

The impact of gated communities on urban sustainability: A difference of opinion or a matter for concern?

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Abstract

An increasing number of planning and development policies promote the achievement of urban sustainability through a specific interpretation of sustainable development. This paper questions whether the dominant interpretation of sustainable development can adequately address the impact of specific development choices within the city on the sustainability of the urban system in all its complexity. The phenomenon of gated communities is used to explore this argument.

DIE IMPAK VAN GESLOTE WOONBUURTE OP STEDELIKE VOLHOUBAARHEID: 'N OPINIE VERSKIL OF 'N BEKOMMERNIS?

'n Toenemende aantal beplannings- en ontwikkelings beleidsdokumente bevorder stedelike volhoubaarheid deur 'n spesifieke interpretasie van volhoubare ontwikkeling. Hierdie artikel bevraagteken of die dominante interpretasie van die konsep 'volhoubare ontwikkeling' voldoende is om die impak van spesifieke ontwikkelingskeuses in die stad in al sy kompleksiteit aan te spreek. Die voorbeeld van geslote woonbuurte word gebruik om die argument te ondersoek.

TSHUSUMETSO YA DITJHABA TSE KWALETSWENG HODIMA BOTSITSO BA DITOROPO: HO FAPANA HA MAIKUTLO KAPA TABA E BAKANG NGONGOREHO?

Palo e eketsehileng ya maano a ntshetsopele e kgothaletsa ho fihlella botsitso ba metse ya ditoropo ka qapodiso e ikgethileng ya ntshetsopele e tsetsitseng, mme kgatso ena e lekodisa hore na e be qapodiso e kgolo ya ntshetsopele e tsetsitseng e ka arabela ka botlalo tshusumetso ya mofuta e itseng ya ntshetsopele hodima motsetoropo mabapi le botsitso ba mokgwa wa motsetoropo re akaretsa dikarolo tsohle tsa ona. Mohlala wa metse e kwalletsweng o sebedisetswa ho otlolla ngangisano ena.

1. INTRODUCTION

South Africa is bound by a number of international agreements (e.g. the *Millennium Development Goals*, the *Johannesburg Plan of Implementation* and the *Habitat Agenda*), as well as its *Constitution* and numerous national laws and policy documents, to promote sustainable development and the development of sustainable human settlements. However, there are a number of concerns about how this commitment is interpreted in practice, the most serious of these being an interpretation of sustainable development that deviates considerably from the original intentions of the concept. This interpretation underpins most of the key planning instruments of the country, including *Accelerated and Shared Growth Initiative for South Africa (ASGI-SA)*, the *White Paper on Spatial Planning and Land-use Management (2001)*, the *National Spatial Development Perspective*, the *Housing Atlas* and the *Comprehensive Plan for the Development of Sustainable Human Settlements (Breaking New Ground)*. The purpose of this article is not to interrogate these instruments (that is the subject of a article on its own), but rather to question whether this dominant interpretation of sustainable development and its relationship to urban sustainability can adequately address the impact of specific development choices within the city on the sustainability of the urban system in all its complexity.

To answer this question, the authors investigate the possible impact of the phenomenon of gated communities as an example of a specific urban development pathway that currently plays a significant role in the transformation of South African cities, yet is rarely considered within the broader urban sustainability debate.

Using existing research carried out by the CSIR in the past few years (including Landman 2003; 2004; 2005), the

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article focuses specifically on two types of gated communities, namely enclosed neighbourhoods and security/lifestyle estates (henceforth described as security estates), but excludes secure townhouse complexes and commercial/retail complexes. After a brief background on gated communities as they manifest in South Africa, the paper makes a detour through basic sustainability theory to explain the assertion of a misinterpretation of sustainable development, before it uses the so-called 'Five Capitals' model to investigate the impact of gated communities on the sustainability of the larger urban system.

2. GATED COMMUNITIES AS AN AGENT OF URBAN TRANSFORMATION

During the past few years, gated communities (in all their different manifestations) have become a common feature of the South African urban landscape. In terms of new residential development, the dominance of gated communities is only rivalled by the stand-alone subsidy housing provided by the Department of Housing. Together these two housing typologies are shaping the nature of our future cities, but while there is a growing body of work on the impact of subsidy housing on urban sustainability (including Bannister & Beyers, 2002; Beyers, 2002; Irurah, *et al.*, 2002; Napier, 2002), the impact of the rapid proliferation of gated communities on urban sustainability is rarely challenged. A number of writers have started to highlight the impacts of gated communities on some of the aspects of sustainability, such as spatial integration and accessibility (Lemanski, 2004; Landman, 2004), social cohesion (Hook & Vrodljak, 2002; Ballard, 2003; Durrington, 2005; Dursuweit & Wafer, 2005; Lemanski, 2006) and urban management (Harrison & Mabin, 2006), but there has been very little systemic analysis of their broader impact on urban sustainability. This, it is proposed, is due partly to underestimating the scale of the phenomenon, partly to the fact that impact assessments focus on individual rather than cumulative impact, and partly to an assumption that these communities actually support sustainable development.

