



## acknowledgements



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Printed in Johannesburg, South Africa, 2009.  
ISBN number: 978-0-86970-685-5

I | world health organization, africa region

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## preamble

### **PREAMBLE**

The purpose of this paper is to outline the urbanization process in Africa, and to describe some of the environment and health implications of rapid urban growth in a selection of African cities. Much of the paper is based on case studies of ten cities, specially prepared for this purpose. The paper is divided into four main sections. The first section outlines the global urbanization process, and the special features of urbanization in Africa, for example the late stage of transition to a predominantly urban world and the occurrence of urbanization in Africa in a context of poverty and inequity. Section Two describes the approach adopted in the preparation of the case studies and the paper, and the sources of data used. In the third section key issues of health relevance in urban settings in Africa are discussed, including housing quality, energy and air pollution, violence, migration, xenophobia and health. This section has been based mainly on the ten case studies, and supplemented with data and information from a range of additional sources, including the published and "grey" literature. The fourth and final section gives an overview of the main findings as well as an indication of some of the key actions that need to be taken by various role players to address detrimental health situations in Africa's cities.

### **SECTION I: INTRODUCTION**

This section gives a brief overview of aspects of the global urbanization process, with particular emphasis on the features and challenges of urbanization in Africa.

#### **1.1 Global Urbanization Trends**

The twenty-first century has been described as the century of the city (UN-HABITAT 2008a). During this period the world has been transformed from a place of mainly rural dwellers to a place, increasingly, of urban residents. Overall, the scale and rate of urbanization over the past century has been extraordinary. In 1900 10% of the world's people lived in cities. By 2008, more than half the global population lived in cities. In 1900, thirteen cities, mostly in Europe, had populations of more than one million people; by 1990, this figure had increased to 235 cities. In 1900 only the City of London had more than five million people; currently, nineteen cities have populations exceeding that number (UN-HABITAT 2008a).

In some parts of the world, the growth of cities has occurred extremely rapidly, and overwhelmed the capacity of national and city officials to respond. In developing countries in particular,





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## introduction

beleaguered city managers have been hard pressed to meet the planning challenges and escalating demand for housing and basic environmental health services associated with natural population increase and in-migration. In some instances the response has been to put in place measures aimed at curbing the urbanization process. For the most part, these have met with failure. For example, attempts by the apartheid-based South African government to legislate against the influx, specifically of Black people, into cities, were abandoned in 1986. In recent years there has been an increasing sense, in both developed and developing countries, of the futility of such efforts. Instead, there is mounting acceptance of urbanization as a global and inescapable trend, and also recognition of some of the positive outcomes of urbanization (UN-HABITAT 2008a).

Cities grow through natural population increase (the number of births exceed the number of deaths), and because of in-migration (people moving into the city). Natural population increase is usually associated with improved living conditions, food supplies and health care. In-migration, on the other hand, may be associated with flight from places of origin, or an attraction to the opportunities offered in cities. Amongst the attractions of cities

are a wide range of opportunities for employment, education and entertainment, as well as freedom from the constrictions of life in small villages and towns. Usually, as countries transform from rural to urban, a concomitant transition occurs from in-migration to natural population increase as the driver of urban growth. Thus, while natural population increase is now the main determinant of urban growth in many countries, in areas with low levels of urbanization, such as sub-Saharan Africa, in-migration continues to be the main contributor to urban growth (UN-HABITAT 2008a).

### **1.2 Urbanization Trends in Africa**

The ruins of Axum (Ethiopia), Kahun, Great Zimbabwe, Meroe (Sudan) and Timbuktu, as well as archaeological investigations, testify to the existence of flourishing, diverse and complex ancient African cities prior to the advent of colonization. Historians have uncovered evidence of measures implemented in ancient African cities to, for example, protect health and safety, and manage the disposal of solid waste (Njoh 2009). The arrival of Arabic and European groups, and the process of colonization in Africa by Belgian, British, French, German, Portuguese or Spanish forces in the 1800s, induced an altered direction to urbanization in Africa (Njoh 2009). The extraction of, and need to export, raw materials

and cash crops resulted in a selective process of investment in, and development of, cities and towns, with relatively little regard for the well-being of Africans. Thus colonial authorities usually developed cities, towns, harbors and railway infrastructure along corridors of export to their native European lands. New cities were also developed to serve colonists' mining interests, as in Johannesburg and Kimberley in South Africa, and Kitwe in Zambia. Other cities and smaller towns, when not directly associated with colonists' interests, were relatively neglected (Hull 1976).

Growing awareness of the deteriorating living conditions and health consequences of urbanization in Africa sometimes elicited segregationist, rather than developmental, responses from colonial authorities. In other words, Africans were housed in settlements separated from settlers' residential areas to avoid visibility of aesthetically displeasing living conditions, and to prevent the spread of diseases perceived to be of African origin. A pronounced outcome of such segregation policies was the apartheid system of government in South Africa. To a lesser extent, similar segregation policies were implemented in other cities, such as Harare and Nairobi. In the mid-1900s, as the



## introduction

### Box 1. World Health Organization Urbanization & Health Facts

#### Fact 1

Of the three billion people who live in urban settings, an estimated one billion live in slums.

