

# THE URBAN POLITICAL ECOLOGY OF WATER IN CAPE TOWN, SOUTH AFRICA

LAILA SMITH

## 1. INTRODUCTION

One of the goals of the new South African government is to redress the legacy of apartheid through more equitable distribution of public services. The South African Constitution, adopted in 1996, is unique in stating that access to clean water is a basic right. Since 1994, the government has begun developing partnerships with the private sector with the aim of managing public services more efficiently. A vigorous debate in the development literature as to the strengths and weaknesses of moving in this policy direction has been underway for more than a decade (Batley: 1996, Lee: 1996, Marvin and Laurie: 1999, Nigam and Rasheed: 1998, Jackson: 1997, Bartone: 1990). The literature is mute, however, on whether the public/private partnerships in the provision of water lead in fact to greater equity in access to water.

Any effort to create more equitable service distribution in South African cities must overcome the legacy of apartheid. The amalgamation of Cape Town and six other substructures into the Cape Metropolitan Area (CMA)<sup>1</sup> provides an opportune moment for evaluating whether new decision-making structures of the CMA are moving towards greater equity in the distribution of potable water, specifically to low-income communities living in the townships, or whether they are reproducing long-term patterns of urban inequality.

Exploring how spatial patterns of water provision in South Africa reinforce urban inequities requires examining distributive and procedural modes of justice. Many nation-states in the post-war period incorporated notions of distributive justice through public policies that promised universal access to public services. In order to move beyond a notion of social justice that promotes the equal distribution of consumer goods, Iris Marion Young (1990) suggested a closer examination of the social structures and institutional contexts that determine distribution patterns. She placed the formulation of justice within a larger vision of procedural justice related to how we do things, rather than what we have:

The distributive paradigm implicitly assumes that social judgments are about what individual persons have, how much they have, and how that amount

---

<sup>1</sup> Tygerberg, Blaauwburg, Helderberg, Oostenburg, Cape Town and the Cape Metropolitan Council are being amalgamated into a Unicity as of November 1<sup>st</sup>, 2000.

compares with what other persons have. This focus on possession tends to preclude thinking about what people are doing, according to what institutional rules, how their doings and havings are structured by institutionalized relations that constitute their positions, and how the combined effect of their doings has recursive effects on their lives (Young, 1990: 25).

Young argues that justice should focus on larger questions of oppression and domination and should seek to ensure that everyone has the opportunity to participate in decisions that affect their lives. Nancy Fraser (1997) takes this view a step further by arguing for the importance of the underlying processes and structures that foster injustice within a distributive framework.

This paper takes on Fraser's challenge. The paper illustrates how South Africa has moved from a notion of distributive justice -- the Reconstruction and Development Program (RDP) of 1994 promised universal delivery of social welfare provision -- to a skewed version of procedural justice through the Growth Employment And Redistribution Act (GEAR) which adopts the market as the main social and environmental mechanism for service distribution. This shift threatens to create an institutional framework that will make it increasingly difficult for historically marginalized groups to amend the structural inequities in the distribution of public services, such as water provision. I argue that local economic development policies aimed at meeting the broader South African goal of reintegration through the neoliberal policy of 'growth with equity', actually serve to reinforce structural urban inequalities. First, I outline the debate on supply-side and demand-oriented water management approaches. Second, show how in the South African context, the spatial mismatch of water provision emerging from supply-side approaches to water management are a reflection of the way in which urban planning policies structured residential patterns stemming from rapid urban growth. I conclude by pointing out how power relations embedded in the urbanization of Cape Town and its resulting inequalities in the distribution of water problematizes the logic of an economic "growth" paradigm that promotes efficiency (procedural justice) at the expense of equity (distributive justice).

## 2. CONCEPTUAL FRAMEWORK

This paper approaches the issue of equity in access to water to township dwellers in the CMA through an urban political ecology framework. The

framework tries to bridge the divide between human development issues and environmental concerns found in the “sustainable city” literature. This burgeoning literature combines growing concerns over urban environmental devastation with the declining quality of life of the urban poor, who are most often exposed to the dysfunctional environmental features of urban processes, or what has been termed, the ‘brown’ agenda<sup>2</sup> (Hardoy and Satterthwaite, 1997). Rather than integrating environment and development issues, the literature perpetuates the discrete approaches to these topics by focusing on either the development issues associated with the problems of the poor, or the unsustainable patterns associated with negative human impacts on the environment (McGranahan and Songsore, 1994: 3). The development-focused literature takes an instrumental view by treating the environment solely as a resource for human well-being, while neglecting the resilience of urban and peri-urban landscapes in supporting such activities (Choguill and Choguill, 1997, Pugh, 1997). Furthermore, the development-focused literature ignores the spatial situateness of resource flows as they are socially embedded in the power relations that come with the uneven development of cities. The literature concentrating on the environmental aspects of cities (Douglas, 83, Exline et al, 1982, Hough, 1995, Platt 1994, Warren 1997) views the city as an ecosystem and takes a procedural approach in examining how biophysical processes within the urban system may be integrated. The urban ecology stream of this “sustainable cities” literature is, however, apolitical and aspatial. It fails to consider the distributional aspect of environmental services, such as the location of those who benefit from nature’s virtues like access to clean water supply, and the location of those who suffer from nature’s vices as evidenced by people who are exposed to poorly managed waste. These differences can perhaps be attributed to the fact that the development-oriented stream in the literature has focused predominantly on “Third” World cities where urban management approaches have dominated the discourse. In contrast, the urban ecology literature has historically focused on cities in the “First” World, where concerns over consumption practices have superseded critiques of production.

