FROM LED TO SLED?

LOCAL GOVERNMENT AND THE POLITICS OF SUSTAINABILITY

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Abstract

The concept of sustainability has gained in legitimacy in recent years. Global policy debates increasingly focus on the challenges posed by natural resource limits to the ways in which production and consumption are structured in a world sharply divided between rich and poor. At the heart of the debate is a simple fact with profound implications: the earth does not have sufficient ecological resources to support a development strategy that promises all people can live like the global middle class. A sustainability perspective suggests that the only way poverty eradication can be achieved is by uncoupling our production and consumption systems from rising levels of natural resource use.

This Briefing argues that Local Government in South Africa is not appropriately configured to meet the sustainable development challenge. A major obstacle is the dualistic nature of regulatory frameworks - particularly in respect of IDPs and IEAs. Adopting a sustainability paradigm forces us to rethink the meaning of development and question the adequacy of an 'impact mitigation' mindset inherent in current policy frames. If LED is pursued without embracing the real challenges of sustainability, outcomes will be short-lived as they inevitably come up against the long-term impact of previously unrecognised ecological thresholds.

Introduction

Sustainable development has become a buzzword, but is rarely adequately defined. Many problems that top the agenda in South African municipalities and hinder LED strategies - traffic congestion, rising water and energy prices, declining food security, rapidly rising building costs, shortage of landfill space, polluted rivers, degraded environments and overflowing sewage treatment plants - are rooted in unsustainable resource use. But often they are translated into conventional infrastructure solutions that exacerbate the underlying problems and hence do little to stimulate local economies. A sustainability perspective provides a way of rethinking solutions within a context of rapidly depleting natural resources and degraded eco-system services.

This Briefing considers implications of sustainable development for the governance of South African urban centres. Since the Earth Summit in Rio (1992) and in the wake of the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002, the world has changed quite fundamentally and we now understand in greater detail the multiple challenges we must confront. We live in a highly unequal, urbanised world connected to rapidly degrading eco-system services, with looming threats triggered by climate change, high oil prices and food insecurities. Increasingly across the world, Local Governments are dealing with these issues in their practical manifestations - it is at the point of everyday living that this crisis is felt in the first instance. It is therefore no surprise that Local Governments are leading the way in responding to the sustainability crisis (see www.iclei.com).

The challenge of sustainable development is about eradicating poverty and inequality, and doing this in a way that rebuilds the eco-systems and natural resources on which we depend for our collective survival. Human needs continue to expand while our eco-systems are finite and being substantively eroded. The only way poverty eradication can be achieved is if we radically uncouple our production and consumption systems and their management from rising levels of natural resource use. This "dematerialisation" is more popularly referred to as reducing the size of our "ecological footprint" (see Wackernagle & Rees, 2004). We now possess technologies that enable entire communities to meet their material needs by re-using all their solid and liquid wastes, using renewable energy to meet most of their needs instead of burning fossil fuels, renewing rather than degrading soils for food production, cleaning rather than polluting the air, preserving instead of cutting down forests and natural vegetation, under - and not over - exploiting water supplies, and conserving instead of destroying other living species.

Defining the sustainability challenge in this way raises important issues for South African Local Government, which must pursue LED strategies to achieve development goals. But LED is not generally seen through the prism of a sustainability paradigm. If LED is pursued without embracing the real challenges of sustainability, outcomes are going to be short-term and not enduring. We need to expand the notion of LED to SLED: *Sustainable Local Economic Development*.

Sustainability and the Urban Challenge

In the last decade a "sustainable cities" discourse has emerged, laying the basis for a new analytical framework to rethink the political economy of cities from the point of view of their dependence on increasingly constrained "sources" of natural resources and diminishing "sinks" for unwanted wastes (Satterthwaite, 2001). This discourse raises critical concerns about the ecological sustainability of existing urban systems and seriously questions whether it is possible to resolve urban poverty without significantly reducing the high levels of urban over-consumption by the middle and rich classes of key natural resources such as water, energy, land and clean air (see Low et. al., 2000; Sachs, 2002).