#### Fact 2

An estimated 130 000 premature deaths and 50–70 million incidents of respiratory illness occur each year due to episodes of urban air pollution in developing countries, half of them in East Asia.

#### Fact 3

An estimated 150 000 children are living and working on the streets in China.

#### Fact 4

In Nairobi, where 60% of the city's population lives in slums, child mortality in the slums is 2.5 times greater than in other areas of the city.

#### Fact 5

In spite of nightmarish congestion, motor vehicle use in developing cities is soaring. In 1980, the third world accounted for only 18% of global vehicle ownership; by 2020 about half of the world's projected 1.3 billion cars, trucks and buses will clog the streets and alleys of poorer countries.

#### Fact 6

The World Health Organization considers traffic to be one of the worst health hazards facing the urban poor, and predicts that road accidents by 2020 will be the third leading cause of death.

#### Fact 7

Breathing Mumbai's air is the equivalent of smoking two-and-a-half packs of cigarettes per day.

#### Fact 8

In Kumasi, Ghana, a country which privatized public toilets in the 1990s, private toilet use once a day for a family costs 10% of the basic wage.

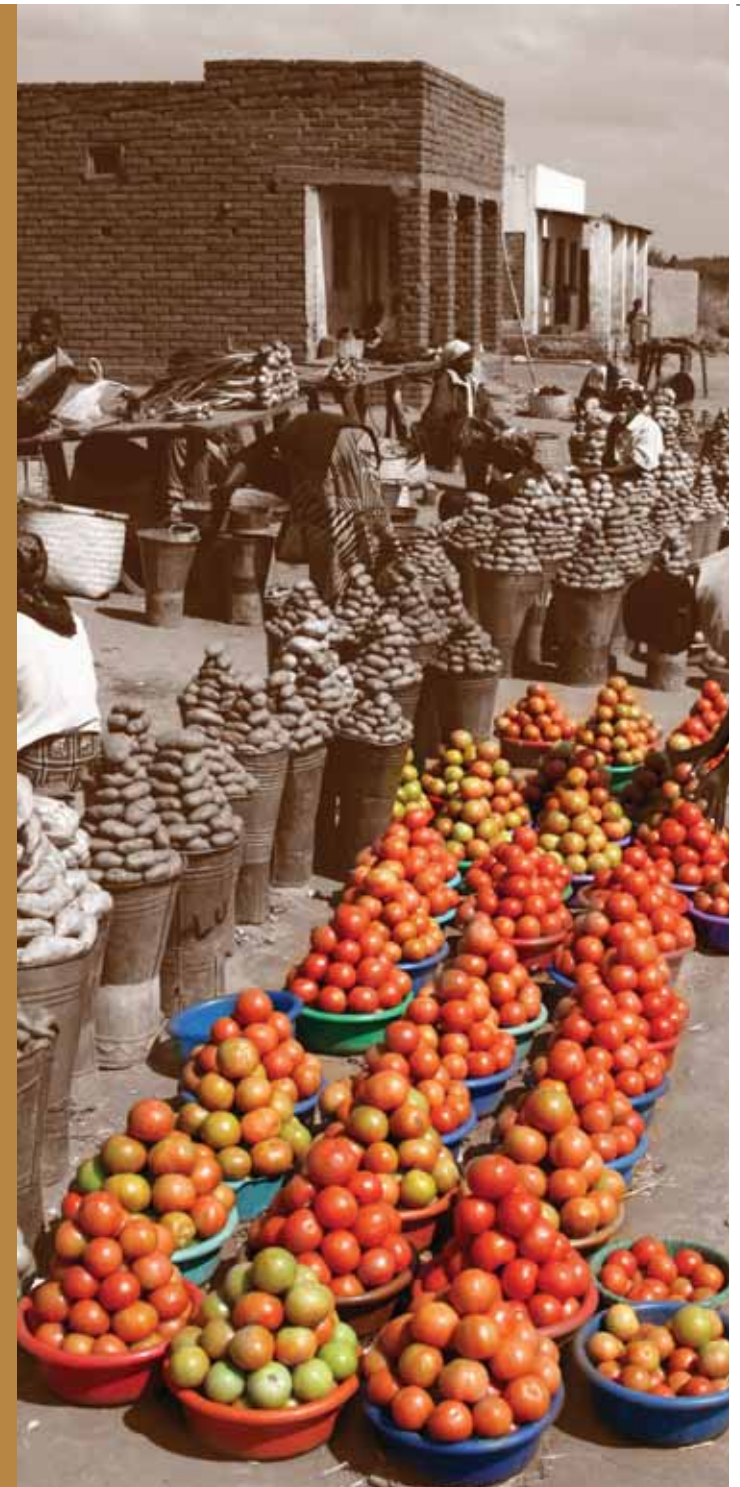
#### Fact 9

In Quito, Ecuador, infant mortality is 30 times higher in the slums than in wealthier neighborhoods.

#### Fact 10

In Kenyan slums such as Mathare it costs US6c for every visit to a privatized toilet. This is too expensive for most poor people, who prefer to defecate in the open and spend their money on water or food.

Source: WHO (n.d.) Facts: Urban settings as a social determinant of health. [http://www.who.int/social\\_determinants/publications/urbanization/factfile/en/](http://www.who.int/social_determinants/publications/urbanization/factfile/en/)



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global economy grew, development efforts in African cities grew, including schools, health services, roads and electricity supplies, albeit on an inadequate scale.