---

<sup>2</sup>. The Brown Agenda involves the conventional environmental health agenda and includes concern for poor quality, overcrowded housing, lack of basic services, hazardous air and water pollution and unmanaged solid waste (IIED, 1999: 17)

Urban political ecology provides a theoretical framework that can address the problematic ways in which urban landscapes have been treated in the “sustainable cities” literature, while also addressing the power relations that determine the distribution of environmental services that are vital to life. Urban political ecology draws from social geography and political ecology. Social geography draws on a combination of welfare geography, using a territorial notion of justice to examine the distribution of benefits such as public services (Smith, 1975, 1977), and a political economy approach that examines structural explanations of unequal power relations (Harvey, 1973, 1996). The political economy lens also provides the foundations of a political ecology framework that looks at human agency in a context that investigates the opportunities and constraints that shape human-environment relations (Blaikie and Brookfield, 1987, Peet and Watts, 1996, Bryant and Bailey, 1996). In light of these intellectual traditions urban political ecology attempts to weave together the politics of production with the socioeconomics of consumption through the medium of the ecological landscape of the city. The recognition of the social production of nature in the city, as well as the threshold of nature’s capacity to replenish, are vital if issues of ecological sustainability are to be combined with a just and empowering urban development (Swyngedouw: 1995).

### **3. THE DEBATE**

#### ***3.1 Water-Supply Management***

A significant proportion of the literature on sustainable cities discusses the health implications of poor urban water supply and inadequate sanitation (Cairncross et al: 1990, Harpham and Werna: 1997, WHO: 1993, 1995). Exploring water-management debates at the state-level, in terms of regional administration, is an important first step in understanding how power relations shape the production and consumption of water at the city-level. Accelerated urbanization has created serious challenges for many developing countries in keeping pace with increasing demands for water (Gilbert, 1992). In depending on grant financing for capital expenditures, the supply-based orientation of public services has been criticized for failing to recover costs, resulting in lack of finance for operations and maintenance (Jackson, 1997: 3). The state’s incapacity to expand service delivery to meet growing demands for water services has disproportionately affected the urban poor.

Studies of water resource management in cities in developing countries point to the productionist logic of dual circuits of supply (Marvin and Laurie,

1999). The primary circuit is served by the state through a public utility, the secondary circuit is run by water vendors. Each circuit operates within a distinct social geography (Montgomery, 1988): higher-income users are frequently located in parts of the city that are connected to formal water distribution networks. These water-users tend to be supplied with water that is underpriced considering the infrastructural and labor expenses associated with maintenance. The underpricing for generally high quality and unlimited supplies of water operates as a form of state subsidy to formal water network users, traditionally the elite of a city. As the formal circuit usually operates at a single rate, the low rates charged by the public utility are rarely high enough to pay for the expansion of existing infrastructure to accommodate new users. New low-income users have little option but to turn to the secondary circuit (Marvin and Laurie, 1999: 344).

The secondary circuit of water-supply management operates in opposition to the patterns of the primary circuit described above. Run by private water traders, the secondary circuit provides water distribution to low-income communities, particularly in rapidly urbanizing areas most often located at the fringe of the city and not connected to primary circuits of water provision. Public utilities are often unable to invest in the infrastructure costs necessary for the expansion of the formal network. They have tended to subsidize the unconnected poor by proxy through providing reduced tariffs to water vendors. Vendors operate on a logic of cost-recovery and profit, and charge much higher prices to informal water users. Black (1996: 6) notes that some urban users pay from ten to four hundred times as much for water through the informal sector than the prices paid by domestic users accessing a public utility. The social and environmental costs of irregular, poor-quality and expensive water supply to marginalized communities have been well documented in the “sustainable cities” literature (Hardoy, Carincross and Satterthwaite, 1990, Black, 1995, Banerjee et al.: 1996, Bennett: 1995, Songsore and McGranahan: 1994).

The spatial mismatch of these dual circuits is a product of the interdependence of each circuit. Although each circuit operates under vastly different technologies, the interrelationship between primary and secondary circuits is dependent on social relations that institutionalize unequal access to water resources (Swyngedouw, 1997). For example, the enormous costs associated with extending bulk infrastructure force the state/public utility to depend on the informal sector to service areas that the state cannot reach. In return for providing a service to the state, informal water traders get

subsidized rates for purchasing water. This subsidy is, however, rarely reflected in prices charged to the poor by water vendors.