2.1 The scale of the problem

The number of gated communities in South Africa has increased significantly since the late 1990s. They occur in various forms across the country and contribute to a significant transformation of the urban landscape. The most recent survey, conducted by the CSIR in 2002³ indicated the presence of one or more types of gated community in 35% of those municipalities that responded,⁴ with high numbers of enclosed neighbourhoods in especially the three metropolitan municipalities in Gauteng and high numbers of security estates in coastal areas (including Plettenberg Bay and Mosselbay) and areas with major natural amenities, e.g. Hartebeespoort Dam (Landman, 2003).

The Cities of Johannesburg and Tshwane have the highest number of enclosed neighbourhoods in the country and very high numbers of security estates, compared to other larger cities. The City of Johannesburg indicated that there were 49 legal neighbourhood closures, with a further 37 that had expired since approval. In addition, there were an estimated 188 illegal closures and 265 pending applications. The City of Tshwane had 75 formal applications from neighbourhoods to close off their areas. In addition, 35 more applications have been approved (Landman, 2003). These figures exclude the large number of security estates in these areas. The scale, and therefore the impact of the phenomenon, is consequently larger than commonly perceived.

2.2 Policy responses to gated communities

A review of the public debate shows that denial of the possible problems and ill-considered justification for the phenomenon are common positions, in spite of arguments to the contrary. Given that the potential future impact of such a large demand and manifestation of gated communities on the urban system has not been adequately studied yet, and the studies that have been completed highlighted a number of negative impacts, the seeming reluctance of many government sectors or spheres to respond to the phenomenon is worrying. For

example, there is currently no national policy or guideline document on gated communities; neither do any of the leading planning and development policies make reference to these types of development. Only one province (Gauteng) makes provision for the establishment of road closures, while four cities (Johannesburg, Tshwane, eThekweni and Polokwane) have released policies at the time of writing. However, due to a lack of provincial and national guidance, policies on gated communities are generally developed in a very ad hoc manner and often do not relate to the municipal *Integrated Development Plans* (IDPs) or provincial and national planning and development policies. Most policies also do not mention sustainable development or urban sustainability and those who do, refer more to the economic viability of the municipality.

While the significant impact of the different types of gated communities on the transformation of the urban landscape is gradually becoming acknowledged by some writers (including Lipman & Harris, 1999; Bremner, 1999; Vrodljak, 2002; Beal, Crankshaw & Parnell, 2002; Durrington, 2005; Lemanski, 2004, 2006; Harrison & Mabin, 2006), there is a general assumption that gated communities is not a factor that influences urban sustainability. The 2004 *State of the Cities Report* (Gotz *et al.*, 2004) released by the South African Cities Network (SACN) provides a clear indication of the importance accorded to gated communities as a factor in urban sustainability — nowhere in the 200-odd page report is there any reference to gated communities, enclosed neighbourhoods or security villages and estates, despite the report's two extensive chapters on inclusivity and sustainability. The 2006 SACN Report makes only a brief and very non-committal mention of the phenomenon's impact on urban sustainability. The SACN is not alone in discounting the impact of gated communities on urban sustainability, as is evidenced by the slow regulatory response at all three spheres of government to the phenomenon and little reference to gated communities in government speeches on sustainable development and urban development since 2002.

³ Since then, the numbers have increased in many municipalities.

⁴ The response rate was 50% (117 of the 237 local and metropolitan municipalities responded).

2.3 Gated communities as a sustainable development response

There are many macro- and micro drivers influencing the proliferation of different types of gated communities in South Africa (see Landman, 2005 for a detailed discussion). However, in summary it is valid to conclude that gated communities are all about a search for security at various levels and dimensions. The most prominent drivers include:

- Personal or physical security (safety from bodily harm and loss of personal property);
- Financial security (safety from speculation and external economic fluctuations);
- Resource security (safety from institutional inefficiency or scarcity of resources);
- Socio-cultural security (safety from bad influences, disagreeable social norms and unaccepted cultural influences);
- Lifestyle security (access to a specific way of life in a private and protected environment).

But how does a search for greater security relate to urban sustainability? Section 91 of the *Habitat Agenda* includes the provision of safety and security as a sustainable development objective. Du Plessis (2000) provides a lengthy exposition of the links between the requirements for safer communities and those for more sustainable communities. Chief amongst these are the needs for personal safety and the creation of social cohesion. These are often also the justifications provided by proponents of gated communities. Thus it becomes possible for decision-makers to assume that gated communities contribute to sustainable human settlements. However, this is a dangerous assumption, as it does not take the bigger urban picture into account, nor does it consider the impact of a proliferation of gated communities on the well-being and sustainability of the urban system.