Since gaining independence, many African countries have been ravaged by ethnic conflicts, civil strife and war, as well as environmental disasters such as drought and famine. These events have been a key factor in high mortality rates, injury, violence and ill health in parts of Africa, and have also contributed to the migration of large numbers of people across borders and into cities within a short space of time. For example, as a consequence of civil strife, Luanda (Angola) gained an additional two million residents over a two-year period between 1992 and 1994 (UN-HABITAT 2008a), who now mainly live in slum conditions.

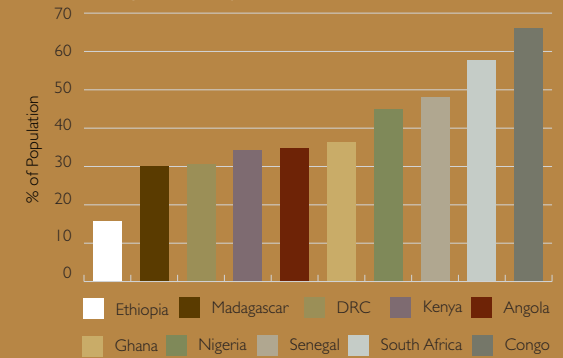
While more than 70% of the populations of Europe and North America already live in cities, in 2003 it was estimated that only 39% of the African population lived in cities (UN-HABITAT 2008g). Africa is the least urbanized region of the world, and still at a relatively early stage of its transition from a rural to an urban economy (see Figure 1). Nevertheless, the potential for high rates of urbanization in Africa in the coming decades is significant (UN-

HABITAT 2008g). The African urbanization rate is currently higher than in any other part of the planet. By 2030, for example, it is estimated that the urban population will account for 54% of the continent's people (see Figure 2). The scale and speed of Africa's transition from rural to urban is unprecedented in the history of the world. The size of the population of Abidjan in Côte d'Ivoire, for example, has increased twenty-fold since 1950 (UN-HABITAT 2008a).

The already substantial challenge of responding to rapid and large-scale urbanization in Africa is compounded by its occurrence in a context of declining average economic performance, poor planning and poor governance. Thus the majority of new arrivals in African cities find themselves living in conditions of poverty, in sprawling slums and informal settlements, or areas of inner city degradation (Vlahov 2007).

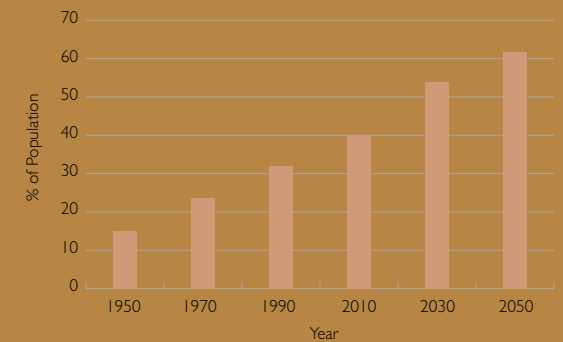
Some researchers, however have observed that in recent decades both the population and urban growth rates in Africa have been slowing (see Box 2), most likely associated with the HIV/AIDS epidemic and "back-migration". Some small cities in Zambia, for example, have recorded a population decline in recent years

Fig 1: PERCENTAGE OF NATIONAL POPULATION LIVING IN URBAN AREAS



Source: UN-HABITAT (2003b)

Fig 2. PERCENTAGE OF AFRICAN POPULATION LIVING IN CITIES



Source: UN-HABITAT (2008a)

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## introduction

(UN-HABITAT 2008a). These and other factors have resulted in calls for careful interpretation of predictions of exceedingly high growth rates in African cities. In particular, questions have been raised about the completeness and accuracy of some of the data sets on which predictions of rapid growth in African cities have been based (Cohen 2004). For example, in 1994 it was predicted that by 2015 Lagos would become the world's third-largest city with a population exceeding 24 million people (Todaro 1997). More recently those predictions have been adjusted, with Lagos expected to have a relatively smaller population of 16 million people by 2015 (still, the world's eleventh-biggest city) (UN 2002). Notwithstanding the debates about increasing or decreasing rates of urbanization in Africa, the reality is that large numbers of people are being added to African city populations, many of whom live in conditions that do not protect or promote health.

Definitions of "urban" and "rural" may differ from one country to another, in some cases rendering comparisons across countries and cities invalid (Cohen 2004). Cities may also be defined by administrative region, rather than the congregated population overall. Thus the City of Johannesburg is considered to have a population of around 3.2 million. However, the estimated population

of Johannesburg together with the contiguous municipalities of Tshwane, Mogale and Ekurhuleni is well over 10.5 million people. Urban sprawl and improvements in transportation networks and communication systems may also diffuse the distinction between "urban" and "rural", resulting in the reclassification of contiguous rural land to urban, further swelling "city size" (UN-HABITAT 2008g, Cohen 2004).

### 1.3 Key Features of Urbanization in Africa

Urbanization in Africa has several important features that have not been associated to the same extent with the urbanization process during the Industrial Revolution or in better resourced countries. For example, urbanization in Africa is occurring in a context of high levels of poverty and inequality, the formation of sprawling slums on the urban periphery and the phenomenon of urban primacy.