Whereas more innovative cities around the world have over the past decade experimented with sustainability and dematerialisation, South African Local Governments - and the communities they serve - have imagined and planned urban development using remarkably conventional modernist conceptual frameworks inspired almost entirely by American urban planning traditions. Virtually without exception, the Integrated Development Plans (IDP) written during the first decade of democracy - and the associated development projects that have resulted in the expansion of the urban system - have depended on technologies prescribed by the mainstream engineering, planning and architectural professions (Muller, 2006). The combined impact of our developmental policy frameworks and conventional technology solutions has resulted in the following:

- The extension of cheap electricity generated from coal-fired power stations without prioritizing energy efficiency (via building regulations, insulation, correct North-South orientation, eliminating incandescent lighting, etc) and renewable energy options (such as solar water heaters, wind generation, biomass). Local Governments are highly dependent on surpluses generated from electricity sales to subsidize overheads and other services. This means they have no incentive to promote energy efficiency, nor do households have a real interest in finding alternatives to cheap grid electricity (by, for example, purchasing CFLs rather than incandescent light bulbs).

- Road-based transportation solutions that favour the private car and minibus taxi-based systems rather than integrated bus-rail-taxi systems that are less dependent on imported oil, more user-friendly for poor people, and less likely to lead to congested highways and rapidly rising transport costs for poor and middle class households.

- Water and sanitation systems that fail to promote water efficiency, rainwater harvesting, re-use of grey water, capture of the methane via biogas treatment systems, nutrient capture for food production and localized sanitation systems. Instead, the focus has been on expensive, inefficient large-scale solutions where effluents go into landfills, rivers and the sea with minimal re-use for productive purposes. Water demand between 1996 and 2030 is expected to triple in the urban domestic household sector, and double in the mining and industrial sector. By 2030, DWAF reckons demand will have outstripped supply (Rowlston, 2005). Yet IDPs rarely focus on water saving and efficiency.

- Solid waste outputs from our cities have grown faster than the average economic growth rate over the past decade. In many cities, elite suburbs generate half the total domestic waste stream. Costs of disposal over the past five years have doubled in many areas. At most 20% of all our solid waste is recycled, although it is much higher when it comes to industrial waste. Why do IDPs not incorporate zero waste alternatives?

- The construction and operation of buildings accounts for 50 percent of all CO2 released into the atmosphere, making them a major contributor to global warming. Cement is derived from lime baked in kilns that reach temperatures of up to 2000 degree C. For every ton of cement produced, one ton of CO2 is emitted into the atmosphere (Monbiot, 2006). Instead of depending on cement, air-conditioning and electronic lighting, architects could use alternative building materials and designs to secure more natural light, maximize passive heating and cooling, improve insulation and so on, thereby reducing our cities' impact on climate change. But building regulations are not conducive and Local Governments have done little to introduce bye-laws governing the sustainability of the houses and buildings whose building plans they approve every day.

- Food supplies: About 15% of the world's food is now grown in urban areas according to the UN as cited in Pearce (2006:39). South African Local Governments have done relatively little to promote urban agriculture - and sometimes actively discouraged it - despite positive evidence about the potential of urban agricultural as a local job generator (Rogerson, 2003). Officials and most citizens associate agriculture with what happens in rural areas, not cities. Sourcing from local small farmers and incentivizing organic production has also not been a priority.

- Spatial planning: despite many policy statements favouring compact cities, our society remains addicted to low density urban sprawl along road transportation routes, which increases average distances between home and work. Low density spatial sprawl makes affordable public transportation economically unviable; it is mall-centred which destroys the social lifeblood of local communities as neighbourhood commercial centres collapse; it assumes cheap energy to make it work, and that funds are available to endlessly extend water, sanitation, road and stormwater infrastructure systems. Housing the poor on cheap land on the periphery is highly profitable for developers, but in the end costs the fiscus more than purchasing more expensive inner city land. Sprawl in some areas has been so bad that it would be cheaper for the state to pay people to stay at home than to subsidize the costs of transporting them to work (CSIR and Adec, 2004). As the oil price rises, this will become an increasingly attractive proposition.