It can be argued that the main reason why planners, decision-makers and

the public do not make the connection between the goal of sustainable human settlements and the possible impacts of gated communities on reaching this goal, is confusion around the concept of sustainable development, what it means, and what it is meant to achieve. This confusion is the result both of the co-option of 'sustainable development' by the larger development complex, and of conflicting worldviews. In order to illustrate the impact of gated communities on urban sustainability, it is necessary to make a detour into sustainable development theory.

3. SUSTAINABLE DEVELOPMENT

While many planners and decision-makers may be familiar with the jargon built around the so-called three pillars of society, economy and environment, few people realise that the concept of 'sustainable development' is more than just the latest flavour in development-speak, replacing previous phrases such as 'equitable development', 'human-centred development', 'endogenous development' and 'integrated development'. Instead, it is shorthand for a relationship between humans and their social and biophysical environment that is fundamentally different from the exploitative and adversarial relationship that has driven recent human development efforts.

3.1 The starting point

The cognitive framework of what was eventually to become known as sustainable development, was captured for the first time in the *Cocoyoc Declaration* (UNEP/UNCTAD, 1974) which highlighted the fact that not only had it been "impossible to meet the 'inner limits' of satisfying fundamental human needs since the establishment of the United Nations, but that environmental degradation and the rising pressure on resources raise the question whether the 'outer limits' of the planet's physical integrity may not be at risk" (UNEP/UNCTAD, 1974: 1). This seven-page document contained the fundamental ideas around which sustainable development would be

constructed in the years to come. These are:

- Meeting basic human needs within environmental limits;
- through limiting impact and consumption;
- in a co-operative world of networked settlements;
- in partnership with nature; and
- in solidarity with future generations (UNEP/UNCTAD, 1974: 5).

Note that the challenge is not to be able to continue the development project kick-started by Harry S. Truman in 1949,⁵ but to 'develop' in an altogether new way, based on a fundamentally different relationship between humans (of this and future generations), and humans and their biophysical environment. This would imply far-reaching changes in the dominant development model — the 'how' of development — and the systems that guide development (Du Plessis, 2005). Increasingly, commentators (e.g. Schumacher, 1974; Naess, 1995; Sachs, 1995; Devereux, 1996; Capra, 1996; 2002; Bossel, 1998; AtKisson, 1999; Kumar, 2002; Swilling, 2004) are also suggesting that for humanity to move into a positive curve towards sustainability, society needs to change the paradigm within which it operates.

3.2 Sustained or sustainable — a difference of opinion or a matter of concern?

While there is general consensus that sustainable development is about restructuring the relationship between humans and their needs, and the social and physical (natural and man-made) environment within which these needs have to be met, there is considerable divergence of opinion regarding which approaches, priorities and drivers should take precedence (see Marshall & Toffel, 2005 for an extended discussion). At the root of most of these differences of opinion lies the debate about which is most important: the environment or human needs (including such needs as maximising shareholder value and achiev-

⁵ In 1949, President Harry S. Truman of the United States, in his Inaugural Address, launched the 'age of development' with the following statement: "We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas." With this, he not only divided the world into Developed and Underdeveloped (later Developing) countries, but also launched an international programme of 'development' that has become the dominant paradigm in North-South relations for the past fifty years.

ing a high standard of living) (Du Plessis, 2005). This dualistic tension can be found in the debates around weak and strong sustainability (Turner & Pearce, 1993), Brown and Green Agendas (McGranahan & Satterthwaite, 2000; IIED, 2001), Shallow versus Deep Ecology (Naess, 1995), the Brundtland Commission's tensions of human needs versus environmental limits, and current versus future generations (WCED, 1987), and in the philosophical tensions between the current expansionist/ mechanistic worldview and the new 'ecological' worldview discussed below (see Capra, 1996, and Rees, 1999 for an in-depth comparison between these two worldviews, and Swilling, 2004 for an African perspective on the debate). These debates culminated at the World Summit on Sustainable Development (WSSD), where a fundamental ideological split occurred within the international sustainable development discourse. Going in one direction are those who are of the opinion that sustainable development requires a change in development praxis based on a shift in paradigm (e.g. Schumacher, 1974; Naess, 1995; Sachs, 1995; Girardet, 1996; Bossel, 1998; AtKisson, 1999; Hawken, *et al.*, 1999; Rees, 1999; Capra, 1996; 2002; Kumar, 2002; McDonough & Braungart, 2002). This desired new paradigm is to be based on two major shifts in thinking:

- from reductionist thinking to relational, whole systems thinking; and
- from Man as separate from and in competition with nature, to Man as part of and co-evolving with nature (Du Plessis, 2006).