#### 1.3.1 Urban Poverty & Slum Formation

Many sub-Saharan African countries are among the poorest in the world, as measured by gross national income per capita per year (UN-HABITAT 2008a). Rural poverty is pervasive in many African countries; however, large proportions of African



## introduction

### Box 2. Migration flows to African towns are slowing

Cities and migration can make an important contribution to development in poor countries. But in many sub-Saharan African countries, migration to large towns is falling and urbanization is slowing. This is often the result of declining economic opportunities in urban areas. Research from King's College London, in the UK, examines urbanization in sub-Saharan Africa. Using census and survey data, the research looks at recent growth trends in large and medium-sized towns in 14 African countries: Benin, Burkina Faso, Côte d'Ivoire, Ghana, Kenya, Mali, Mauritania, Mozambique, Niger, Nigeria, Senegal, Tanzania, Uganda and Zambia.

In many poor countries, employment opportunities make urban areas very attractive for migrants from rural areas. But experiences differ widely across developing regions. In many sub-Saharan African towns and cities, structural changes have led to falls in formal employment and a rise in dependence on informal, low-paid work. As urban migrants lack access to economic safety nets, they often have little option but to return home when a crisis hits (for example, if they lose their job). This has led to an increase in circular migration (the continuing movement of people between rural and urban areas), which has always been important in sub-Saharan Africa.

Where urban economies are attractive to migrants, it is often clear that their population growth is mainly derived from in-migration from rural areas. However, the research shows that many towns in Africa – particularly in West Africa – are not growing much faster, and occasionally are growing more slowly, than rural populations. Other key findings of the research include:

Across Africa, net migration to towns has slowed significantly.

Counter-urbanization has occurred in Zambia, Côte d'Ivoire and Mali.

Net in-migration has become weak or negligible in most urban centers in Benin, Mauritania, Mozambique, Niger and Senegal.

In Niger, Kenya and Tanzania, the capital cities are still experiencing strong net in-migration, but the situation in other main towns is mixed.

In Uganda, violent conflict has encouraged migration to Gulu and Lira, but migration to other towns is low or negative.

In Ghana, net migration to towns is low except for Kumasi.

The research shows that some African countries are now not necessarily becoming more urban, or are only urbanizing very slowly. It is important that the economic problems and urban livelihood issues that are driving these trends are fully recognized. The implications of the research include:

The appearance of new, unplanned residential areas does not necessarily indicate that a city is attracting and keeping large flows of in-migrants.

Circular migration has increased as a result of structural change in many sub-Saharan African countries.

In Côte d'Ivoire and Burkina Faso, many young people are among those leaving the large towns and cities for rural areas.

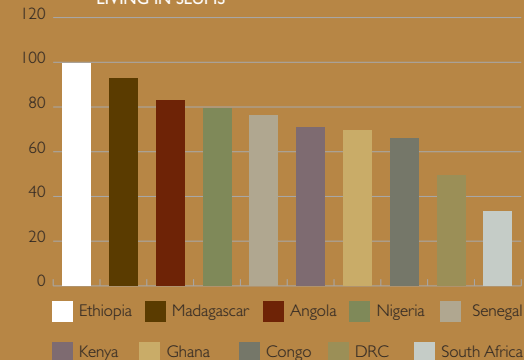
The trends identified are important indicators of the crisis in urban poverty and livelihood insecurity in many of sub-Saharan Africa's urban areas.

Policymakers need to recognize the urgency of addressing these issues.

Source(s):

'The Slowing of Sub-Saharan Africa's Urbanization: Evidence and Implications for Urban Livelihoods', Environment and Urbanization 21 (1), pages 253-259, by Deborah Potts, 2009

Fig 3: PERCENTAGE OF NATIONAL POPULATION LIVING IN SLUMS



Source: UN-HABITAT, (2003a)

## introduction

urban residents also live in poverty. For the urban poor, access to housing is a particular challenge. Where demands for housing and basic environmental health services are unmet, sprawling informal settlements may develop. UN-HABITAT estimates that about 72% of urban African residents live in informal settlements (UN-HABITAT 2008a). For example, the Kibera settlement on the outskirts of Nairobi, Kenya is estimated to house around one million people, and is regarded as the largest slum in the world. The proportion of slum dwellers is also particularly high in countries such as Ethiopia, Angola and Madagascar, where the majority of urban residents live in slums, and face multiple forms of deprivation (UN-HABITAT 2003g) (see Figure 3).

Most of the future growth in African cities is expected to occur in existing areas of poverty and deprivation (Vlahov 2007). In some instances it has been observed that in-migrants may have a preference for cheap accommodation in slums, informal settlements and backyard shacks. The savings accrued may be used to send remittances back to their places of origin, for education purposes, or for savings towards new houses in their origin communities.

### 1.3.2 Urban inequality

Huge disparities have been observed in health across, and within, countries. For example, life expectancy in Japan equals nearly 82 years, compared to 34 years in Sierra Leone (Marmot, 2005). Similarly, mortality among children under five years of age varies from 3 per 1000 live births in Iceland to 316 per 1000 live births in Sierra Leone. Several African countries are enjoying rapid, positive economic growth. However the increase in wealth is often concentrated in the hands of a very small fraction of the population, with the majority not benefiting from national economic growth, further widening the gap between the rich and the poor.

