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a case of Gaborone, Botswana

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MANAGING THE DEVELOPMENT OF A FAST GROWING CITY: A CASE OF GABORONE, BOTSWANA

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ABSTRACT

Gaborone is one of the fastest growing cities in Sub-Saharan Africa. Today, the urban agglomeration of the capital of Botswana has only about a quarter million inhabitants, but will become a half-million city in only two decades. Thus, Gaborone is facing the challenge of the typical problems of mega-cities, such as environmental degradation, urban sprawl.

The research project DIMSUD is dedicated to identify ways toward sustainable urban development. Starting from an analysis of the challenges for in Gaborone, tasks for urban planning and opportunities for sustainable urban development are shown.

INTRODUCTION

The global phenomenon of rapid urbanisation is the main challenge to planning in the beginning of the 21st century. Whereas today nearly half of the world’s population is living in urban settlements, this ratio will increase to more than 70 % by the year 2025. The urbanisation seriously escalated and is concentrated mostly in economical and administrative centres. The number of so-called ‘million cities’ and ‘mega-cities’ is growing being the focal points of con-
tinuous urban expansion. In 2015 there will be more than 300 cities with over one million inhabitants worldwide; most of them in developing countries. Between 1980 and 2000, Lagos, Dhaka, Tianjin, Hyderabad and Lahore, among others, joined the list of the 30 largest cities in the world, and by 2010, Lagos is projected to become the third largest city in the world, after Tokyo and Mumbai (Moor & Warah 2001).

Africa is the continent with the lowest rate of urban population (34 %; which is less than half the value of Europe, Oceania and the Americas). However, Africa experiences the fastest growth rate of population (2.7 % from 1995-2000) and the fastest growth rate of urban population (4.3 % from 1995-2000). As a result, in 2025 over 70 % of the African population will live in cities (Toepfer 2002). Consequences of this tremendous growth of African cities will be unprecedented challenges and environmental problems within the cities as well as impacts on the urban-rural link.

Hall & Pfeiffer (2000: 5) figure out: ‘Some of the biggest problems occur in relatively small cities ... above all in Africa’, in which the spatial development and urbanisation process is not completed yet. For this kind of cities early action is needed to avoid the typical environmental and social problems of million and mega cities, such as pollution of water and air, poor health conditions, unemployment, poverty and crime for example. Fast growing cities in Africa, even if they are still far from becoming million cities, must orient their planning and development management towards the predictable future (El-Shakhs 1997). By this, coming problems can be at least reduced, and opportunities for future development towards sustainability can be prepared. In this article, attention is drawn on the city of Gaborone as an example for an exploding sub-million city in sub-Saharan Africa. Other examples of sub-million cities with mega-city problems occur where the development of a country is concentrated on one central city. In general, this is the capital, which is characterised through urban poverty, poor housing quality, not existing or low quality urban and social services or through a limited access to global networking: Bamako (Mali), Ouagadougou (Burkina Faso), Mogadishu (Somalia), Cotonou (Benin) and many others (see figure 1).

Gaborone, the capital of Botswana, is one of the fastest growing urbanities in sub-Saharan Africa, if not the fastest one (Mosha 1996). It is the nation’s focussing centre, where the overwhelming part of public and private investment is made. The population of Gaborone rose from 3,600 in 1966 (end of the British protectorate) to 186'000 people in 2001. Although Gaborone is at present far from being a million city, the official population projection of Botswana points out, that it will become a half-million city in 2021 (GoB, CSO 1997). However, the aspect of HIV/AIDS has not been sufficiently considered in the population projections of 1997. UNAIDS estimates indicate that by the end of 1999, at least one in four adults in Botswana was living with HIV/AIDS (GoB,
CSO 2002), whereas the official population projection 1991-2021 is based on an adult prevalence of only 10.49% (GoB, CSO 1997). The active part of the population is most affected by HIV/AIDS: the 2001 sentinel HIV survey (NACA 2001) estimates a very high HIV prevalence of 35.6% among the group of 15-49 years in Gaborone. Nevertheless: today’s population of Gaborone will double in about 20 years. Considering that the population of the 1966 newly founded capital of Botswana increased eighty-fold in only one and a half generations, the future problems can easily be imagined.