What this means, is that humans cannot divorce the health of their social and economic systems from the health of the biosphere. Sustainable development is therefore not about resolving (or balancing) the either/or tensions between humans and their environment, but about going beyond the dualities and finding ways of working with nature to restore and maintain ecosystem health, and of communities working together to restore and maintain a healthy social fabric (Du Plessis, 2005).

Going in another direction are those who favour development models rooted in the uncritical acceptance of the dominant worldview based on a deterministic, mechanistic understanding of nature (as described by Capra, 1996: 5; Rees, 1999: 24-26) and guided by "progressive, secular materialism and the institutions associated with that worldview" (Worster, 1995: 425) which regards the natural environment as merely a source of resources to be exploited for human gain.

This second group (the UN, the World Bank, most members of the World Business Council for Sustainable Development, almost all governments) currently dominates the international sustainable development agenda. It sees the goal of sustainable development as ensuring that current modes of development (based on free-market led, consumption-fed economic growth) can be sustained, and that developing countries are placed 'on a path of sustainable growth and development' (paragraph 67, NEPAD) that will place them on par with the developed world. The result, as evidenced by the *UN Millennium Development Goals*, the WSSD *Johannesburg Plan of Implementation*, and, in Africa, the *New Partnership for Africa's Development*, is delivery wish lists presented as sustainable development plans and strategies, underpinned by powerful commercial and political interests that convinced the world that what 'sustainable development' needed was more development.

This group has taken the signifier for a very complex and value-laden meta-concept 'sustainable development' and turned the words themselves into the signified, thus making it possible to say: 'sustainable development means development that can be sustained'. The result is that sustainable development has been co-opted by the global development programme as predicted by Sachs (1995: 29) and Satterthwaite (1999: 101-104), becoming nothing more than the standard developmental mantra of the past 50-odd years, with a few environmental components and caveats tacked on.

In this debate South Africa stands firmly in the corner of 'sustained development'. So firmly in fact, that it was the regular presidential use of the term 'sus-

tained development' that provided the clue to the nature of the split within the sustainability debate, and explained the confusion as to the interpretation of sustainable development within all three spheres of government and in the broader debate on sustainable development in South Africa.

If there were any doubts about South Africa's position, the cards were put on the table in a speech given by then Minister of Local and Provincial Government, Sydney Mufamadi, at the Local Government International Preparatory Committee Meeting for the WSSD. He said: "Environmental sustainability is a core component of our development strategy. Fundamental to this is the provision of land and security of tenure, water resources, health care and disaster management, and, in denser urban settlements, sanitation, refuse removal and storm water drainage" (Mufamadi, 2002). However, what the Minister listed as environmental sustainability objectives are in fact objectives related to meeting human needs. In this he is in good company. Number seven of the *UN Millennium Development Goals* claims to deal with environmental sustainability. However, on the official UN Millennium Goals website, two of the three targets identified under this goal relate to human needs — providing clean drinking water and improving the lives of 100 million slum dwellers.⁶ These are laudable human well-being goals, but they do not address larger global environmental crises such as climate change and the reduced ability of the ecosystem to provide vital services to humanity and other species (as described by the Millennium Ecosystem Assessment, 2005).

More recently, remarks by the Minister of Housing, Lindiwe Sisulu, as well as President Mbeki, regarding the restraints placed on development by Environmental Impact Assessments, further point to both a weak understanding of the fundamentals of sustainable development and an emphasis on 'sustained development'. Fakir (2004: 113) provides a (partial) explanation for this focus: "[For me,] joining the environmental movement was more about grappling with development challenges that we have inherited from apartheid ... The

⁶ In fairness, the Millennium Declaration from which the targets were taken, placed them in their appropriate place: under development and poverty eradication. Their migration to the goal of environmental sustainability was probably to make up for the lack of clear, quantitative environmental targets in the Millennium Declaration.

environmental field was a mere spectrum by which to look at development issues in South Africa; it was perhaps never an end, but an entry into what it means to engage issues of development, and secure rights of access and ownership over resources so as to expand the realm of opportunity."

Thus we have two groups using the same vocabulary, but each meaning something very different. The one group (e.g. UNDP, 2003: 2) asks: how do we sustain development? The other group asks: how do we develop to sustain the 'the integrity of combined human and natural systems as they interact and condition one another over time' (Raskin, *et al.*, 1998: 2)? The differences between these two groups are not merely a matter of opinion.

The proponents of sustained development aim (on the grounds of improving human well-being) to keep humanity on a path that may lead to a situation where the biosphere will not be able to meet human development goals and may, in fact, be reducing our ability to maintain current levels of human development. As Rees (1999: 40-41) pointed out, "The growth ethic has finally engaged biophysical reality. Even the factor-10 economy [reducing resource use by a factor of 10], while clinging to the technological fix, is a singular concession to the ecological imperative now confronting humanity." It is therefore of great concern that 'sustained development' has replaced 'sustainable development' as the goal underlying development policy in South Africa.