The Gini coefficient is a measure of inequality – the higher the coefficient, the higher the degree of inequality. With a Gini coefficient of 0.73, cities in South Africa stand out in Africa (and the world) as being the most unequal. Already high beforehand, inequality in South Africa has increased further since the dismantling of apartheid. Income inequalities are also very high, and increasing, in the cities of Namibia (Gini coefficient = 0.62), Kenya (Gini coefficient = 0.58), Botswana and Nigeria (Gini coefficient = 0.42). On the other hand, Freetown in Sierra Leone



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(Gini coefficient = 0.32) and Dar es Salaam (0.36) in Tanzania are amongst the most equal cities in sub-Saharan Africa (UN-HABITAT 2008a).

While they make a significant contribution, poor living conditions and differences in health care alone, do not account for the observed inequalities. The work of the World Health Organization's Commission on the Social Determinants of Health has highlighted a broader range of social factors that need to be addressed in order to effectively tackle health inequalities. These include stress, early life, social exclusion, unemployment, social support, addiction, food insecurity and transport (Marmot 2005).

In cities with significant inequality, social vulnerability is heightened, and associated with social tension, conflict and other forms of unrest. In South Africa, where inequality is greater than anywhere else in the world, the frequency of social protest against perceived sluggish service delivery has escalated in recent years.

### **1.3.3 Urban Primacy**

"Urban primacy" is the concentration, within a country, of a significant proportion of the urban population in a single city, usually the capital city. In contrast to the case in many developed countries, urban primacy is a distinctive feature of urbanization in several African countries. For example, Maputo is the only major city in Mozambique. South Africa is an example of an exception, having several major cities (such as Johannesburg, Cape Town and Durban), as well as a number of medium-sized cities (such as Kimberley, Bloemfontein and Polokwane) that are also undergoing rapid growth. Concerns around urban primacy relate to the imbalances created in the distribution of populations and resources. Thus capital resources and people are drawn to the primate city, to the detriment of the rest of the country. Migrants are usually drawn to the main city, notwithstanding evidence of urban unemployment. Large primate cities may in time become associated with negative consequences, such as pollution, crime, traffic congestion and social unrest. On the positive side, urban primacy has also been associated with modernization, the cost-effective delivery of services and greater opportunities for learning and technical advancement (UN-HABITAT 2008g:23).

### **1.3.4 Urban Disasters**

With the advent of climate change, there has been increased attention paid around the world to disasters and their management. Africa is usually associated with a particular type of disaster: rural drought and resulting food shortages. But Wisner and Pelling (2009) suggest that African urban areas are hotspots of disaster risk, and those risks are multi-dimensional: flooding; earthquakes; accidents; crime/riots; fire; toxic wastes and illegal dumping of hazardous materials; and epidemics. An example of the risk is that half of Africa's 37 cities with over a million population are in low-lying coastal areas and thus especially prone to flooding, with severe implications for the health and safety of residents of those cities.

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### Box 3. Nairobi: where differences in physical infrastructure illustrate stark inequalities

With a population of nearly three and a half million, Nairobi employs 43% of the country's urban workers and generates over 45% of the gross domestic product (UN-HABITAT 2006: 4). Over 60% of the population lives in slums but only 22% of slum households have water connections. Inequalities and poverty in the city are on the increase as evidenced by slum expansion, greater numbers of people living and begging on the streets and a rise in crime (UN-HABITAT 2006: 9). Around half the population lives below the poverty line and forty-two percent of the income generated in the city is enjoyed by the wealthiest 10% of the population, while the poorest 10% of the population only access 1.6% of the city's generated income (UN-HABITAT 2006). The lack of even basic municipal services in many areas forces the poor to buy water and electricity from private sources, paying more than those accessing municipal services.

Population density differs significantly between different parts of Nairobi, with a city-wide average of 31 people per hectare. Yet, while Woodley is home to approximately 2 000 people per square kilometre, this number increases 25-fold for nearby Kibera, with around 50 000 people per square kilometre. Informal settlements cover only 5% of the total residential land area of the city, yet are inhabited by over half the city's population (UN-HABITAT 2006).

Ninety percent of slum dwellers rent their houses through a flourishing informal land and rent market. A study of 1 755 slum households during 2004 revealed that while slum houses were of poor condition, residents paid unusually high amounts for rent. Rent accounts for 12%