The contradictions of supply-side management are well articulated by Marvin and Laurie (1999). First, formal water suppliers run structural deficits as the price charged for water is a fraction of the cost of supplying it, while the absence of measures for pricing consumption patterns prevents accounting of water use. World Bank estimates on cost recovery for developing countries indicate that water prices charged by the formal circuit cover only a third of the average cost of supply (World Bank, 1992). The high engineering costs entailed in bulk infrastructure often require international financing to meet consumption demands. Yet the largest users -- industry, agribusiness and high-income households -- demand low prices, and have the power to get them. The result is a perpetual loss of state revenues, which threatens the maintenance of the primary circuit and the financial resources necessary for extending existing water networks to the disenfranchised. Second, poor urban planning increases the costs of formal provision as water networks follow the development of sprawling settlements where the cost of installing bulk linear infrastructure is much higher than operating within a compact form. This point is important in understanding the Cape Town context, discussed later. Third, the historical dependency on external financing has led to water management approaches that favor large-scale rather than small technologies, and more flexible alternatives (Marvin and Laurie, 1999: 345). Fourth, physical losses and illegal connections are rarely accounted for in trying to make the system more efficient. This is an area where an urban ecology framework could help ensure greater re-use of lost resources through better design in the formal waterworks system (See Hough, 1995, Omeara, 1999). Yet this approach often fails to look at the larger political economy structures that influence not only the supply of water but also the geographically uneven maintenance of water networks. Alas the gulf between social and ecological approaches to urban water management remains an obstacle.

### ***3.2 Shifting the paradigm to a water-demand approach.***

Growing criticisms from international financial institutions, NGO's and environmentalists regarding the contradictions of the supply-side approach, which dominated policy-making in the post-war era, led to a paradigmatic shift in thinking about water resource management in the 80's and 90's. After a series of micro-level studies examined the weaknesses of the productionist logic of supply-side management in the 1980's, the World Bank

became a leading agent in shifting the discourse to demand-oriented management (Gulyani, 1999). In contrast with the supply-side approach, a demand-oriented logic focuses on variations in the volume and pattern of water use by individuals, households, farmers and industry and aims to change the behavior of consumers through measures ranging from pricing through education to regulation.

Another area of criticism of the supply-side approach came from the voluntary sector. NGOs increasingly argued that users should be involved in the management of water and sanitation networks. A series of projects revealed that NGOs were capable of playing intermediary roles between formal water networks and community-based organizations by facilitating the legal and institutional context of self-help schemes (Marvin and Laurie, 1999: 345). Finally, environmentalists provided another critique by pointing to the environmental impacts of large-scale water projects, as well as the tremendous waste of water due to leaks in poorly maintained urban infrastructure. Urban ecologists in particular have developed numerous methods of making water-systems more resource-efficient through design techniques that can reuse waste water by reintegrating it back into the energy cycle of the city (see Hough, 1995).

As a result of these accumulating criticisms, many governments in developing countries embraced a new set of conditionalities in order to secure external support for the reform of water utilities. These involve: (1), the acceptance of private involvement in the provision of water services; (2), the involvement of CBO's and water users in the extension and management of water networks; and (3), increased consideration given to smaller-scale water projects that cater to demand-oriented technologies (Marvin and Laurie, 1999: 347). The demand-oriented discourse has thus become concurrent with a shift in funding styles that moves away from large infrastructure projects to focusing on administrative streamlining so as to enhance the institutional capacity of water providers in cities (World Bank, 1996). The result of this policy shift has been greater promotion of private-sector participation in water provision. By promoting a demand-driven approach entailing the removal of cross-subsidies and levying of user-fees, the private sector motto is that user charges can recover full costs, improve service delivery and reliability, while expanding services to cover a greater number of people, namely the poor (Gulyani, 1999: 9).

The demand-oriented approach depends, however, on a few problematic assumptions. The attempt to move towards a more flexible

mode of delivery, be it household tap or a community stand-pipe for meeting the diverse demands of unconnected water-users rests on a crucial variable, the price people are willing to pay for water (Gulyani, 1999: 12). The private sector involvement in water provision is often perceived by a cash-strapped public sector for its technical capacity to provide demand-led, smaller-scale technologies in service provision. It is believed that this smaller-scale technology can deliver services more quickly. Yet the involvement of the private sector often leads to weeding out state subsidies which enables access to water for low-income households. Thus, the policy move to private sector involvement threatens to further marginalize low-income households. As water is vital to life, people will always be willing to pay user fees in order to access water. However, if user fees for water tends to absorb disproportionate amounts of household incomes, in previously marginalized communities, the privatization of water will only exacerbate existing trends of inequality.

In contrast to the public sector monopoly of water utilities that, ultimately, aims for universal access, private sector suppliers rely on a more narrow financial cost-benefit analysis geared towards cost-recovery and maximizing profit in a market setting. This approach however, neglects the negative externalities that stem from excluding access to those who are unable to pay fees for water. The social costs of poor public health resulting from denying low-income communities access to a vital resource, such as clean drinking water begin with higher infant mortality rates, increased household illness, reduced worker productivity and so forth. In the context of South Africa, such negative externalities serve to reproduce patterns of segregation. In short, the basic ethical question of water provision is altogether absent in the “cost-effective” ideology of the private sector. The move from supply-side management to a demand-oriented approach connotes a shift away from the state using a distributive justice framework synonymous with a welfarist orientation, to a procedural notion of justice which adopts a policy of market environmentalism (Bromley, 1995) aimed at ensuring a more ‘efficient’ allocation of scarce resources. Market environmentalism basically argues that human use of resources is better organized by market prices in the form of charges than by direct government control (Beckerman, 1994).