In fact, the rapid growth of Gaborone’s population effectuates a severe stress on urban resources and will continue to do so. Mosha (1996) was very optimistic when stating that ‘in spite of its rapid growth, through careful planning and management, the development of the city [Gaborone; annot. by the authors] has been sustainable in all respects’. Obviously, many prerequisites have changed during the last years. Due to a raise of Gaborone’s population of roughly 100'000 people from 1996 to day, some purely unsustainable developments are taking place. The reasons for this will be highlighted below in this article. These challenges will be brought to light in this paper. Also, existing chances for sustainable development are indicated. The central question is, ‘whether or not the City of Gaborone can sustain itself in the future’ (Mosha 1996).

RESEARCH PROJECT ON SUSTAINABLE URBAN DEVELOPMENT

Due to its importance to global sustainability, the idea of urban sustainability is not, of course, new. For example, the Rio 1992 Earth Summit was quickly translated into Local Agenda 21 initiatives around the world. The Habitat II conference (Istanbul 1996) proclaimed the right of appropriate living space to everybody and the world conference Urban21 (Berlin 2000) showed ‘best practice’ examples of sustainable development of cities. Sustainable urban development was also treated as crosscutting theme on the Johannesburg Summit 2002.

In May 2002, the Alliance for Global Sustainability (AGS) sponsored the international, multi-disciplinary and cross-cultural project ‘Designing, implementing and measuring sustainable urban development’ (DIMSUD). DIMSUD (http://sustainability.ethz.ch) is carried out jointly by the Swiss Federal Institute of Technology (ETH), Massachusetts Institute of Technology (MIT), Chalmers University of Technology (Sweden), University of Botswana, University of the Witwatersrand (South Africa) and the Catholic University of Santiago de Chile. Another partner is the United Nations University (UNU) at Tokyo.

The DIMSUD project intends to contribute to new solutions for sustainable urban development with a particular focus on the developing world through a participatory approach combining research, urban design, and capacity build-
ing. The project focuses specifically on three cities from Africa and Latin America (Johannesburg, Gaborone and Santiago). The collaboration of research institutions over five continents expects to operationalise urban sustainability: to produce workable responses (‘best practices’) to the challenges to sustainable urban development. This is done by enabling a global overview of core problems, providing a synthesis of realisable strategies and offering both a scientific forum and an ‘urban field laboratory” for joint learning. The duration of the DIMSUD project is two years. Based on the successes of the findings, it may eventually be continued and expanded to apply its relevant lessons to cities from Asia and Pacific.

RESEARCH METHODS AND QUESTIONS

In July / August 2002, a preliminary case study for Gaborone was carried out by a mixed research team of students from ETH Zurich and University of Botswana, guided by senior researchers of those universities. Preparatory intensive literature review was followed by a joint fieldwork in Gaborone. This fieldwork was co-sponsored by the Swiss Development Co-operation (SDC). Four research themes were proposed:

- Sustainability indicators in integrated urban planning
- Challenges and opportunities for Sustainable Development in Gaborone
- Sustainable strategies (tools and mechanisms for sustainable urban development)
- Analytical tools and models for sustainable urban development

For this, different policies, planning documents on the national, Greater Gaborone Area and city level were analysed. Interviews with stakeholders and decision-makers from Botswana Ministries and the Gaborone City Council were made. First findings were discussed with officials and researchers by using questionnaires and during a mid-term workshop.

CHALLENGES FOR SUSTAINABLE URBAN DEVELOPMENT

Rural-Urban Migration

The main reason for the urbanisation wave in Botswana is the migration fluxes from rural areas to urban settlements. The percentage of people living in urban areas of Botswana rose from 9.6 % in 1971 to 18.3 % in 1981 and 45.7 % in 1991. For the 2001 public census, an urbanisation rate of 52.9 % is estimated. Further projections suppose that in 2021 the urbanisation rate in Botswana will be that of 61.2 % (GoB, CSO 1997).

The motivation of the migrants is mainly economically driven (Silitshe na 1996). Central is the expectation to find paid employment in the secondary and tertiary economic sectors. In 1994, the monthly average household income in urban areas was more than five times higher than in rural areas (GoB,
CSO 1996). Migration is also a response to push factors resulting from poor living and working conditions in rural areas and limited accesses to basic community facilities. For example, only 53 % of the rural population and 100 % of the urban population has access to potable piped water. 82 % of the urban population has access to toilet facilities, whereas only 26 % of the rural population are deserved with this (GoB, CSO 1996). Young people are chiefly attracted by the western-life style in the cities and try to escape from traditional ways of live and social controls in rural areas.