It should be understood though that in itself development is not bad, and some sustainability experts (e.g. Carley & Christie, 1992; Capra, 2002) suggest that we will need more and faster development to achieve the societal transformation necessary for sustainability. Rather it is the definition of and approach to development that is at fault. However, it will be some time until the kind of paradigm shift can be accomplished that is necessary to achieve a transition to a model of development that supports a sustainable global social-ecological system. In the meantime, an alternative has to be found that will buy time to develop the kind of thinking and technologies that underpin such a new way of development.

3.3 The Capitals Model

Hovering between these two camps and providing such an interim approach are the proponents of 'sustainable capitalism.' The Forum for the Future (Wilsdon, 1999: 9) rationalises this approach as follows: "...perhaps the most helpful way of understanding sustainability is in terms of the economic concepts of 'capital' and 'income.'"

Sustainable capitalism is founded on the concept of natural capital as an addition to (or alternatively, the foundation of) human-made (including financial) capital. Pearce, *et al.* (1989) added to this physical capital (machinery and infrastructure) and intellectual capital (knowledge and technology), and the idea that sustainable development means that each generation should pass on at least as much capital as it inherited. Paul Ekins (Ekins *et al.*, 1992) proposed a theory of four capitals, which was further expanded by the World Bank (Serageldin & Steer, 1994), Hawken, *et al.* (1999) and Forum for the Future (Wilsdon, 1999) into the current Five Capitals model described below (based on Wilsdon, 1999; The Sigma Project, 2003; Parkin, 2005).

- Natural capital (the environment) — This refers to the natural resources (energy and matter), as well as the services provided by the ecosystem to cities and communities to produce their products and deliver their services. These services include sinks that absorb, neutralise or recycle wastes; renewable resources (e.g. timber, grain, fish, water); non-renewable resources (for example fossil fuels); and processes or life-supporting systems such as climate regulation and the carbon cycle, which enable life to continue in a balanced and healthy way.
- Manufactured or physical capital (fixed assets) — This refers to material goods and infrastructure owned, leased or controlled by different groups or institutions in a city that contribute to production or service provision, but do not become embodied in its output. Examples include: tools, technology, machines, buildings, and all forms of infrastructure.
- Human capital (people) — This concept incorporates the health, knowledge, skills, intellectual outputs, motivation and capacity for

relationships of the individual. In a city it includes the elements needed for people to engage in productive work and the creation of wealth, thereby creating opportunities for a better quality of life. Human capital also includes personal value systems and qualities such as dignity, joy, passion, and empathy.

- Social capital (social relationships and structures) — This refers to any value added to the activities and economic outputs of the city or neighbourhood by human relationships, partnerships and co-operation. Social capital includes networks, communication channels, families, communities, businesses, trade unions, schools and voluntary organisations (NGOs, CBOs, *etc.*), as well as cultural and social norms, mores and trust.
- Financial capital (profit & loss, sales, shares, cash) — This concept reflects the productive power and value of the other four types of capital and covers those assets of a city (or other form of organisation) that exist in a form of currency that can be owned or traded, including shares, bonds and banknotes

Although the idea of trading in capitals is a useful concept, it should be noted that there is a lively global debate on the interchangeability/substitutability and interdependences between different forms of capital. Those in the 'weak sustainability' camp see all types of capital as being fully interchangeable, whilst those in the 'strong sustainability' camp identify certain environmental functions as non-tradable. As happened to the 'three pillars' model, there is also much contention about what is included under which capital. While some authors group human and social capital together as human capital (including Hawken, *et al.* 1999), others differentiate between the two (including Rees, 1999; Wilsdon, 1999). However, all five capitals are necessary to achieve sustainable development and the economy needs all five to function properly. In addition, it is critical to recognise the interdependence of the production and use of human-made capital and the maintenance and supply of natural capital (Hawken, *et al.*, 1999: 3-4). As Parkin (2005: 31) points out: "There are, in reality, only two sources of wealth and well-being. That

which flows from the resources and services provided by the Earth (natural capital), and that which flows from our own hands, brains and spirits (human capital). Everything else derives from these two primary sources."

The different types of capital are therefore not equal, with some nested within others in what Koestler (1975) refers to as a natural hierarchy or 'holarchy', where each level includes and transcends the previous. This relationship is illustrated by Figure 1.