I have outlined in the preceding section, the shift to a demand-side approach in order to illustrate how the path towards increased private sector participation in the delivery of public services has entered the discourse of development. The backdrop to this shift in policy can also be attributed to



pressures faced by many developing countries for developing partnerships with the private sector due to central government responses to externally imposed structural adjustment programs (Lee, 1996) and to the dominance of neoliberalism (Mactwan, 1999). A scarcity of government resources used to provide public services, combined with donor pressures for fiscal reform, have had a significant impact on the move to private sector involvement in the delivery of public services. While the public/private provision of water has its own particularities, the dual circuits discussed above operate in many aspects of urban infrastructure delivery, including sanitation, electricity and housing (Bately, 1996).

Lack of consideration of the negative externalities in seeing water provision in a market setting is related to the efficiency of 'producing' public services superceding considerations of equity of distribution. Delegating distribution to the workings of the market has the consequence of efficiency in production being delinked from equity in distribution (Corubolo, 1997: 6). Overlooking these dimensions of water provision stems in part from failing to consider the importance of space-based processes and how these interact with water-management policies. When looking at water provision in an urban context, the question of how water is distributed is inescapably spatial, given both the materiality of 'nature' and the diverse processes in which it is transformed into infrastructure services at the local level (Low and Gleeson, 1998: 103). While on the one hand space may be a container for social processes, it also constructs social processes. As Gottdiener (1985: 126) notes, spatial relations play a key role in the reproduction of existing social formations, and in the hierarchically structured administrative practices of the nation-state.

The current debate over private sector involvement in the provision of water in Cape Town illustrates how spatial dimensions that have historically institutionalized inequality are being downplayed. Yet these spatial dimensions play a central role in impeding the procedural justice claims that the private sector promises through the 'efficient' workings of the market. The promise of just distribution arising through the efficiency of the market has little logic considering the spatial dimensions of urbanizing cities. These dimensions shape who has access to clean water, where they access it and how much they access.

## **4. THE CONTEXT**

### **4.1. *The landscape***

Contextualizing water management in South Africa means taking into consideration the ecology of water supply. In South Africa, the debate on privatizing water is particularly vocal, for this is an arid country that must regularly contend with water scarcity. In the CMA, water scarcity is most apparent in the Cape flats, where most of the townships are located, which annually face severe droughts in summer, and are prone to flooding in winter.

There are three significant problems facing the ecological management of water in the CMA. First, poor management of sewage disposal and stormwater run-off has led to over 70% of water brought into the CMA exiting the area as run-off (Dewar, 1991, 95). The absence of storage spaces for rainwater results in minimal recycling to serve the water purposes of industry or household sanitation. Rather, these demands all rely on pristine drinking water. Water waste is an equity, as well as an environmental and efficiency issue -- in a country like South Africa, the amount of water wasted could "provide for every poor black South African with a minimally acceptable amount of water" (Johnson, 1999: 13). Second, the CMA imports water from 4 rivers well beyond its boundaries. Water from these systems is tapped and stored in reservoirs and diverted through tunnels and pipelines to CMA consumers. Industrial dumping of waste products into rivers threatens the supply lines of water to the city. Third, and perhaps most importantly, poor urban land management has led to sprawling low-density human settlements where water consumption is highest (mostly wealthy white suburbs), while many high-density townships do not have adequate infrastructural provisions to access formal water supply (Davies, et al, 1998: 248). Improved ecological management requires integrating industrial resource-use, urban engineering and design practices in how water is stored, and land-use policies. Reforming public policies in each of these areas is intensely political as the existing policies reflect the priorities of vested interests that have historically shaped the urban form.

Water scarcity is also socially constructed. The Department of Water Affairs and Forestry (1997) notes that white South Africans are profligate consumers, whereas about 14 million black South Africans still do not have access to running water. Water is unavailable to many urban black South Africans simply because there is a paucity of pipes and taps in many townships. Unraveling the historical process of urbanization in Cape Town is central to revealing how a move in trying to gain greater efficiency through private sector control of water distribution is problematic in light of the spatialized legacy of inequality in access to water.

#### ***4.2 The urbanization of Cape Town***

Modernist networks inherited from the colonial powers have influenced South Africa's approach to planning. The disorder and public health issues associated with urbanization in South Africa at the turn of the century led to an urban management approach based on curtailing urban growth by controlling city life. These ideas facilitated the implementation of planning controls on the city as a means of enforcing apartheid laws: ie: the division of races was used as a strategy for minimizing urbanization. Municipalities and local government structures played a significant role in implementing and maintaining planning policies for a 'controlled order' Parnell and Mabin, 1995: 42).

In light of these policies, three spatial patterns characterize the way in which urbanization has shaped the South African city and continues to affect urban form. First, low density urban sprawl resulted from a combination of local governments trying to accommodate expansion of white households into peri-urban areas while simultaneously trying to contain the growth of informal settlements beyond the urban fringe. Second, fragmentation shaped urban growth as development occurred in discrete pockets that were bounded by freeways or open space. Town planning practices such as zoning legislation and land and housing policies were put in place to reduce contact between different racial groups. Third, an urban management philosophy dictated the separation of land uses, races and income groups. This was particularly emphasized in the separation of places of work and residence (Dewar, 1991: 94). The apartheid laws of displacing poor people to the townships on the urban periphery has structured the spatial marginalization of low-income migrants to the city as the townships are the fastest growing areas, while also being the furthest away from urban opportunities for upward mobility.