The main stream of migration is directed to Gaborone and its neighbouring settlements. In 1981, about half of Botswana’s population lived in a perimeter of 200 kilometres of Gaborone, and in 1991 in a perimeter of only 100 kilometres (Silitshena and McLeod 1998).

**Past Planning Failures: Expansion and Shortage of Land**

At the eve of independence of Botswana, a first master plan for the future capital was prepared in 1963. It was designed for an administrative function with maximum of 20’000 inhabitants by the end of its planning horizon in 1983. Essentially, the plan was characterised by a comparatively low-density form of development based on the Garden City model with generous provision of pedestrian walkways, open spaces and closely tied neighbourhood units. Equally important, the plan contained two significant features, which today would be regarded as inappropriate. Firstly, housing development was polarised with high and medium income on one side of the town and low income on the other; and secondly, the urban structure was such that it allowed little space for expansion outside of the original layout.

In addition, the plan did not take into account any possible growth from in-migrating job seekers (Mosha 1996). In reality, the population in 1983 was threefold than assumed. This underestimation of population growth brought with it a great deal of consequences, like shortages in serviced land for housing, as well as stress on the existing infrastructure and other facilities. The aerial photos of 1966 and 1998 (figures 2 and 3) show the rapid change in land use in the centre of Gaborone.

The ongoing uncontrolled leapfrog expansion led to an overspill of Gaborone to the peri-urban settlements. A first remedy to the mushrooming of Gaborone was during the 1970s when the first acquisition of surrounding private freehold farms in the North (for ex. Broadhurst farm) took place, and in the West of the railway line in order to allow further expansion of the capital.

Also the neighbouring tribal areas were and are still affected, as the satellite settlements around Gaborone have been growing at annual rates of 16% and more (Molebatsi 1996). One important result of the urban sprawl was a loss of
arable land that seriously engulfed the urban fringe villages of Tlokweng, Mogoditshane, Mmopane and Metsemothlaba. In 1994 the Greater Gaborone Structure Plan was prepared to serve the expansionary needs of urban fringe areas for a period of twenty years (1994-2014). The dominant objective of the plan and Gaborone as a dormitory settlement was to provide a framework for integrated economic, social, institutional, and physical development within the Greater Gaborone Region.

The shortage of land and the resulting pressure on the surrounding settlements led in 1980 to the creation of the Greater Gaborone Planning Area, which has a size of 97'000 ha and comprises the surrounding tribal towns of Mogoditshane, Tlokweng, Gabane (60'500 ha), several freehold farms (21'000 ha) and State land (15'500 ha). For the agglomeration of Greater Gaborone, the Greater Gaborone Development Plan (1994-2011) assumes in a medium variant (6.2 % population growth p.a.) a population of over 532,000 by 2014. This development is due to very high population growth rates, although these rates have become slower (1964-71: +25.4 % p.a.; 1971-81: 12.2 % p.a., 1981-91: 8.4 % p.a.) and are projected to decline still more (from 4.7 % in the period 2001-06 to 3.4 % in the period 2016-21; GoB, CSO 1997).

If for Gaborone the projected population growth becomes reality, some more 250,000 new residents will live there by year 2021, which is more than the population of today. By then, the Gaborone agglomeration will be a half-million city. A simple estimation shows: if the average household size of 3.5 people (value of 1996; GoB 1998) would remain static, about 71,500 new houses respectively plots would be demanded in the next 19 years. This would require an average annual production of more than 3,700 houses a year. If all of them would be low- or middle-income houses for which the average plot size is 300 m², then new residential areas of 1,100 ha had to be provided and serviced. The total area of Gaborone City has 19,096 hectares. In 1993, 26 % of this were used for residential areas and 12 % for industrial, commercial, educational, civic and community purposes. Only 4 % (735 ha) of the whole area of Gaborone were vacant. In other words: the city of Gaborone is consuming its last vacant land, and further expansion of built-up areas inside the city’s boundaries is limited.