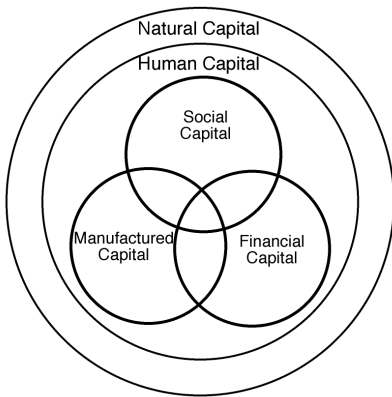


Figure 1: Five capitals

While the Five Capitals model is not a perfect model to explain or analyse sustainable development, it is very useful to start illustrating how the different aspects of sustainability influences the sustainability of the whole. The main danger is that the Five Capitals model sees both nature and humans as economic commodities to be traded at the stock exchange of global development (Du Plessis, 2004). However, despite its shortcomings, the Five Capitals model is useful to determine the sustainability of certain development initiatives. The next section therefore uses this model to explain why gated communities should be considered a factor in urban sustainability.

4. APPLYING THE CAPITALS MODEL TO CLARIFY THE ROLE OF GATED COMMUNITIES AS A FACTOR IN URBAN SUSTAINABILITY

To briefly recap, the capitals model provides a framework for development based on maintaining and, where possible, increasing stocks of the five different capital asset types (Wilsdon, 1999). In this model, sustainability will be achieved when we can

live off the income without depleting the capital, thus leaving future generations an inheritance equal to or greater than that which we enjoy. A weak sustainability approach has no theoretical limits to substituting one form of capital for another (e.g. biodiversity for economic wealth). A strong sustainability approach maintains that there are no substitutes for some of the essential services provided by the systems that constitute natural capital (e.g. climate regulation). However, as Parkin (2005) points out, maintaining the capital stock is only one part of the equation. It is also necessary to maintain the flows of benefit (some of which are described in Table 1) supported by the stock. In addition, the internationally agreed principles of sustainable development captured in the *Agenda 21* and *Habitat Agenda*, also requires that there be a measure of equitability in how these capital assets are distributed both inter and intra-generationally.

Table 1: Five capitals model

CAPITAL	STOCK	FLOW
NATURAL	land, sea, air, rivers, ecological systems	energy, food, water, climate, waste disposal
MANUFACTURED	tools, infrastructure, buildings,	places to live, work, play; access to them
HUMAN	health, knowledge, motivation, spiritual ease	energy, work, creativity, love, happiness
SOCIAL	governance systems, communities, families	security, justice, social inclusion
FINANCIAL	money, stocks, bonds	means of valuing, owning, exchanging other four

Source: adapt from Parkin, 2005

When discussing gated communities in the context of the capitals model, it is thus necessary to look at the impact of the gating phenomenon on capital stocks and flows within the gates, as well as at the cumulative impact of gated communities on the capital stocks and flows of the larger urban system. The two different types of gated communities discussed — security/lifestyle estates and enclosed neighbourhoods — also have different implications for the different types of capital. The following analysis is based predominantly on CSIR research carried out between 1999 and 2005, but is also supported by additional research on gated communities in South Africa, where indicated. Space does not permit a comprehensive analysis, and the examples provided are merely to illustrate that the different types of gated communities do have an impact on urban sustainability.

4.1 Natural Capital

Natural capital is influenced in a number of ways by the development of gated communities. Inside the gates of security estates, the stocks of natural capital such as indigenous flora and fauna and water courses are often protected in order to protect the lifestyle benefit that is a major selling point of these estates. Some security estates offer well developed and maintained natural spaces, while the majority offer their residents access to clean air and water and open green space.

One of the biggest impacts of security estates on natural capital stocks is on both the quantity and quality of the water supply. The main problem relates to the provision of landscaped open space and lifestyle amenities, especially artificial lakes and golf courses. Where artificial lakes are fed by storm water and used as reservoirs

to provide water for the gardens, they can be seen as accumulating natural capital stocks. However, if fed by municipal water supplies or groundwater (bore-holes etc.), they reduce natural capital stocks both outside the gates (municipal water supply) and within the gates (groundwater). Golf courses, by virtue of their high water and land demands and agro-chemical use, have both a quantitative and qualitative negative impact on stocks of natural capital. For example, a golf course consumes between one million and two million litres of (often municipal) water per day (Smetherham, 2004).

While the excessive use of water inside security estates is of concern, the main concern is the cumulative impact of these estates on the local and national water supply in an already water-stressed country. An additional concern is the equitable distribution of

such a vital and scarce resource as water between those within the gates and those outside. In contrast to the consumption of golf courses, many poor households in South Africa have to survive on the equivalent of less than one bathtub of water per day.

Another impact of both security estates and enclosed neighbourhoods on natural capital is on air quality as a result of increased air pollution. 'Open' roads outside the gates cannot cope with the additional burden of traffic displacement, resulting in longer journeys and traffic jams and thus in higher levels of pollution. The removal of trees (and with them their air-cleaning services) to widen roads as a traffic relief measure, further increases the levels of pollution and also changes the urban micro-climate.