Cape Town's history of urban fragmentation in land-use policies and service provision, along with current processes of rapid urbanization, serve to intensify inequality and the concentration of poverty. Approximately 80% of recent population growth in the Cape Metropolitan Area is occurring in townships without access to water, sanitation and refuse removal services (CMC, 1999). The CMA State of the Environment Report (1999) reported that 36% of the African population in the CMA lives below the poverty line. This translates into a 32% unemployment rate for blacks compared to a 7% unemployment rate for whites (CMC, 1999). While 82% of households have

access to drinkable water in their dwelling, only 34% of these households are in black communities. Furthermore, only 24% of black households have a flush toilet compared to 95% of white households owning one (Central Statistical Services, 1996).<sup>3</sup>

These social gaps have a geographical pattern, particularly in terms of who can afford to pay for water. In the 1980's residents of the townships boycotted rent and service payments in response to poor services and undemocratic local government structures. In the 1990's this "culture of non-payment" still prevails, intensifying the challenges of resource-poor municipalities in upgrading deteriorating infrastructure. The recent introduction of pre-paid meters in the townships was an effort to extend service delivery in a 'cost-effective' manner. Massive protests ensued as the higher costs of this method of collection were transferred to township dwellers through increased water prices. Meanwhile, white neighborhoods that have traditionally accessed formal water networks do not bear the extra costs for administering meters, and pay far less for water. In sum, the demographic and geographic realities of the townships, pose a serious challenge for local governments in addressing the historic backlog of services to these areas, as well as improving and expanding service delivery.

### ***4.3 Economic Development Policies***

Since the 1994 transition to a "post-apartheid" era in South Africa, the state has made a concerted effort towards reintegration, particularly in the urban context. The 1996 Constitution guaranteed socio-economic rights whereby municipalities were charged with ensuring that citizens receive access to services that have historically been denied to them. The mandate to municipalities was to achieve equal levels of service delivery standards across residential areas (Bond, 1999: 44). The Reconstruction and Development Program specified the need for infrastructure-related tariff restructuring, cross-subsidies and lifeline services to the poor with respect to water and electricity. The recent trend of establishing metropolitan regions around

---

<sup>3</sup> Average use of water in Cape Town has been broken into the following categories: 64% of potable water consumed for domestic households is used on gardens (35%) or flushed down the toilet (29%), bathing (20%), laundry and dishwashing (13%) while drinking and cooling consume only 3% of the city's total water supply (Cape Town City Council, 1991). It is important to note how these consumption patterns transpire across spatial patterns that are distinctly racialized.

major cities such as Johannesburg, Vereeniging and Cape Town is an effort to create a more even tax base throughout these urban areas.

However, with a 20% drop in currency rates in 1996, and pressures for fiscal reform by international financial institutions, the South African government adopted a macroeconomic strategy that diminished the status of the RDP as a framework for redistribution. A new development strategy emerged through the GEAR, which Patrick Bond (1999) appropriately terms a “homegrown structural adjustment policy”. The GEAR strategy is based on export-led growth, deregulating labor markets and financial markets to make South Africa more ‘competitive’ and open to foreign investment. In this sense, privatization can be seen as the cornerstone of GEAR in light of the current emphasis in creating a favorable climate for ‘investors’ and capital (COSATU, 1999). Not surprisingly, the Department of Water and Forestry adopted a ‘user pays for services’ principle as one of its guidelines for water supply. Goldblatt notes (1996: 24): “this is in line with a new consensus around a ‘demand-driven’ approach that appears to be developing amongst South African policy-makers in the water and sanitation sector”. This new orientation has coincided with central government transfers to local government for public services cuts of 85% between 1991 and 1997. The combination of this new policy shift and cuts in intergovernmental grants, by 1997, led to massive cut-offs of services to thousands of residential users due to non-payment of municipal service charges (Bond, 1998)<sup>4</sup>.

The shift to this neoliberal line of thinking opened the doors for the Municipal Infrastructure Investment Unit 1997 release of a ten-year plan for infrastructure and service delivery, originally drafted behind closed doors by a World Bank team working with local consultants. It set out guidelines for municipality investment for the delivery of infrastructure services designed to “assist” an urban poor defined as those with incomes below \$150 US a month (R800)<sup>5</sup>. The substandard infrastructure package for the poor includes pit latrines, yard taps, 5-8 Amp electricity supply, untarred roads and no stormwater drainage (Bond, 1999).

---

<sup>4</sup> In the Eastern Cape town of Stutterheim, nearly 5000 households in Mlungsi township were cut off in late 1997. A series of township protests broke out demanding lower service charges, an end to pre-paid electricity meters and cut-offs to basic services.

<sup>5</sup> This is approximately one third of the CMA population, most of which are living in the townships.

The pattern of municipal infrastructure investment for South African cities has enormous implications for consolidating post-apartheid ghettos where it will be too costly for low-income areas to upgrade from 'basic' to full services. As Bond (1999:45) notes, "Clearly, the spatial dimensions of neo-apartheid geography have not been factored into the MIIU plan. The basic levels outlined by the MIIU represent a development policy that will be in place for a decade". Considering the high costs associated with incrementally upgrading infrastructure, this minimalist approach to infrastructure provision enforces permanently segregated low-income ghettos.