The development assumptions inscribed in the IDPs and the technology solutions embedded in urban development projects reflect the changing nature of South African cities and urban policy in the post-apartheid era. But they largely fail to consider the real and increasingly apparent limits of key ecological resources. Without integrating this stark reality into planning frameworks, we argue that it is impossible to conceive of local economies that provide enduring benefits and opportunities to our communities.

A Dualistic Regulatory Framework

Local Government in South Africa is caught between two mutually exclusive paradigms: the municipal developmentalism that inspires the Municipal Systems Act, particularly its requirement of IDPs that include LED strategies; and the environmental conservationism that inspires the National Environmental Management Act, particularly the prescribed Environmental Impact Assessments (EIAs). Neither of these policyframes adequately capture what sustainable urban development means. Efficient use of natural resources and increased use of renewable resources is simply not a requirement when it comes to IDPs and EIAs. But if we can uncouple urban development from eco-system degradation and unsustainable use of resources, we move necessarily beyond the 'development-conservationist' dualism.

A major obstacle to such uncoupling is the NHBRC. Banks will bond only buildings with an NHBRC certificate, and the latter will not certify buildings using non-conventional materials and designs. The NHBRC[1] effectively makes innovation in the built environment illegal. In contrast, government and financial institutions in Germany, Japan, the USA (to name a few) offer incentives for sustainable buildings. By ignoring sustainability issues, the NHBRC incurs economic and environmental costs today that will burden future generations of South Africans.

More broadly, sustainability thinking and "ecologically sustainable development and use of natural resources[2]" was never part of the core body of knowledge that informed the way IDPs were conceptualised. Its themes are not typically considered by

1 The National Home Builders Regulatory Council exists to protect the consumer from builders who do sub-standard work. However, by ignoring sustainability issues it now incurs economic and environmental costs that will burden future generations of South Africans.

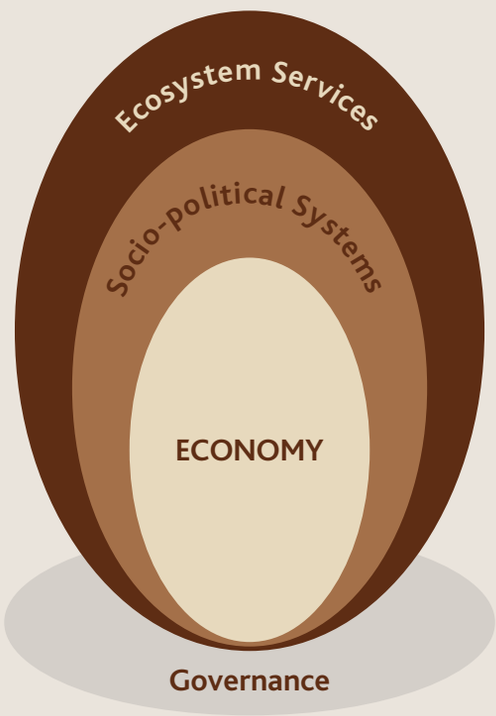
2 Not many people realise that this is in fact a Constitutional right, enshrined in paragraph 24(b) of the Bill of Rights.

the LED community (whether in government, consulting firms or parastatals like DBSA). With few exceptions[3] the consultants and officials involved with the formulation of IDPs and LED plans belong to a generation of development thinking entirely separate from ecological sciences. For them, environment is looked after by the EIA community - 'the greenies'. This results in a fragmented approach where the relationships between social, economic and natural environmental concerns are treated separately. On the EIA side, a major policy shortcoming is that there is no provision for a mandatory EIA-type process at town or city level, only at project level. A recent review of the process of IDP formulation concludes that none of the IDPs have been informed by a strategic environmental assessment (Muller, 2006).

The national regulatory frameworks within which Municipalities are required to operate create a dualistic 'development-plus-impact-assessment' paradigm that results in the popular perception amongst politicians and many officials that development and environmental conservation are irreconcilable, and that meeting the extensive needs within Municipalities requires "trade-offs" (RSA, 2002). EIAs in particular are seen to be 'retarding development'. This perception is a reflection of the dysfunctional consequences of this dualistic framework, which effectively leaves uncontested conventional conceptions of development.

