of Energy Use Among Informal Traders in Mandelaville', *Policy Issues and Actors*, 11, 2, Social Policy Series, Centre for Policy Studies (Johannesburg, 1998).
[54] The parastatal, Eskom undertakes electricity generation for metropolitan Johannesburg.
[55] H. Meintjes, 'Punitive Approach Alone will not Resolve Electricity Payment Problems', *Synopsis*, No. 1 (1997), pp. 4-7.
[56] H. Meintjes and C. White, '"Robbers and Freeloaders"'.

Table 8: Levels of sanitation in Alexandra (%)

Type of Sanitation	Formal houses	Informal backyard	East Bank new private sector	Flats	Male Hostel	Fe-male Hostel	Informal settlement	Total Alex	National	Gauteng
Flush Toilet in dwelling	12	4	99	94	54	78	1	18	22	44
Flush toilet outside	85	70	0	2	46	22	4	66	18	44
Pit latrine	0	0	0	0	0	0	6	0	40	7
Bucket	2	22	0	3	0	0	21	11	6	1
Chemical toilet	1	1	1	1	0	0	67	3	N/A	N/A
No toilet	0	0	0	0	0	0	1	2	11	1
Total	100	100	100	100	100	100	100	100	100	100

Source: *CASE, Determining our own Development: A Community-based Socio-economic Profile of Alexandra.*

Table 9: Electricity supply in Soweto, by housing type (%)

Electricity Supply	Council Houses Forced removals	Council Houses Pre-apartheid	Council Houses Aparthei d period	Private Sector	Backyard Shacks	Informal Settlement	Hostel	Site and Service	%
No electricity	1.4	1.3	1.9	0.6	8.0	97.6	12.2	7.4	16.3
Mains supply with meter	98.6	97.3	97.8	99.2	4.5	0.5	0	1.1	49.7
Electrical extension cord	0	0.3	0.3	0.3	86.9	1.4	0	1.1	11.4
Prepaid card system	0	1.1	0	0	0.3	0	0	89.7	11.7
Other/generat	0	0	0	0	0.3	0.8	87.8	0.8	10.9

or/communal									
Total	100	100	100	100	100	100	100	100	100

***Source**: A. Morris (ed.)* et al, *A Survey of Soweto in the Late 1990s.*

Table 10: Income profile of Soweto residents (%) [57]

Income	Council Houses (Forced removals)	Council Houses (Pre apartheid)	Council Houses (Apartheid period)	Private Sector	Backyard Shacks	Informal Settlement	Hostel	Site and Service	%
R0-499	19.2	19.2	23.4	1.8	13.9	24.1	15.9	17.9	16.4
R500-999	17.4	16.3	21.6	6.7	20.8	31.1	28.8	28.3	20.4
R1000-1499	15.5	17.7	14.5	8.0	29.9	24.9	28.4	20.4	22.3
R1500-1999	12.1	9.2	9.2	10.1	14.9	10.4	13.8	13.3	12.4
R2000-2499	8.4	8.0	8.5	6.4	10.1	3.1	4.7	7.5	8.3
R2500-2999	7.5	6.9	4.6	6.2	3.8	1.4	4.3	5.0	4.8
R3000-3999	10.3	11.3	10.3	15.5	3.5	3.4	1.6	5.4	6.9
R4000-4999	5.2	6.6	2.1	15.8	1.7	1.1	0.3	0.7	3.6
R5000-5999	2.2	3.6	3.2	7.4	1.0	0.0	1.6	0.0	2.2
R6000-6999	0.6	0.5	0.4	7.3	0.3	0.0	0.0	0.4	0.9
R7000 +	1.8	0.7	2.1	14.8	0.0	0.6	0.5	1.1	1.8
Total	100	100	100	100	100	100	100	100	100

***Source**: A. Morris (ed.)* et al, *A Survey of Soweto in the Late 1990s.*

Table 11: Main Source of Energy used for Cooking by Type of Housing (%)