The consequences for this level of municipal investment in infrastructure is particularly significant when examining the gradual move within South Africa to partner with the private sector in the provision of water services.<sup>6</sup> The most critical feature of private sector involvement has been that cross-subsidies are rooted out and replaced with cost-reflective pricing. Bond's research on the privatization of water in Southern Africa notes widespread evidence of increased cut-offs in service and greater rigidity towards low-income water-users once public utilities enter into partnership with the private sector (Bond, 1999). The private sector will only operate where there is a promise of return for its investment. Without adequate built infrastructure for water delivery, low-income communities will hardly be able to attract the private sector involvement in supplying them with water at a level that ensures-cost recovery.

## 5. THE CONTRADICTIONS OF ECONOMICS

The macro-economic policies stemming from GEAR have had a distinct effect on local government<sup>7</sup> efforts in meeting the South African goal of reintegration. Recent policies have involved drawing up plans for creating 'activity corridors' and network nodes focusing on transport exchange.

---

<sup>6</sup> Private sector involvement in the provision of public infrastructure can take form in a variety of service contracts, such as 1) management contracts (between 2 and 20 years); 2) renting or leasing of assets (between 10 and 20 years) and; 3) investment linked contracts or concessions. Outright privatization (complete private ownership) of water supply is not yet under serious consideration in South Africa (Jackson, 1998).

<sup>7</sup> Local Government in the context of the CMA refers to the Cape Metropolitan Council that is responsible for ensuring the redistribution of services in the Cape Metropolitan Area such as water, electricity, transportation and regional planning.

These planning initiatives aim to spur new local economic development opportunities between wealthy suburbs, city centers and the townships. The aim of such integrated sites is to increase densification of residential development and concentrate public investment in these areas (Harrison, et al. 1997: 49). The intended long-term impacts of these economic development strategies is to minimize the long distance township dwellers must travel in order to reach sites of employment and services. Improving infrastructure services in the townships is seen by local government as an a priori step for attracting business investment. Harrison et al. (1997) argue, however, that improving services is more than merely increasing access to social benefits, but requires economic spin-offs, and that without adequate provision of infrastructure, such as electricity and water, economic development will be severely constrained. In many townships, lack of basic infrastructure or reliable services makes economic activities in the formal sector enormously difficult.

There are several problems with the design of these economic development policies. First, local government hopes to attract public infrastructure to the townships for the purposes of production, while neglecting the priority of improving services to the urban poor living in these areas. Second, the siting of new industries in areas where there is easy access to reliable infrastructure disadvantages the townships from attracting capital investment. The CMA has tried to attract high-technology industry and tourism. Consequentially, most formal and industrial growth is occurring in light and high-technology industries based on information technologies and oriented towards services in the north-western area of the CMA. The skilled workers in these growth areas are drawn from proximate colored and white communities. Businesses are therefore unlikely to locate in and around townships (south-eastern part of the CMA) as these sites cannot offer the level of infrastructure needed to attract investment (Harrison, et al, 1997: 47). Third, local government policies are aimed at providing services for economic investment in a more labor-intensive way so as to provide greater employment opportunities for nearby township residents. At the same time, adherence to World Bank lending policies requires administrative streamlining. A significant part of the resistance from the South African Municipal Worker Project (SAMWU), the major public employee trade union of South Africa, to private sector involvement in the provision of public services is that such 'administrative streamlining' entails massive layoffs of public employees.

The tension between recent local government economic development policies aimed at reintegration and the acute persistence of inequality begins with the contradictory role of local government. On the one hand local government is approaching reintegration through local economic development policies that promote growth in order to ensure greater equity. On the other hand, it is maintaining the spatial form of segregation through the continuation of its traditional approaches to urban development, ie: uneven distribution of urban infrastructure. When a “growth with equity” model is overlain onto the reality of unequal distribution in urban infrastructure, local government policies serve to consolidate power relations that determine where capital will invest to produce the ‘growth’ that is rhetorically supposed to harness equity in distribution. However, in light of the CMA’s segregated residential patterns, who has the right to social, economic and environmental health will continue to reflect the sociospatial patterns embedded in the city.

This paper has traced how the discourse of water management at the state level has distinctly negative consequences for water distribution policies at the local level, precisely because of its failure to consider the spatial context of urbanization. South Africa’s entry into the global economy since 1994, and the adoption of GEAR policies since 1996, produced new forms of urban governance that have replicated past apartheid modes of distribution. I have tried to expose the institutional context that determines the material distribution of water in the Cape Metropolitan Area in an effort to unveil the procedural steps that structure water provision.



**BIBLIOGRAPHY**

Banes, C. Kalbermatten, J., and Nankman, P. "Infrastructure Provision for the Urban Poor: Assessing the Needs and Identifying the Alternatives". Transportation, Water and the Urban Development Department, World Bank, 1996.

Bartone, C. "The Role of the Private Sector in Developing Countries: Keys to Success" in Urban Management: A Book of Selected Readings. EDI, World Bank, Washington, D.C., 2000. (forthcoming)

Batley, Richard, 1996. "Public-Private Relationships and Performance in Service Provision", *Urban Studies* 33 (4/5), pp. 723-51.