4.2 Physical or manufactured capital

Physical capital is both the infrastructure stocks (roads, buildings, municipal infrastructure and facilities) within the city, and the services provided by these stocks. Security estates in general provide high-quality physical capital and exposure to stimulating, well-developed and maintained physical environments within the gates. As such, they contribute positively to physical capital stocks both internally and in the larger urban system.

The situation is somewhat different for enclosed neighbourhoods. While the condition of the infrastructure within enclosed neighbourhoods does differ, the existing physical capital is often reduced in quality and quantity both inside and outside the gates. In some enclosed neighbourhoods, roads have deteriorated due to a lack of sufficient traffic using these roads, while roads outside enclosed neighbourhoods often deteriorate due to over-use. At the public hearings, the City of Johannesburg found that closure of certain areas also becomes problematic for the delivery of services, such as water, electricity, fixed line telephony, and refuse removal. As access control often prevents municipal service teams from entering these neighbourhoods, the subsequent lack of maintenance means that sidewalks and parks have also deteriorated in a number of cases. Not only can service vehicles not gain access, but the movement of large vehicles is also restricted as closures of previous

through-routes often did not consider providing space where these vehicles can turn around.

Both types of gated communities also reduce the physical capital available to those outside the fences. A range of physical elements such as walls, fences, gates and booms restrict/prohibit public access to well developed public or privatised communal spaces such as parks, libraries, schools and recreation space. In addition, reducing the number of entry and exit points into or out of a neighbourhood or estate has a major impact on traffic and movement patterns. This reduction of physical capital available to the urban system is especially visible where there is a large concentration of enclosed neighbourhoods in a sub-metropolitan area. Vehicles are displaced and forced to make use of only the main arterials, the only available through-routes. As a result, the

4.3 Human capital

The main contribution to human capital made by gated communities lies in the area of health and spiritual ease (which includes concepts such as dignity, identity, leisure and creativity, (The Sigma Project, 2003)). Since this tends (for the moment) to be a phenomenon found mainly in middle class and wealthy areas, diseases of poverty, hygiene and overcrowding are not commonly found in these areas to begin with. Relatively safe and well-developed urban spaces and facilities with an increased sense of security, and improved community relations/social cohesion, means that both types of gated communities generally offer a healthy and less stressful environment to residents inside the walls.

At the same time, the lack of access to these communities presents a

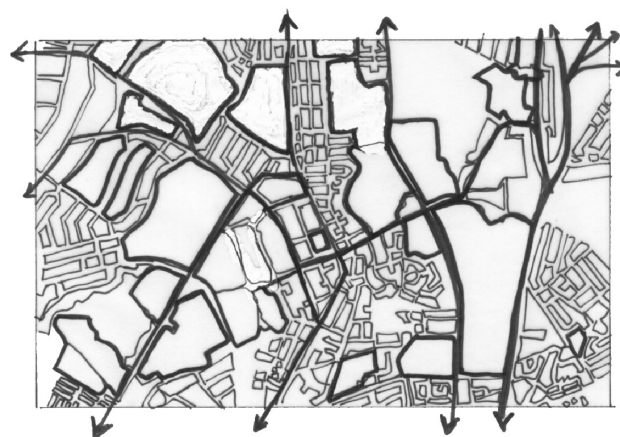


Figure 2: A number of enclosed neighbourhoods in northern Johannesburg have completely altered the existing urban form (above), creating a new urban form and road network (below), based on a super-block structure

urban morphology is transformed to a series of super-blocks connected by rapid transit routes, which in turns contributes to spatial fragmentation and neighbourhood separation.

health and safety risk to both the inhabitants and those outside the gates as services such as ambulances and fire engines cannot follow the shortest routes, or waste time finding

alternate routes when public access routes have been closed. Anecdotal evidence reported at the Johannesburg public hearings points to potential life-threatening delays in travel time to reach required destinations. As an example, one resident, Ms Lareson, reported at the hearings that an emergency case in Cyrildene led to the death of the patient because the emergency vehicle driver could not find the entrance to the neighbourhood and reached the patient too late (Johannesburg, 2003). The Northview Fire Station, which gets an average of 56 call-outs per month in the summer, and double that in the winter, also stated in a local newspaper, the *North Eastern Tribune*, that: 'In areas with security booms, response times have doubled' (Johannesburg, 2003). This doubling of response time endangers not only life, but also property, and thus also has an impact on the maintenance of physical capital stocks.

4.4 Social capital

One of the main arguments in favour of gated communities is that these improve the levels of social cohesion within the community (Vrodljak, 2002; Ballard, 2003; Durrington, 2005). Large security estates and security villages operate on the basis of a club, offering club goods (infrastructure, facilities and amenities) in exchange for financial investment. The club realm (inside the gated community) offers the opportunity for the community to function and interact as a social club (through a Home Owners Association), with an appropriate constitution (strict rules and regulations) and a management board or committee. This in turn ensures accepted norms and values, creating the foundation for greater trust between neighbours. Neighbourhood activities also provide opportunities for a greater sense of community (where they support the same objectives), building channels of communication and social networks. In these ways gated communities facilitate the establishment of social capital for those residents staying inside.