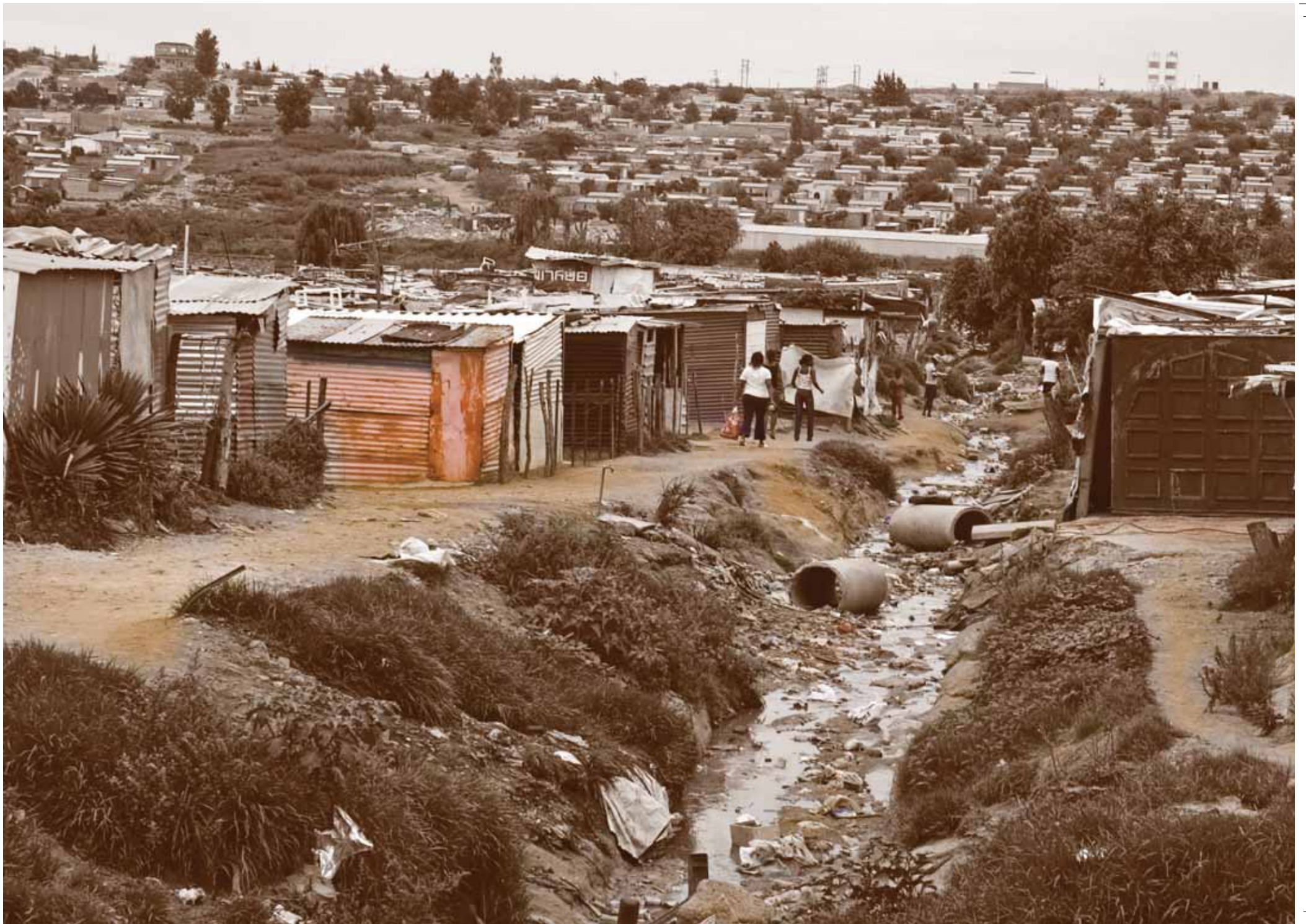
of monthly household income in poor households in Nairobi's slums, which is surpassed only by food expenses (Gulyani & Talukdar 2008: 1925). Only 4% of the renters have written agreements with property owners, leaving the remaining 96% extremely vulnerable.

By 2006, the city council was responsible for 20% of all evictions taking place in the city while the majority of the rest of the evictions were attributed to "land owners" evicting tenants (UN-HABITAT 2006). Efforts continue to try and provide those living in the slums with adequate service delivery. In a recent effort to protect Nairobi's waterways, the government has implemented a clean-up strategy that removes any residences within thirty meters of these waterways. This has resulted in a high number of evictions despite an order from the High Court in 2007 aimed at stopping such evictions (Concern 2009).

The price of water in the city has doubled in the past year (Concern 2009). The water supply in the city is also being affected by leaks, illegal connections, poor management and insufficient infrastructure to meet demand levels (UN-HABITAT 2006). On average, 71 people in Nairobi's slums share a single toilet and 6% of all slum dwellers cannot access toilet facilities at all (Gulyani & Talukdar 2008: 1922). Storm water drains have been poorly maintained in the city, resulting in excessive run-off causing damage to property as well as pollution of rivers with human waste washed through the slums (Gulyani & Talukdar 2008: 1924).

In the slums only 22% of dwellings are connected to the city's electricity, those without connections almost exclusively use kerosene (Gulyani & Talukdar 2008: 1922). Cooking fuel prices have however risen by between 30% and 50% over the last year (Concern 2009).









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## method of work

### SECTION 2: METHOD OF WORK

This work involved the preparation of ten city-based case studies and a position paper on Urbanization and Health for the African Region of the World Health Organization. The ten case-study cities are Nairobi, Lagos, Dakar, Kinshasa, Brazzaville, Johannesburg, Lusaka, Addis Ababa and Luanda.

A multi-pronged approach to the collection of data and information was adopted in the preparation of the case studies and paper. The content is therefore drawn from a variety of sources, including reports and the websites of various United Nations agencies, such as the World Health Organization (WHO), the United Nations Centre for Human Settlements (UN-HABITAT), and associated initiatives such as the Global Urban Observatory (<http://ww2.unhabitat.org/programmes/guo/>). The websites and work of relevant non-governmental organizations, such as the Africa Population and Health Research Centre (APHRC) were also examined. Where available, the dedicated websites of the ten cities were scrutinized to identify appropriate information.