Energy Source	Formal Dwelling (house or flat)	Formal Dwelling in Backyard	Informal Dwelling in Backyard	Informal Dwelling not in Backyard	Hostel	Other	All Housing Types

[57] Until 1999 when it was increased to R16,000, the subsidy amounted to a once off capital grant of R15,000 per household earning less than R1,500 per month. The subsidy is structured to maximise the benefit for the poorest households, so that those earning between R1,500 – R2,500 per month are entitled to R8,500 and those earning between R2,500 – R3,500 per month are entitled to R5,000. At current exchange rates approximately R10 is equivalent to one pound sterling.

Electricity	96	97	29	59	33	100	91
Gas	1	0	0	0	67	0	3
Paraffin	2	2	71	41	0	0	5
Wood	0	0	0	0	0	0	0
Coal or Charcoal	0	1	0	0	0	0	0
Total	100	100	100	100	100	100	100

***Source**: Own analysis of the 1995 October Household Survey*

From Heroes to Villains and the Struggle for Urban Services

There is no doubt that apartheid had its victims and it is equally true that since apartheid's demise, poor conditions have persisted for many among the historically disadvantaged populations. However, it would be wrong simply to characterise Johannesburg's poor as passive victims or to see their condition in static terms. As described by Crankshaw and Parnell the townships of Johannesburg no longer bear the homogenising hallmarks of high apartheid. [58] Alongside the matchbox houses and hostels are backyard shacks, informal settlements and the incremental growth of shantytowns. Equally there are signs of upward mobility with the growth of middle class neighbourhoods and as more modest houses are extended, renovated and adorned with various accoutrements of status.

During the early decades of apartheid the uniformity of the township landscape was matched by little class differentiation within urban African society. The changes evident in the built environment reflected not only increasing social differentiation among township residents but also the political dynamics of reform and resistance. In the 1980s in particular, the structural conditions of inequality were actively challenged. Collective action contributed not only to the struggle for political transformation but also to struggles around goods of collective consumption in organisational forms said to be akin to social movements. [59] As a result access to

[58] O. Crankshaw and S. Parnell, 'Interpreting the 1994 African Township Landscape' in H. Juden and I. Vladislavic (eds), *Architecture After Apartheid* (Cape Town, 1999), pp. 439-443.
[59] M. Swilling and K. Shubane, 'Negotiating Urban Transition'.

services such as water supply, sanitation and electricity in Johannesburg became highly politicised.

During the 1970s, the nationally appointed administration boards ruled the townships with an iron fist. However, with the abolition of the administration boards and the creation of elected black local authorities (BLAs), which were given augmented powers in the early 1980s, white officialdom withdrew from the volatile pit-face of urban governance.[60] As William Beinart has observed:

> Potentially, urban African people could now exercise some control over matters such as housing, rent, and services, which had been the province of authoritarian officials. The central question for politicised urban communities was whether they should participate in state structures, which fell far short of granting full civil rights.[61]

The lukewarm response to the community councils was in part because the BLAs lacked credibility as residents identified them with oppressive government structures. This was reflected in low voter turnouts – invariably less than ten per cent of the potential electorate voted, with even lower proportions being common.

The unpopularity of the BLAs was compounded by their circumscribed mandates, which were matched by even more limited resources. Having responsibility for both spending and raising revenue, a style of patronage politics emerged within a context of local fiscal constraints of crisis proportions. This situation was accompanied by popular uprisings during the mid-1980s and before long the community councils lost control of the townships. Rents were a major source of local income and in 1979 the Greater Soweto Council raised rents by over 80 per cent in an effort to balance their books. Soweto was the first township to protest against rents although the rent boycott subsequently spread across the country and in particular, through the townships in Johannesburg, Pretoria and the Witwatersrand.[62]

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[60] S. Bekker and R. Humphries, *From Control to Confusion: The Changing Role of Administration Boards in South Africa, 1971-1983* (Pietermaritzburg, 1985).
[61] W. Beinart, *Twentieth Century South Africa* (Oxford and Cape Town, 1994) p. 237.
[62] J. Seekings, 'The Origins of Political Mobilisation in the PWV Townships, 1980-84' in W. Cobbett and R. Cohen (eds), *Popular Struggles in South Africa* (London, 1988).