However, opportunities for social interaction with the broader urban community and a collective sense of citizenship are limited, as the establishment of strong private micro-governments within the gates often leads to a retreat from the civil participation in the governance of the larger urban

system necessary for urban democracy to operate optimally. At the same time, conflict is created between insiders and outsiders.

In South Africa, recent research findings (Landman 2006) have identified several levels of conflict related to gated communities, especially enclosed neighbourhoods, including conflict between residents inside, conflict between those inside and outside (including residents from surrounding neighbourhoods and the local council) and personal inner conflict. These conflicts relate mainly to social exclusion and increased vulnerability (due to crime and traffic displacement), and the issue of equity in terms of the access to and use of public space and facilities, especially infrastructure provided and maintained with tax funds. In addition, existing research has indicated that the development of gated communities can increase the fear of crime, especially when using 'open' (non-gated) spaces. In turn, these developments contribute to a decline in public order and safe public spaces for all (see Lemanski 2004; Boisteau 2005 for detail discussion).

4.5 Financial capital

Gated communities also have an influence on financial capital. In both types of gated communities, property prices generally increase more than those outside the walls, while households are able to negotiate lower insurance premiums. The opposite is true outside the gated areas, again raising the issue of an unfair advantage to those inside gated areas and whether property taxes should be increased inside gated areas to balance out this advantage (Altini & Akindele, 2005). This may, however, be addressed with the implementation of the new *Property Rates Act* that will oblige municipalities to base their rating of properties on the value of land and improvements.

The private development of estates also reduces opportunities for cross-subsidisation of facilities (private investment in public spaces) for public use, and therefore restricts the extent to which the poor can benefit from the investment of large corporations or institutions in the development of communal spaces.

5. CONCLUSION: THE TRAGEDY OF THE COMMONS

It has to be acknowledged that the above analysis is very generalised and not based on a rigorous quantitative study. Inferences are instead drawn from a number of qualitative and anecdotal sources. However, from a theoretical perspective, it becomes evident that these two types of gated communities in general increase the capital stock for those within the gates. This often comes at the cost of reducing the capital stock and benefit flows for those on the outside. On an individual basis, the impact of gated communities on the larger urban system is not that visible. However, given the proliferation of security estates and number of neighbourhood closures, the cumulative impact on the capital stock of the city becomes considerable.

As argued by Hardin in his famous *Tragedy of the Commons* paper (1968) it is this inability to consider (and acknowledge) the threat posed by the collective impact of many individual actions, that is one of the biggest impediments to sustainable development. The commons, in the case of a city, is not just restricted to environmental services, but also to the spatial and economic resources of a city. Initiatives that aim to improve security, such as gated communities, have unintended consequences on the public spaces of the city, leading to greater traffic congestion, longer commuting times, increased air pollution and reduced opportunities for social exchange. As each individual claims the right to this improved standard of living, the well-being of the collective is gradually eroded. Because neighbourhood enclosures and the development of security estates are approved on the basis of individual applications, and in general no specific guidelines regarding private development are included in the planning process, they will continue to reduce the capital stocks of those outside the gates. Thus, even from a weak sustainability point of view, gated communities have a negative impact on the sustainability of the urban system. Given this, the impact of gated communities is a matter of real concern within South African cities.

The phenomenon of gated communities was specifically chosen not only because it illustrates the broad range

of impacts that physical development have on the urban system, but also because it shows that the main difference between 'sustained' development and 'sustainable' development rests not in the importance granted to the biophysical environment, but in understanding that the path to sustainability lies not in 'solving' certain problems (such as the eradication of slums, providing safe spaces), but in understanding that every single development decision impacts on the sustainability of the whole, and that the integrity and health of the entire system determines the sustainability of the city.

'Sustained' development, with its growth imperative and 'command and control' developmental responses to specific issues, fails to consider these complex interactions and the longer-term and cumulative impact of specific development trajectories. The result is often an erosion of the total capital stock of a city and a vicious circle of problem-solving as new plans have to be developed to address the problems created by the previous cycle of planning and its unintended consequences. This is not sustainable by any definition of the word.

The alternative offered by 'sustainable' development sees cities as complex, adaptive social-ecological systems where the compound and cumulative impact of many development decisions have to be taken into account. Only in this way can the full extent of certain development initiatives, such as gated communities and their impact and implications, be assessed. This shift in approach — based on a different worldview in which humans and nature are interdependent and interconnected, development is a product of co-evolution and co-creation, and sustainability is defined by the resilience, transformability and adaptability of the urban social-ecological system, rather than progress towards set development goals — offers a far more certain path towards urban sustainability.

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