**Low Densities of Built-Up Areas**

The 1963’s Master plan for Gaborone followed the principle of a Garden City, allowing low densities. Even with the expansion of Gaborone City, the demands for plots continued to outstrip supply. Planning could neither satisfy the high demands for plots nor could it turn the page from cost-intensive low-density, low-floor housing to low-cost high-density and multiple floor housing. One reason for this failure is that Motswana (the people of Botswana) are not used to live in multi storey buildings. As the migrants come from rural areas, where
land seems to be an ubiquity, there is no need to build technically complex and costly two- or more floor houses. This flatland culture has been shaping the development of the new quarters of Gaborone. Older residential zones for high-income groups have plot sizes of 2,500 m² and more. Mostly, vast single storey houses cover only between 100-150 m² of the plot, which gives very low ratios of sum of all floor spaces to plot area (0.4 to 0.6). Even with the revised SHHA (see below) the maximum plot size for the high-income categories is limited only to a maximum of 1000 m². On those plots, building coverage is approximately around 10-20%. The consequences are an uncurbed urban sprawl and still long waiting lists for new plots.

Social Segregation, Poor Mixture of Functions

Due to its designation to be the administrative centre of Botswana, only residential zones for government staff were planned in the decade 1965-75. The in-migrating rural population was ignored for a long time. This led to unplanned squatter settlement (for example, Old Naledi) and also to a segregation of social classes and income groups in Gaborone’s residential areas. As a result, social mix between high-income and low-income families became one of the most important strategies for urban planning in residential areas (Mosha 1996). But still, there is no culture of neighbourhood (Silitshe 1996). People are mostly oriented towards living inside the electricity-fenced walls of their plots.

Besides the social mix, the functional mix is also poor. Until the Development Control Code (see below) was enacted, the Gaborone City Master Plan did not allow mixed uses and changes of use were rigidly controlled. Figure 5 shows exemplarily the large residential, industrial and commercial areas. Residential zones in Gaborone are mainly huge mono-functional areas and do typically not comprise shopping facilities for the daily need. For the provision, long distances have to be covered to the American-style shopping malls and commercial centres that have been installed at the periphery of the city. The preferred mean of transportation are private cars. Although traffic in Gaborone is not yet perceived as a major problem, peak-time congestions are usual. The ongoing use of leaded gasoline will lead, however, to serious health problems. Public transport is non-existing. Privately run mini busses ensure the traffic needs principally for working commuters from the surrounding settlements on main roads, but there is no overall coverage for transportation. The poor conditions of roads and signalling as well as the condition of the mini busses cause high accident rates (Mosha 1996).
Environmental Problems

The unpredicted growth of Gaborone effectuates a severe stress on urban resources and leads to environmental problems in the capital and in its surrounding settlements. The most obvious problems are:
- Loss of agricultural land for residential purposes
- Falling of water tables and drying up of boreholes
- Deforestation because of fuel wood needs (mostly low-income households), that leads to severe vegetation depletion and gully erosion
- Pollution of groundwater by nitrate and bacteria from pit latrines
- Contamination of rivers and streams by sewage outflows and waste disposal
- Air pollution because of increasing traffic, firewood and litter burning, mixed with dust.
- Uncontrolled littering and solid waste deposition

The Perception of ‘Development’ and ‘Sustainable Land Use’ and the Efficiency of Planning Authorities

The faster the development of Gaborone is, the more difficult the mastering of the urban challenges becomes. Obviously, authorities are neither in terms of human resources nor in terms of problem perception ready to be confronted with the urbanisation wave. In Botswana, there is a lack of qualified and skilled engineers and planners. Hall & Pfeiffer (2000: 14) state that ‘the overwhelming problem is not the urban growth in itself, but the fact that city administrations lack the will, the competence or the resources to manage that growth’.

Another hint for sustainable development in Gaborone lies in the perception of what ‘development’ and ‘sustainability’ are. The term ‘urban development’ means in Botswana (but not only in Botswana!) firstly the expansion of the city and the allocation of new plots. ‘Development’ is among the stakeholders scarcely understood in the sense of improving the quality of existing urban structures.

This kind of understanding ‘development’ becomes clear if one looks at the historical background. In 1966, Botswana was classified among the ten poorest countries in the world. Since the 1970ies, the country has been knowing a fast economic progress due to industrial exploitation of diamond, copper and nickel. As revenues from the mining sectors are directed towards the promotion of the country’s development, Botswana was able to make a big step in its economy. The country figures today in terms of the UNDP’s Human Development Index world-wide on rank 126, respectively on rank 6 in Sub-Saharan Africa (UNDP 2002).