In reaction to these widespread protests, the apartheid government began to initiate a number of reforms, both to woo support from a black elite and to win African hearts and minds more broadly. For the former, urban property rights were returned to those African residents who could afford to pay for them[63] and for a broader urban African constituency costly development plans focussing on electrification and sewerage systems were proposed 'with the cost, unsurprisingly, being passed on to residents'.[64] Further rent increases were announced in 1984, justified in terms of the cost of installations of service provisions. Combined with recession, inflation and the introduction of General Sales Tax in 1983, the fact that residents saw little progress led to an escalation of the rent boycott in Gauteng, which has persisted to the present day.

That the struggle around housing and urban services resulted in increasingly widespread political mobilisation and protest, has led some to argue that the rent boycotts in Johannesburg during the 1980s 'finally brought home the unviability of urban apartheid'.[65] Certainly calls for installations or improved services were critical to the demands of the rent boycott, both in Soweto and Alexandra. For example, in response to a survey on why Sowetans supported the boycott, over half said it was because people thought housing and services were inadequate and around a third said it was because people did not have the money.[66] What is more, these concerns did serve to fuel urban-based political action towards fundamental social change in South Africa.[67] However, once political change was wrought, problems of poverty, inequality and inadequate urban services persisted, as did the rent boycott. It was this that turned heroes of the struggle against apartheid into villains of the post-apartheid peace.

Who are the Fixers? It cannot be Business as Usual[68]

[63] At first the apartheid government offered leasehold rights of 99 years but following a less than enthusiastic response, partly because leasehold tenure had been offered before and then reneged on, conceded to offer freehold urban property rights. This opened the way for the development of middle class housing in the townships.
[64] J. Seekings, 'The Origins of Political Mobilisation in the PWV Townships, 1980-84', p. 66.
[65] M. Swilling and K. Shubane, 'Negotiating Urban Transition', p. 225.
[66] Reported in M. Swilling and K. Shubane, 'Negotiating Urban Transition', p. 234.
[67] M. Mayekiso, *Township Politics, Civic Struggles for a New South Africa* (New York, 1996).
[68] 'It cannot be Business as Usual' is the sub-title of the GJMC policy document, *iGoli 2002.*

A key problem facing the new Metropolitan Council is the tension between maintaining established service levels (in historically white areas) and extending services to new and historically under-serviced (mainly black) areas. The major political issue, therefore, is to be what to do with those who cannot afford to pay for services and the extent to which wealthier citizens should be required to subsidise them. The GJMC is crucially aware that the introduction of rates and service charges, no matter how minimal, may represent a significant increase in living costs for the poor.[69] Equally, they cannot ignore the view that under apartheid, Johannesburg's strong black-supported tax base allowed the city to subsidise white ratepayers, a variation on the 'sweat equity' argument. For reasons of social justice the argument goes, a system of cross-subsidisation at the city level is warranted, in order to right history and to address the issue of sub-standard services in Johannesburg's townships and informal settlements.[70] However, an opposing view of the problem is that the rates and services boycotts of the last 15 years in Johannesburg's townships has meant that the state has effectively been subsidising the consumption of water, sewerage and electricity in black residential areas. This is classically illustrated by the Sandton rates boycott, initiated in 1996.