The published literature was scanned for relevant articles using key words such as urbanization/urbanisation, development, health, urban, cities, Africa and [city name], as deemed appropriate. Among the search engines used were Medline and Science Direct.

Attempts were also made to obtain data and perspectives directly from stakeholders in the ten focus cities. For this purpose

an introductory letter outlining the project was drafted and sent by electronic mail and facsimile to the Heads of Departments of Health and of Planning in the ten cities. For Francophone and Lusophone countries, the content was translated into French and Portuguese respectively. The letter contained a request for access to locally derived or empirical data and reports related to the topics and cities of interest, as well as the opportunity of a telephonic interview to discuss stakeholder perceptions of the urbanization process and associated challenges in each city. A questionnaire/interview schedule was drafted to guide such telephonic interviews. The same letter was also directed to a range of additional city-based contacts that the members of the drafting team had identified through their networks and the data collection process. The introductory letters were followed up with telephone calls to the target individuals. Despite a substantial effort to obtain data and information through this method, success was limited. Examples of impediments were non-availability of key contacts and telephone service breakdowns. In most cases however, the major stumbling block was the absence or dearth of locally collected data on urban conditions and populations.

The 8th International Conference on Urban Health took place in Nairobi, Kenya during October 2009, giving researchers, health practitioners, policy makers, and donors the opportunity to deliberate on innovative research, policies, and interventions that address current and future health challenges in urban centers worldwide. The fact that, for the first time in the conference's history, it took place in the global South was to set a signal and

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## overview of urbanization-related challenges in selected african cities

accentuate the role that the International Society for Urban Health has in putting challenges of urban health in rapidly growing urban centers in Africa and elsewhere in the South on the international agenda. For the purposes of this report, it was an opportune moment to gain insights into current and future challenges, not only through the plenary and other presentations and deliberations among international experts, but also through the opportunity to have direct input into the recommendations made later in this report, by way of brief interviews conducted with researchers, practitioners, and local government officials and representatives.

Information in the paper was supplemented with Boxes, which illustrate key issues and health and development achievements in African cities. The information for Boxes was obtained from media articles and the websites of selected non-governmental organizations and other institutions.

### SECTION 3: OVERVIEW OF URBANIZATION-RELATED CHALLENGES IN SELECTED AFRICAN CITIES

In this section, a selection of key environmental factors that may influence the health of urban residents in Africa will be discussed, including housing, water, sanitation, transport, traffic, air quality, migration and xenophobia.

#### 3.1 Housing Quality

The state of housing and living conditions is one of the most powerful determinants of public health. The second International Habitat conference held in Istanbul in 1996 produced a definition of “healthy housing” (see Box 4) that emphasizes a broad spectrum of physical, neighborhood, social and economic factors that may impact of on health.

#### Box 4. Definition of “healthy housing”

*“Adequate shelter means more than a roof over one’s head. It also means privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such as water-supply, sanitation and waste-management facilities; suitable environmental quality and health-related factors; and adequate and accessible location with regard to work and basic facilities; all of which should be available at an affordable cost. Adequacy should be determined together with the people concerned, bearing in mind the prospect of gradual development. Adequacy often varies from country to country, since it depends on specific cultural, social, environmental and economic factors. Gender-specific and age-specific factors, such as the exposure of children and women to substances, should be considered....”*

UN-HABITAT (1996) The Habitat Agenda Section, IV B. Adequate shelter for all. [http://ww2.unhabitat.org/declarations/habitat\\_agenda.asp](http://ww2.unhabitat.org/declarations/habitat_agenda.asp)  
2nd HABITAT Conference in Istanbul, Turkey, 3-14 June 1996

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Around one billion people across the world currently live in urban slums (Martínez et. al. 2008), in which housing quality is far removed from that described in the Istanbul definition. It is estimated that more than two-thirds of residents in African cities live in slums that do not meet the definition of “healthy housing” (UN-HABITAT 2008a). In some African cities, the vast majority, or all urban residents are described as living in slum conditions (see Figure 3). African urban slums or informal settlements may reach vast dimensions. The Kibera settlement in Nairobi, Kenya, for example, has been estimated to house around one million people, and is described as the largest slum in the world. While there is considerable heterogeneity across slums in terms of living conditions and the degree of deprivation, it is nevertheless the case that millions of urban residents in Africa endure unsafe and unhealthy living conditions in slums. On a global scale, the worst-rated cities (in terms of condition of shelter) are all found in sub-Saharan Africa, mainly in areas in which political unrest and armed conflict have hampered urban service delivery (Martínez et. al.2008).