The ‘diamond boom’ enabled the country to invest in urban housing programmes for the migrants and other sectors of country’s economy. But there is
no proper urban tradition in Sub-Saharan Africa. Rural immigrants transfer some basic patterns of their traditionally widespread settlement form into the city.

**TASKS FOR URBAN PLANNING**

The concept of sustainable development was introduced in Botswana only in 1990 with the *National Conservation Strategy* (NCS). One basic objective of the NCS is to ensure that ‘future generations have access to capital stocks of natural resources, at least similar to those presently available’ (GoB 1990). This is a condensed definition of what is ’sustainable development’. Although the NCS is meant mainly for protected areas like national parks, game reserves and forest reserves, its sense could also be applied on urban development. One key sentence in the NCS that could also figure in an improved urban development policy or a strategy for sustainable urban development, is: ‘Achievement of sustainable development calls for comprehensive evaluation of environmental and economic implications before [sic!] major new developments are undertaken’ (GoB 1990:2).

If this exigency of 1990 would have been taken into consideration in the development of *Gaborone*, then perhaps several unsustainable development could have been avoided. But still, ‘concerns with sustainability city development are not yet prominent in local planning concerns’ (Molebatsi 1996: 133). In other words: a lot of work remains to be done. If this homework is not done by now, new development damages like unordered and resource consuming settlement patterns will occur and it will be those damages that will sustain.

In sum, the main tasks in order to cope with the challenges for urban development of *Gaborone* can be listed as follows:

- Development of a comprehensive strategy for sustainable urban development
- Need to provision of plots for the steady growing population and financing physical and social infrastructure
- Creation of higher densities by intensification of use through rezoning
- Re-development of mono-structured areas, mix of functions
- Applying the principle of social mix for better integration of different groups
- Re-development of open spaces, implementation of (existing) landscape master plans, greening, cleaning and maintenance
- Creation of a public transport system to avoid health problems
- Improving waste management by an integrated system of reduction / re-use / recycling and upgrading of old dumping sites
OPPORTUNITIES FOR SUSTAINABLE URBAN DEVELOPMENT IN GABORONE

Gaborone is an economic engine and generates a lot of income in the formal and informal sectors. It is a market place that attracts investments of local and international enterprises. Due to its educational infrastructures (for example the University of Botswana), Gaborone is a centre of know-how, research, information and communication.

In Gaborone, some ‘good governance’ policies that create opportunities for sustainable development, are already in use. They are a base for sustainable urban development, but are not sufficient. However, there is still a quest for a Gaborone City’s sustainable identity as a whole and for its constitutive parts. Notwithstanding, this identity can be created only through mutual conjunction of key city stakeholders from different sectors (private, government, para-statal, NGOs, public, etc.). Their thinking should embrace social, economic and environmental issues as one count. Concerning this, the challenge is how to achieve sustainable urban development goals not compromising the benefits of today’s and future Gaborone citizenry.

Vision for Botswana (Vision 2016): Towards Prosperity for All

Vision 2016 is multi-dimensional, encompassing the economic, as well as the social, political, cultural and spiritual aspects of the lives of Botswana. It sets out some goals for the nation for the year 2016, identifies major challenges in achieving them, and proposes a set of strategies to meet those challenges. Vision 2016 outlines Botswana’s future aspirations. It seeks to propel this country’s socio-economic and political development into that of a competitive, winning and prosperous nation. Seven strategic goals have been identified to steer Botswana towards that vision.

To implement this vision, the key national institutions, including Government, para-statals and non-governmental and voluntary organisations will have to incorporate the principles of the Vision into any plan. The goals of the vision will be the starting point for all future National Development Plans and mid term reviews. They are also meant to guide the design of future national policies and programmes. Hence all urban and rural development plans prepared by planners will be guided by this vision.

Self-Help Housing Programme

In 1974, the Government of Botswana established the Self-Help Housing Agency (SHHA), which had the task of implementing site-and-service schemes that were meant to support low-incomers to build houses on the basis of self-help and self-reliance. Plots of 450m² were provided for free to low-income
groups and plot holders were given security of tenure through certificates of right. In 1992, the self-housing programme was reviewed. The plots were no more delivered at no cost, but charged a fixed sum according to the income group of the applicant. Due to the ongoing demand for new plots, the plot size was reduced to be 200-300 m² for low-incomers and 375-400 m² for people with a middle income. SHHA programme houses must correspond to some criteria of minimum standard and construction norms, like the construction of toilet facilities (at least pit latrines), the payment of service levies for water from a standpipe and for garbage removal.