Sandton is among the most affluent of areas in Johannesburg and wealthy property owners demonstrated their objection to a 150 per cent increase in their rates by withholding payment. By taking this stand they also demonstrated their opposition to the uni-city model for Johannesburg. Central to the transition from the Johannesburg City Council (JCC) which governed the city under apartheid to the current metropolitan structure, have been debates as to how to integrate and organise the former 13 different administrative bodies responsible for running the greater Johannesburg area. Key issues revolved around how best to effect redistribution to areas historically deprived and without a significant revenue base. Slogans such as 'one city, one tax base' and 'one city, one future' won the day over those interests hoping that power would devolve to the four municipal sub-structures under the GJMC. The Sandton ratepayers fell into the latter group. Although cross-subsidisation is by no means guaranteed, even under the uni-city model, they preferred to see cross-subsidisation, if it happened, confined to the more manageable

[69] J. Beall, O. Crankshaw and S. Parnell, *Urban Poverty and Urban Governance in Johannesburg*.
[70] P. Bond, *Cities of Gold, Townships of Coal*.

reach of the Eastern Municipal Council into which Sandton fell. The rates boycott is now resolved, with the Constitutional Court ruling that the Council was within its legal rights to levy the charges, and the Sandton ratepayers have settled their accounts. Although safely confined to history, the well-organised and widely publicised boycott serves as a trenchant reminder to city government, that they need to mind the priorities of a broad range of powerful vested interests.

Equally exercising the GJMC has been the fact that in the case of the townships, a large number that were historically funded by central government are now the responsibility of local government. For Johannesburg this means that around half of the current population now needs to be funded out of the single metropolitan tax base.[71] A key problem facing local government in South Africa, particularly in terms of maintaining service standards and extending delivery, is the issue of unfunded mandates. As Steven Friedman has argued:

> The term 'unfunded mandate' has become the buzzword of the day as lower tiers of government struggle to perform their tasks without being given the funds to do so ….. Half a loaf, says the cliché, is better than no bread. But half-decentralisation in government can be worse than none.[72]

Ironically, the imperative of committing resources to the extension of services to the poor seems also to have raised awareness of the deteriorating condition of the ageing infrastructure in the rest of the city. While there is much to be done in overcoming past inequality and integrating the poor into the network of infrastructure and services enjoyed by the wealthier citizens of Johannesburg, not all of Johannesburg's infrastructure and services challenges can be ascribed to racist policies. Johannesburg is a city just over 100 years old and, as it continues to grow, some of the contradictions of past planning and servicing are beginning to emerge.[73]

The most important new technical demands on infrastructure and services are densification of neighbourhoods across the city, most starkly evidenced by the growth in population of areas such as Hillbrow, and the dramatic expansion of low-income

[71] K. Gordhan, *interview* (Johannesburg, 1999).
[72] S. Friedman, 'National Government Must Stop Passing the Buck', *Synopsis*, 2,1 (January, 1998). p.2.
[73] S. Parnell and G. Pirie, 'Johannesburg' in A. Lemon (ed.), *Homes Apart: South Africa's Segregated Cities* (London, 1991), pp. 129-145.

informal areas at the periphery, such as Diepsloot in the north and Orange Farm in the south. Approximately 10 per cent of the area of GJMC have some spare bulk infrastructure capacity and a further 60 per cent would be able to cope with limited densification.[74] However, shortages in capacity are already apparent. There are also unco-ordinated patterns of infrastructure provision across the city and, for example, sewerage and water supplies are not necessarily strong in the same locations and are showing signs of strain.[75]

Administratively, the imminent shift to an uni-city model involves dissolving the four municipal substructures and the formalisation of the GJMC. In the run up to the sub-structures being phased out and implementation of uni-city structures, the GJMC is being run by the Transformation *Kgotla* or committee, together with the 'Committee of 15', drawn from councillors from each of the substructures and the metropolitan council, assisted by a technical team of urban professionals, financial managers and organisational development consultants. The new dispensation will additionally involve splitting the core administration of the council into a central administration, which will perform a 'client' function, and regional administrations that will perform the 'contractor' function. Functions that are not considered to be core business, such as stadiums, non-strategic land, the Rand Airport and markets will be privatised to raise fresh income for new infrastructure. Certain functions like the Zoo, the Civic Theatre and the bus service will remain in public hands, with incentives for improved performance.