An alternative approach is urgently needed. In a situation of continuing inequality, accompanied by a deteriorating resource base, it is imperative for us to go beyond thinking in terms of trade-offs. If we recognise that there are non-negotiable ecological thresholds; that we need to maintain our stock of natural capital over time; and that we must employ the precautionary principle in this approach; that is when we will realise that we need to rethink what we mean by "development". Uncoupling development from rising resource use is what sustainability is all about. This will entail a systems thinking approach that depicts social, economic and ecosystem factors as embedded within each other, and underpinned by our systems of governance.

Beyond Development & Environment Dualism



The sustainability challenge in the urban context means rethinking the structure, function and purpose of neighbourhoods. The core focus of urban planning for at least a century has been the creation of 'consumption neighbourhoods' - areas designed for the consumption of goods supplied via market transactions. Neighbourhood design and construction have played a particular role in the historical development of the capitalist market and the urban forms that particular modes of capitalist regulation required. This includes infrastructure services like roads, energy, water and waste, as well as consumption goods such as food and household furniture. Above all, they have been designed on the assumption that cheap oil will stay cheap forever. The sustainability challenge means designing and building 'sustainable neighbourhoods'. These will be areas that will enjoy a greater sense of community, be more diverse, and will generate more energy than they consume, produce no waste for the landfill, reduce water consumption to a minimum by recycling and re-using black and grey effluents, and be as self-sufficient as possible by promoting and supporting local urban agricultural products.

The Accelerated and Shared Growth Initiative for South Africa (ASGI-SA) aims to increase growth to an average of 6% per annum via a range of strategies, but the most important is a massive multi-year R375 billion plus investment in public infrastructure. The MIG Fund will play a crucial role because it will be the primary source of funds for investment in municipal infrastructure. However, if nothing changes, this massive infrastructure investment programme could result in investments that perpetuate and exacerbate unsustainable urban forms and processes, thus diminishing its poverty reduction and growth promoting potential. Unlike China and other places going through large-scale infrastructure development processes, there is virtually no research into building what the Stern Report calls "low carbon" infrastructure (Stern, 2006). We are building ourselves into a financially unsustainable resource intensive infrastructural cul de sac. This is where the recently released National Framework for Sustainable Development in South Africa (RSA, 2006a) could influence outcomes at the local level, especially if Local Governments use it to lead the way in designing 'low carbon' affordable and sustainable infrastructure.

The National Framework for Sustainable Development (NFSD) defines integrated sustainable development in a way that is

3 See LED Framework for the Overstrand Municipality

appropriate to the SA context, and provides a set of criteria for assessing progress. It demonstrates that there are various long-term resource use trends which will in future undermine - and may have already undermined - future growth and poverty reduction strategies. The NFSD suggests an approach to sustainable resource use that could lead to significant dematerialisation over the long-term thus obviating the risks posed by rapidly degrading ecosystem services. The NFSD targets the national infrastructure programme in particular and suggests that this provides a major opportunity for fundamentally redefining the criteria that the design professions will use to design and build these infrastructures.

Towards Sustainable LED (SLED)

The NFSD contributes significantly to a new understanding of the relationship between LED and resource use by itemising the eco-system resources that economic growth will depend on. For example, the growth in water consumption has grown roughly at the same rate as the economy over the decades. However, every expert in the water sector plus DWAF agree that South Africa only has between 1,2% and 1,7% extra fresh water capacity left, i.e. water consumption can only grow another 1,2-1,7% before hitting the ceiling (Blignaut, 2006). The result will be the retardation of growth and increasingly costly implications of over-exploitation (e.g. dilution of waste absorption capacities, etc) which, in turn, will loop back to undercut growth as the costs of remedial action kick in. The economically sensible thing to do is, therefore, to invest in technologies and systems that uncouple economic growth from rising raw water consumption. A good example is treating and re-using every last litre of sewerage that comes out of urban households and businesses. Investing in new ways of doing things is an economic growth stimulant, and the result of such interventions is to prevent growth retardation later on.