Today, the fully serviced plots belong to the State, which charges rents on it, but the houses are for a period of 99 years in the property of the plot title-holder. Land tenure security is one of the pillars of social sustainability (Brennan 1994). In this sense, the possibility of inheriting plots provides social justice and security. In order to prevent speculation on the plots, the plot holder is not allowed to sell his house before ten years, unless he will be charged the full market prize.

The application of the principle of full cost recovery on the SHHA programme aims at social equity. Charging the medium and high-incomers plot prizes, property rates, service levies and rents allows a cross-subsidy to low-income groups. Thus, the medium and high-income residents, pay a full cost recovery of the land values, physical services and the social structure (education, health).

*The National Policy on Housing (NPH)*

The Policy addresses key elements of the housing sector including institutional capacity building, land, finance, subsidies, rentals, housing standards, building materials and housing legislation as well as the SHHA and the *District Housing Programme*, and private sector participation. These together define the affordability, suitability and sustainability of basic shelter programmes in Botswana. This policy should guide planners in shelter planning and layout designs for various developments.

The *NPH* from 1982, and revised in 1990, concretises Botswana’s overall political strategy, the ‘Vision 2016’: the aim of a ‘provision of adequate shelter for all’ calls for good quality basic houses within a safe and sanitary environment in both urban and rural areas from here to 2016. In order to slow down the tremendous speed of migration into Gaborone, the shelter improvements should begin first in the rural areas. Before the *National Policy on Housing* was reviewed (*GoB, MLGLH* 1997, *GoB* 2000a), only about 20 % of urban households could afford a modest 50 m² house type at the prize of 60’000 Pula (which is roughly 10’000 Euro). The main problem was the inability to afford building materials. From 1973 to present, the costs of building materials rose
from Pula 400 to Pula 20’000, which is a lot more than the average annual inflation growth rate of 10%.

A comprehensive planning under the described challenges requires strategies to improve the living conditions both in the urban and in the rural areas. The better the living conditions in the rural area will be, the more migrations into the capital may sink.

*Urban Development Standards of 1992*

The present *Urban Development Standards (UDS)* of 1992 are in actual fact a revision of the *Urban Development Standards Report* of 1981, necessitated by Botswana’s fast development. The *UDS* are applicable only in declared planning areas. Recommendations given in *UDS* are an attempt to make an affordable environment for both authorities and people as end users.

The fact that 1992 standards made attempts to address the inadequacies of the 1981 standards has made them very responsive and ideal to the present situation. This is given credence by reduction in lot sizes, which make the cost of provision of infrastructure minimal and above all, reduces the cost of serviced plots and hence more affordable to the community. Therefore, the *UDS* are used as a guide in the preparation of development plans and detailed layouts.

*Development Control Code 1995*

The prime motive of establishing the *Development Control Code (DCC)* in 1978 was to provide a set of regulations for consistent development in the *Declared Planning Areas* and more flexibility in land-use zoning. As time went on, the *Development Control Code* of 1978 was found to be unduly rigid, inadequate and outdated in that it could not open and/or match the increasing urbanisation trends and rapid modernisation. Therefore this necessitated the preparation of the *Development Control Code* of 1995. Another point noteworthy why the 1995 *DCC* was devised is the fact that the *United Nations Enabling Settlement Strategy* emphasised more on flexibility. That means, it calls for as much freedom of choice as possible in sitting of buildings on the plot, selection of building types, materials and construction to create a conducive living environment. Furthermore, the 1995 *DCC* has incorporated development control requirements for civic and community mixed land uses; advertisements signs; and petrol stations which were not absorbed by the 1978 *DCC*. According to the *DCC* informal economic activities may take place and small shops are allowed in residential areas. However, the *DCC* implementation goes slowly.