As laid out in the city's new policy document, *iGoli 2002*,[76] the plan for improved service delivery involves the establishment of public utilities for water supply and sanitation, electricity and solid waste management. These are considered to be 'trading services' and the utilities will operate as independent companies with the metropolitan council as the single or major shareholder in each utility and playing a regulatory role. The advantages envisaged from this model include '… the introduction of sound management practices, improve the quality and coverage of service delivery (particularly through raising capital to meet backlogs), and enhance

[74] GJMC, *Composite Land Development Objectives*.
[75] W. Ovens, Independent Planning and Local Government Consultant, *Interview* (Johannesburg, 1998).

the financial stability of Greater Johannesburg (through generating additional revenue).[77]

On paper, *iGoli 2002* has strong neo-liberal overtones and appears designed to tackle head-on the critical financial and institutional problems faced by the GJMC. There is scant mention of social or environmental issues bar a section on the impact on labour relations and the need for careful management and partnership. Nevertheless, Kenny Fihla, Chairperson of the Transformation *Kgotla* of the GJMC, has emphasised the importance of all citizens of Johannesburg coming to terms with redistribution at a citywide level.[78] Ketso Gordhan, the Chief Executive Officer of the GJMC, has put the following interpretation on *iGoli 2002*:

> Sixty five per cent of Johannesburg's income is actual revenue from the sale of services and only thirty five percent of its income is a tax of some sort, either property or commercial. And I think the plan is basically suggesting that we become more commercially minded without undermining the need for political control, accountability and a focus on our social responsibility to provide services particularly to the poor.[79]

Addressing the poor through urban services delivery will include, according to Gordhan, offering free of charge sixty litres per capita per day (l/c/d) of free water, 60 kilowatt hours of free electricity,[80] free waste management in the form of two bin bags per week and no rates charges for anybody who owns property of less than R10,000[81] in value. He goes on to say:

> I think that this is more than any city in South Africa has been able to offer the marginalised poor in its environment. And this is a plan that tries simultaneously to address two very diverging constituencies. One is providing that basic level of service to the poor while upgrading systematically the services to the rich northern suburbs. I live in the northern suburbs and I

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[76] GJMC, *iGoli 2002* (Greater Johannesburg Metropolitan Council, Johannesburg, 1999).
[77] *Ibid.*, p. 16.
[78] Quoted in J. Beall, *Smart Johannesburg, Leading the African Renaissance?* Audiocassette course material for Open University graduate programme 'Third World Development' (Milton Keynes, 1999).
[79] Quoted in J. Beall, *Smart Johannesburg.*
[80] According to the Department for Water Affairs and Forestry (DWAF) the bare minimum of water needed is 25 litres per capital per day (l/c/d). Bahl and Linn (cited in M. Goldblatt, 'The Provision, Pricing and Procurement of Water') quote the African minimum and maximum figures as an average of 65 l/c/d and 290 l/c/d respectively and it appears Johannesburg is opting for the lower of these figures. Clearly setting these figures is not without controversy. Hardoy and Satterthwaite, for example, are cynical about setting criteria at whatever level, arguing that they serve government more than 'poor households' needs'. J. Hardoy and D. Satterthwaite, *Squatter Citizen: Life in the Urban Third World* (London, 1989) p. 4.
[81] Approximately £1,000 UK sterling at current exchange rate.

> would like the city to take basic responsibility for keeping the place clean and tidy and ensure that I get water and electricity and the lights work, and traffic lights operate and other basic things. The northern suburbs residents are paying a huge premium for a very poor quality of service at the moment, and I think we owe them value for money. So that's the story of Johannesburg. That's the story of South Africa.[82]

What Johannesburg intends to do then, is address universal service provision by replacing a lifeline tariff with a lifeline service. In this way it is calculated that the better off who will use more in the way of services and resources will pay more, effectively cross-subsidising those who cannot afford it.