Beckerman, W. In Defence of Economic Growth. London: Jonathan Cape: London, 1974.

Bennett, Vivianne. Bennett, Vivienne. The Politics of Water. University of Pittsburgh Press: Pittsburgh, 1995.

Black, M. Thirsty Cities: Water Sanitation and the Urban Poor. London: WaterAid, 1996.

Black, M. "Mega-slums: The Coming Sanitary Crisis". London: WaterAid, 1995.

Bond, P. "Privatization, Participation and Poorest in the Restructuring of Municipal Services", *Urban Forum*, 9 (1), 1998, pp. 36-76.

Bond, P. "Basic Infrastructure for Socio-Economic Development, Ecological Sustainability and Geographical Desegregation: South African's Unmet Challenge" in *Geoforum*, 30, 1, 1999, pp. 43-59.

Bromley, D.W. (ed). The Handbook of Environmental Economics. Blackwell: London, 1995.

Bryant, R. and Sinead Bailey. Third World Political Ecology. Routledge: London, 1997.

Cairncross, Sandy. "Water Supply and the Urban Poor." In *The Poor Die Young* edited by Sandy Cairncross, J. Hardoy and D. Satterwaite, 109-126. Earthscan Publications LTD: London, 1990.

Choguill, C. and M. Choguill, "Towards Sustainable Infrastructure for Low-income Communities" in Sustainability, the Environment and Urbanization edited by Cedric Pugh, Earthscan: London, 1997, pp.83-103.

Cape Metropolitan Council, 1999. State of the Environment Report ([http://cmc.gov.za/peh/soe/settle\\_a.htm](http://cmc.gov.za/peh/soe/settle_a.htm))

Central Statistical Services. National Census Report. Pretoria, 1996,

Corubolo, Enrico, "Urban Management and Social Justice. Space, power and modernity". Presented at International Workshop on the Urban Forum, Venice, 1997, pp. 1-25.

([http://obelix.polito.it/forum/n-areus/venezia/paper\\_corubolo.html](http://obelix.polito.it/forum/n-areus/venezia/paper_corubolo.html)).

COSATU, "Anti-Privatization Campaigns Bulletin Online", 1999.

Crane, Randall and A. Daniere. "Measuring Access to Basic Services in Global Cities." *Journal of the American Planning* 62, no. 2 (1996).

Davies, Bryan and Jenny Day. *Vanishing Waters*. Cape Town: UCT press, 1998.

Dewar , David. "Cities Under Stress." In *Restoring the Land*, edited by Mamphela and Chris McDowell Ramphele, 91-102. Panos: London: 1991.

Douglas, Ian. *The Urban Environment*. Edward Arnold, Great Britain, 1983.

Exline, C. et al. *The City-Patterns and Processes in the Urban Economic System*. Westview Press, Boulder, Colorado. 1982

Falkenmark, M. "The Massive Water Scarcity Now Threatening Africa --Why Isn't it Being Addressed?" *Ambio* 18, no. 2 (1989): 112-118.

Fraser, Nancy. Justice Interruptus: Critical Reflections on the "Postsocialist"

Condition. Routledge: New York

Hardoy, Jorge and D. Satterwaite. "Building the future city". In Cities in the Developing World edited by Joseph Gugler, Oxford University Press, New York, 1997.

Harrison, P. et al., "Transforming South Africa's cities: Prospects for the economic development of urban townships" in *Development Southern Africa*, Vol, 14., No. 1, February, 1997, pp. 43-60.

Harpham, T. and E. Werna. "The idea of Healthy Cities and its Application". In Sustainability, the Environment and Urbanization edited by Cedric Pugh. Eastscan: London, 1997, pp.63-82.

Harvey, David. Social Justice and the City. Edward Arnold: London, 1973.

Harvey, David. Justice, Nature and the Geography of Difference. Blackwell: London, 1996.

Hough, Micheal. Cities and Natural Processes. Routledge: New York, 1995.

Gleick, P.H. *Water in Crisis: A Guide to the World's Fresh Water Resources*. Oxford University Press: New York, 1993.

Gilbert, A. "Third World Cities: housing, infrastructure and servicing", *Urban Studies*, 29, (1992) pp. 435-460.

Goldblatt, M. "Making the cup run over - the challenge of urban water supply for South Africa's Reconstruction and Development Programme." *Geojournal* 39 (1996): 21-26.

Gottdiener, M. The Social Production of Urban Space. Second Edition. University of Texas, Press: Austin, 1994

Grosso, Laura. "Providing Access to Safe Drinking Water in Less Developed Countries." Paper presented at the GIS and Water Resources, Fort Lauderdale, Florida, September 22-26, 1996.

Gulyani, Sumila. "Delivery and Financing of Infrastructure Services" in Urban Management: A Book of Selected Readings, EDI, World Bank, Washington, D.C., 2000. (forthcoming)

International Institute for Environment and Development (IIED). "Addressing Environment and Development in Urban Areas." , 4-26. London, 1999.

Jackson, Barry. "Private Sector Participation in South Africa's Water Sector: pressures, policies and lessons from experience" Presented at a seminar "Cost Recovery: sustainability and equity in the provision of urban services" Washington, D.C, Sept., 1997.