*The National Settlement Policy (NSP), 1998*
The overall goal of the policy is to provide a comprehensive set of guidelines for national physical planning and to provide a framework for guiding the distribution of investment in a way that reflects the settlements’ population size, economic potential, level of infrastructure and settlements’ role as service centres. As the inordinate growth of Gaborone is threatening the balance of development in the country (to the detriment of other urban areas like Francistown), regional master plans and new district settlement strategies are currently being worked out (GoB 1998).

**CONCLUSIONS**

The studies undertaken in the case city of Gaborone until now reveal not only problems but also workable solutions. A further urban sprawl of Gaborone cannot be sustainable, because it is economically and socially not affordable. If the development of Gaborone is judged to be not sustainable, what then is a sustainable city? There are a lot of hypothesis for an answer. Haughton & Hunter (1994) propose: ‘A sustainable city is one in which its people and businesses continuously endeavour to improve their natural, built and cultural environments at neighbourhood and regional levels, whilst working in ways which always support the goal of global sustainable development’. Bars (1999) argues that sustainability is a complex system including ecological, economic and social elements, and we can’t achieve sustainability without merging all three together and analysing their profound effects on each other.

Taking these definitions into account, a first approach for Gaborone should be that more emphasis has to be laid upon a clearer definition of what is sustainable urban development in the context of Gaborone. Then, the harmonisation of existing and coming policies and development plans as well as their orientation towards sustainability is a must. For this, a comprehensive strategy for sustainable urban development for Gaborone is to be worked out. As a first step, urban indicators should be developed and integrated in a GIS-based monitoring system that is able to screen the development of Gaborone and to derivate there from concrete needs for action.

The waste undeveloped areas, the Central Business District and the International Commercial Area, can serve as model plots to create ‘good practice’ models for high densities and mixtures of functions (see figure 5).

Rural development and decentralisation has still to be more strengthened. Future regional development plans and District Settlement Strategies should highlight the potentials of the rural areas, creating regional centres and attracting public and private investment for improved living conditions out of Gaborone.
Regarding the complex tasks for future planning in Gaborone and the limited human resources (lack of planning experts in authorities and in the private sector), a continued training and capacity building of staff of urban and regional planning inside the country has to be strengthened (Cavric & Mosha 2001).

Finally, further research in the broader frame of the DIMSUD project is scheduled to elaborate results in the other case cities of Johannesburg and Santiago de Chile. A comparing analysis will then highlight examples for ‘best practice’ in urban development that will be transferred between the project partners (academia and planning practice). Furthermore, enhanced through a web-based networking, recommendations for achieving sustainable urban development in developing countries will be made available for the world-wide community, especially the many other cities that are on the ‘start’ to become million or mega cities.

The case of (Old) Naledi Urban Renewal Project

Naledi is the name of a squatter settlement next to the central part of Gaborone. Since the 1960ies, the migrants from rural areas who could not afford regular plots, settled illegally and in poor conditions. In 1973, the government of Botswana replaced its previous intention of removing the squatter settlement of Naledi by a policy of resettlement (New Naledi Scheme) and squatter upgrading. A new site-and-service area was sought to attract the dwellers of (Old) Naledi. But due to the costly plots respectively the high rents prices for houses in New Naledi and also the pressure of new migrants looking for cheap houses, the newly established plots were taken up by other residents and new migrants.

After this failure, the Government of Botswana, supported by Great Britain and the World Bank, begun to upgrade the squatters of Naledi. According to Silitshena (1998) the upgrading of Naledi was done in two stages (see figure 7). The first stage handled the provision of primary services (main roads, drainage channels, main water supply, standpipes, street lighting and social services). The second stage, planned and implemented within the framework of each ward, extended these services to each plot holder (for example, secondary and tertiary roads).

In the following, plots were demarcated, access roads were built, water supply (standpipes) and drainage channels were provided and other infrastructure like street lighting, community, commercial and social facilities (such as primary schools and health clinics) were installed.
At present, around 40'000 people are living in the squatter settlement of Naledi. It is still the quarter of the poor, but as basic infrastructure is available, major social and health problems could be avoided.

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FIGURES

Figure 1. Africa’s big cities.

Figure 2. Aerial photo of Gaborone, 1966.

Figure 3. Aerial photo of Gaborone, 1998.


Figure 5. Industrial, commercial and residential zones in Gaborone. View from Kgale Hill.
Photos: M. Keiner.

Figure 6. Gaborone CBD Urban Design Proposal.

Figure 7. The two stages of upgrading Naledi.