Targeting of any sort is costly and administratively complex but it is believed that by opting for a universal approach to lifeline services along with having the technical capacity in place, difficulties in administering the system will be minimised, the problems of fluid populations and changing occupancy notwithstanding. However, there are those who object strongly to the basic standards approach being adopted by the GJMC. It is advocated both in the MIIF and is influenced by the World Bank's neo-liberal urban policy advice to South Africa. Opponents argue that excessively low standards are inappropriate for a country that the World Bank classifies as 'upper middle-income'.[83] Not only is this considered an inequitable solution but an inefficient one as well, as Patrick Bond has argued:

> The basic service levels contemplated in the *MIIF* are not merely emergency services (piped water or portable toilets in slum settlements that are without water or hygienic facilities at present), but represent more fundamentally, development policy that will be in place for at least a decade. It is extremely difficult to incrementally upgrade infrastructure – particularly sanitation systems – from pit latrines to waterborne sewage, resulting in permanently segregated low-income ghettoes ….[84]

Nevertheless, given the financial crisis in which Johannesburg finds itself, where according to Ketso Gordhan 'we are spending zero on capital expenditure, we have zero in our reserve funds and we are basically a cash-based organisation',[85] the GJMC appears to have come up with a reasonably creative response to the question of who are to be the fixers. It is addressing issues of housing, living environments and

[82] Quoted in J. Beall, *Smart Johannesburg.*
[83] P. Bond and M. Swilling, 'World Bank Financing for Urban Development: Issues and Options for South Africa', *Urban Forum*, 3,2 (1992) pp.
[84] P. Bond, *Cities of Gold, Townships of Coal*.

more specifically urban services in a pro-poor way. The issue of inequality is being tackled more coyly. The question at stake here is whether a metropolitan government such as that of Johannesburg can do any more in the current political climate. To extend service delivery and infrastructure further at the local level requires investment. This is clearly beyond the capacity of metropolitan councils and municipalities facing financial stringency. There is a need for much stronger commitment by national government to restructuring national tariffs to ensure cross-subsidisation, for example between industrial and domestic consumers. This is particularly the case given that it is difficult for low-income householders to share in the recurrent costs of service delivery, let alone to participate significantly in cost recovery of capital expenditure. The GJMC has begun to grapple with these concerns but pursuit of equality and social justice can begin at local government level but cannot end there. Indeed national government cannot simply pass the buck.[86]

Conclusion

Acknowledging that there are limits to how far Johannesburg can go on its own in order to tackle the issue of inequality and redistribution, the question with which we conclude is how well are Johannesburg's efforts towards poverty reduction addressing 'the poverty-environment nexus'? We have shown how the actions poor people take to meet their everyday needs impact on the environment. This pertains whether we are talking about illegal tapping of electricity connections, the use of coal, wood and paraffin in preference to electricity for cooking or the use of rivers for defecation in the absence of adequate sanitation.

What we have not fully discussed is the long-term environmental impact of the activities of better-off residents, such as the devotion to the single occupancy motor vehicle as the primary means of transport. Equally it would be necessary to consider whether, in fact, commercial or industrial service users are the greater environmental villains. Although the blanket of smoke that covers Soweto and Alexandra in the early mornings and evenings is a visible sign of air pollution, it is not the only explanation for Johannesburg's poor air quality. Here culpability has to lie with the

[85] K. Gordhan, *interview* (Johannesburg, 1999).
[86] S. Friedman, 'National Government Must Stop Passing the Buck'.

legacy of gold mining in the form of the city's characteristic mine dumps, which are responsible for dust and fines, particularly when left without vegetation and maintenance care. For the poor, immediate and short-term interests tend to take precedence over concern for long term environmental sustainability. The same can be said of the rich.