Kjellen, Marianne and Gordon McGranahan. "Comprehensive Assessment of the freshwater resources of the world" Stockholm Environmental Institute, 1997, pp. 1-54

Lee, Terence. "Alternatives for private participation in the provision of water services" *Natural Resources Forum*, Vol, 20, no 4, 1996, pp. 333-341.

Low and Gleeson. Nature, Society and Justice. Routledge: London, 1998.

Lundqvist, Jan and Gleick, Peter. "Comprehensive Assessment of the freshwater resources of the world" Stockholm Environmental Institute, 1997, pp. 1-48

Marvin, S., Laurie N. "An Emerging Logic of Urban Water Management, Cochabamba, Bolivia." *Urban Studies* 36, no. 2 (1999): 341-357.

McGranahan, Gordon and Jacob Songsore. "Wealth, health, and the urban household: weighing environmental burdens." *Environment* 36, no. 6 (1994): 4-14.

Montgomery, J.B. "The informal service sector as an administrative resource" in D.A. Rondinelli and G.S. Cheema (Eds) Urban Services in Developing Countries, pp. 89-111. Macmillan: Hong Kong.

Morris, John, "The Distributional Impacts of Privatization in National Water-Quality Policy", *Journal of Politics*, Vol 59, No 1, 1997, pp. 56-72.

Nigam, A., Rasheed S., 1998. "Financing of Fresh Water for All: A Rights Based Approach" United Nations Children's Fund, *Programme Publications*, pp. 1-18 (<http://www.access.digex.net/~ehp/unicef.html>).

Omeara, Molly, "Exploring a New Vision for Cities" State of the World. Norton & Company: London, 1999

Parnell, Susan. "Rethinking Urban South Africa." *Journal of Southern African Studies* 21, no. 1 (1995): 39-61.

Parnell, S. and A. Mabin, "Rethinking Urban South Africa" in *Journal of Southern African Studies*, Vol, 21, No 1, March 1995, pp.39-61.

Peet, R. and M. Watts. *Liberation Ecologies*. Routledge: London, 1996.

Platt, Rutherford, Rowntree Rowan, Merick Pamela, eds. *The Ecological City*. University of Massachusetts Press: Amherst, 1994.

Pugh, Cedric, "Sustainability and Sustainable Cities" in *Sustainability, the Environment and Urbanization* edited by Cedric Pugh. Eastscan: London, 1997, pp.135-179.

Smith, D.M. *Patterns in Human Geography*. Penguin: Harmondsworth, 1975.

Smith, D.M. *Human Geography: A Welfare Approach*. Edward Arnold: London, 1977.

Swyngedouw, Eric. "Power, nature, and the city. The conquest of water and the political ecology of urbanization in Guayaquil, Ecuador: 1980-1990." *Environment and Planning A* 29 (1997): 311-322.

Young, Iris Marion. *Justice and the Politics of Difference*. Princeton University Press: Princeton, 1990.

Warren, Roxanne, *The Urban Oasis*, McGraw-Hill, New York, 1997.

WCDEF (Western Cape Economic Development Forum). 1993. *The Way Forward: Draft Report for Discussion*, Cape Town.

WCDEF (Western Cape Economic Development Forum). *The Way Forward: Draft Report for Discussion*. Cape Town, 1993.

World Bank, *The World Development Report 1992: Development and the Environment* Oxford University Press, New York: 1992.

WHO, The Urban Health Crisis: Strategies for Health for All in the Face of Rapid Urbanization, World Health Organization, Geneva, 1993.

WHO, A Review of the Operation and Future Development of the WHO Healthy Cities Programme, World Health Organization, Geneva, 1995.

Geography of Cape Town, South Africa: Read this article to learn ten facts about the South African city of Cape Town. Learn about Cape Town's history, demographics, geography and biodiversity from Geography at About.com. Amanda Briney is a professional geographer, writer, and scholar with three university degrees and an advanced certificate in GIS. Updated June 23, 2017. Cape Town is a large city located in South Africa. It is the second largest city in that country based on population and is the largest inland area (at 948 square miles or 2,455 square kilometers). As of 2007, the Cape Town's population was 3,497,097. It is also the legislative capital of South Africa and is the provincial capital for its region. The Cape Town Ecology Group was a South Africa-based radical environmental group, founded in 1987, as a "child of Koeberg Alert", and active until the early 1990s. It espoused a more political-oriented green ideology as opposed to the apartheid-based conservation groups of the time. According to founder Mike Cope: "We felt the need to view ecological issues on a broader level and recognised the connection between politics and ecology. Ecology is definitely a political issue because environmental issues are about where we live." [1]. CTEG postcard. Urban and Town Ecology. Explanation of marine Plasma production inside phytoplankton blooms. Google Hangout with NG Explorer & Ecologist Clare Fieseler. Download Citation on ResearchGate | A Political Ecology of Water Struggles in Durban, South Africa | This thesis looks at the relationship between water and social power. It attempts to answer two questions: who controls the distribution of water in the South African city of Durban? And how might this distribution be transformed in positive democratic ways? The framework of analysis builds upon work conducted in urban political ecology. In particular, I argue that urban environments, indeed all environments, should be understood as created ecosystems. Recognising this, I suggest that Durban's waterscape should be seen as produced through capitalist social relations. Working the Socio-Natural Relations of the Urban Waterscape in South Africa. Article. Mar 2007.