The logic applied here to the water sector can be applied to all the other eco-system resource sectors. *The National Framework for Sustainable Development* identifies the same basic trend with respect to various key eco-system challenges, including climate change; oil peak and oil-based fuels and products; energy production and demand; water and sanitation; growing solid waste; soil degradation; coastal and marine resources; biodiversity loss; mineral exploitation; and declining air quality. Solutions exist for all these problems, and in themselves offer new economic opportunities. They have been tried and tested elsewhere and increasingly in South Africa itself. What is missing is the policy commitment to substantive sustainability across all spheres of government.

Will the NFSD trigger a major rethink of the relationship between the national infrastructure programme and the development process? The answer is uncertain given that current (largely unsustainable) methods for designing, producing and consuming the built environment are rooted in massive, highly sophisticated and complex capital markets, legal structures, and capitalist ownership regimes that have very little interest in changing the way they design, finance, build and operate our towns and cities. Standardised mass production of an unsustainable built environment works only for those people who make their profits from this business. Sustainable resource use challenges this hegemonic hold on our urban systems and provides spaces for citizens to have a role in imagining and building their own neighbourhoods. The public sector leadership and governance policy thrust in the new national LED framework (RSA, 2006b) provides an important 'hook' on which to anchor the sustainability agenda.

The NFSD could stimulate and encourage Local Government to pursue new local approaches that have already tentatively begun to emerge. The Development Bank of Southern Africa (DBSA), for example, has led the way by setting up what it calls the "sustainable communities" programme. Six pilots have been identified across the country and the relevant Local Governments have approved the project plans. All six are serious developmental challenges, combining extensive material and social poverty, crippling governance weaknesses, inadequate economic bases and severe infrastructure and service backlogs. Given the central role that the DBSA has played in infrastructure finance, this new approach backed by substantial expertise and funding will chart the way ahead via practice.

There are other examples. Port Elizabeth has issued a tender for the supply of renewable energy from a range of sources, offering investors/suppliers a contract to purchase the energy produced which can then be used to raise the capital required to build the infrastructure. Cape Town has already signed a purchase agreement with a privately owned and built wind farm. Many Municipalities are experimenting: Johannesburg has supported the EcoCity project in Midrand, Ekhureleni is looking at methane reclamation at its landfills, and urban agriculture and organic farming projects are emerging in various metropolitan and small town areas. For a comprehensive review of some of these initiatives see Christer (2004).

Several initiatives are underway in the Western Cape, all motivated by a resource use perspective including the Lynedoch EcoVillage Development which is managed by a Section 21 Company; the re-development of the Oude Molen site in Pinelands led by the Western Cape Provincial Government; the joint venture between Investec, various NGOs and funders at the so-called Old Cement Factory site in Philippi; the Sustainable Grabouw initiative jointly developed by the Theewaterskloof Municipality and the DBSA; the *Reinventing Stellenbosch* strategy which is a joint venture between Stellenbosch Municipality and Stellenbosch University; and the Energy Efficiency Initiative set up by the Cape Town Partnership to significantly improve the energy efficiency of the Cape Town CBD.

Conclusion

Local Governments will in one way or another experience the direct or indirect consequences of unsustainable development. These can have non-local causes such as climate change and oil price rises, or they can be localised as the costs of waste, congestion, pollution, soil degradation and inefficient resource use eat into fiscal resources that should be used to address poverty. Unfortunately, Local Governments operate within a regulatory framework that reinforces the dualistic 'development-plus-impact assessment' paradigm. This can prevent them from seeing new opportunities as developmental interventions come up against the long-term impact of previously unrecognised ecological thresholds. The complexity of the challenge is further amplified by the existence of powerful entrenched interests in the construction industry, the large materials producers, major banks and mainstream design professions who replicate unsustainable urban forms and buildings.

Local Governments must learn to navigate the politics of sustainability with both audacity and care. *Sustainable Local Economic Development* (SLED) requires a profound transformation of our understanding of development.

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