In terms of the three urban services considered in this paper, all can be associated with environmental risk. For sanitation, the choice that faces Johannesburg is whether to extend the water-borne sewerage system or rely on pit latrines and chemical toilets for currently unserviced or under-serviced areas. All three systems produce pollutants, both biological and chemical, and outside serious response to rigorous environmental impact assessments, the decision remains ultimately an economic and political one.

For water, alongside the health needs of Johannesburg's population and the commitment to a basic needs approach to development, there are a number of concerns related to how an increase in water consumption can have negative environmental consequences. For example, there are some concerns related to the fact that the GJMC sees water as a 'trading service' and is therefore likely to encourage consumption in what has historically been a water scarce part of the country. The fact that the city is guaranteed water from the first phase of the Lesotho Highlands Water Project ameliorates such concerns at the local level, although it does not address the question of Johannesburg's 'ecological footprint'. However, these concerns have to be set against the clear evidence internationally that enhancing the *volume* of water used by poor people with restricted access, often has equal or better impacts on environmental health than improved water *quality*.

The environmental impact of increased water consumption among Johannesburg's poorer citizens also needs to be considered alongside other users within the city. From the point of view of local government, the state of Johannesburg's bulk infrastructure is a factor, as is the need to monitor how much water is being lost through leakages. Moreover, increased domestic consumption among the poor has to be viewed alongside the high and often wasteful use of water by high-income domestic users. Examples of this include the prevalence of

swimming pools, the liberal use of garden hoses and the loss of water into suburban drains, prompted by an increase in the tendency to pave gardens. Finally, it has to be recognised that industrial water use far exceeds domestic consumption.

As in other contexts, sanitation is the Cinderella service in relation to water supply. In the case of Johannesburg, technological choice has been largely curtailed to water borne sewerage or chemical toilets on the grounds of popular expectations and political imperative and despite environmental consequences. This is pointed out in full recognition that alternative lower cost and environmentally sound strategies may be difficult to advance in the current South African metropolitan context.

Like in the case of water, increased electricity service levels can lead to additional social and ecological costs. Although the GJMC is not the bulk supplier of electricity, it does have vested interests in maintaining control over and promoting its consumption. The revenue from electricity generates an approximate surplus of 20 per cent and contributes to the general revenue of the GJMC.[87] However, given the relative balance between domestic and non-domestic consumption the overall impact is likely to be negligible. More important, perhaps is that increased consumption of electricity, for example through a rise in the purchase of 'white goods' will likely promote local economic development.

In the context of 'unfunded mandates' and the political difficulties of addressing broader inequalities, the GJMC has done a reasonable job in tackling the issue of urban basic services in Johannesburg. However, the city does not yet have a comprehensive pro-poor social justice strategy in place and has not worked out how urban service delivery might fit into a broader strategy for urban poverty reduction.[88] Together with the facilitation of low cost housing in the city, urban services provision forms the core of the GJMC's redistributive strategy. To the extent that this strategy is pro-poor, it falls firmly within a basic needs approach to urban development.

[87] GJMC, *Composite Land Development Objectives*.
[88] It is a moot point in the literature as to whether low-cost housing and extension of urban services in fact reaches the poorest.

However, it is the basic needs approach of old and does not necessarily link the associated brown agenda concerns within a 'poverty-environment nexus'.[89]

Similarly, local government in Johannesburg has neglected to address environmental issues in an integrated way. At present, environmental management is largely focused on the 'green agenda', while policies concerned with social justice and redistribution are firmly grounded in the 'brown agenda'. To link them will be a challenge for local government. It will mean grasping the nettle of competing interests in the city, which are increasingly exercising themselves along the faultline of urban services and the urban environment.

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[89] C.J. Bartone, J. Bernstein, J. Leitmann and J. Eigen, *Toward Environmental Strategies for Cities.*