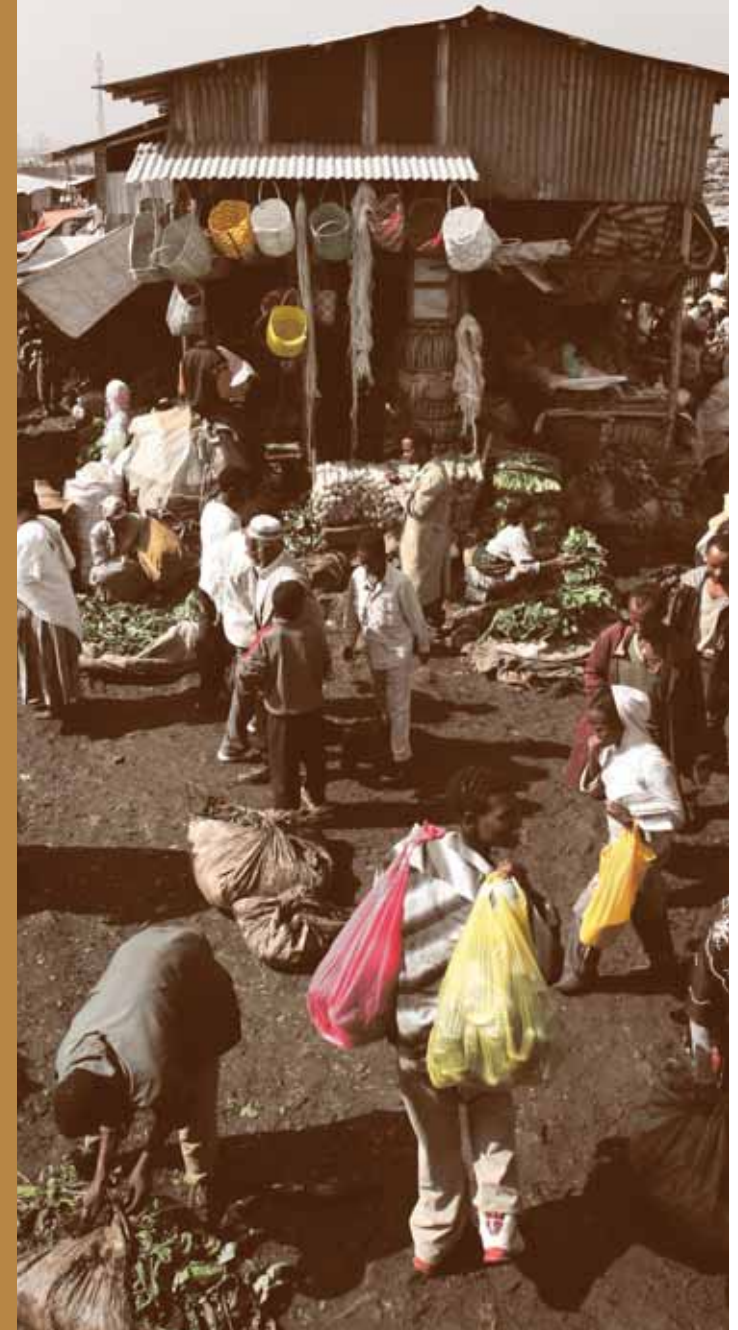
### Box 5. Accra: unfulfilled urban plans

With a population of about 2.3 million, Accra is one of the fastest-growing cities in West Africa (UN Centre for Human Settlements 1999). Between 1980 and 2010 the city's population tripled, with an annual growth rate of 3.2% between 2005 and 2010 (UN-HABITAT 2008g). In comparison, the national urban growth rate was 1.6% between 2000 and 2010 (UN-HABITAT 2008g). The level of urbanization in the country currently stands at about 50% (UN-HABITAT 2008g). In 2008 58% of the urban population lived in slum areas (UN-HABITAT 2008g). Back in 1995 the Ghana Living Standards Survey reported that households living in poverty in the capital city had doubled in the short span of four years between 1988 and 1992 from 9% to 23% (Grant & Yankson 2003: 70).

Thirty percent of the country's manufacturing industries are located in the capital (UN-HABITAT 2008g). The expansion of multinational corporations in the city has led to large-scale infrastructure programmes, which “transformed the geography of the formal economic sector” (Grant & Yankson 2003: 69). The Town and Country Planning Department is responsible for land use in the city and has compiled a master plan and sector layout plan, which, however, has proved difficult to implement due to the rapid influx of people. The Ministry of Works and Housing in 2001 declared 10% of Accra's housing stock non-upgradeable and declared a housing deficit of about 250,000 units (Grant & Yankson 2003: 70). Insufficient physical planning, partly due to a lack of capacity at city management level and inadequate policies

governing housing development in the city, have contributed to a rise in urban slum dwellers. In 2008 no policy or budgetary commitment by the city management was in place for in situ upgrading of slum areas or provision of formal housing to slum dwellers (UN-HABITAT 2008a). This comes as, in 2003, already close to half of Ghana's national population lived in slum households.

But middle-class citizens in Accra, too, are struggling to find adequate and affordable accommodation in the city. The shortage of housing has resulted in significant returns for property investors who are reported to now ask for three to four years' rent in advance (Obeng-Odoom 2009: 51). Grant and Yankson (2003: 71) argue that pressure on the housing market for this segment is augmented by both an increase in the number of expatriates and the expansion of the city's middle class. All in all, this has led to a situation whereby “homeownership remains beyond the reach of the vast majority of Accra residents (Grant & Yankson 2003: 71). In return, this has increased the number of households living in rental housing (in 2003 standing at approximately 64% according to Grant & Yankson (2003: 71)). Forty percent of rental housing comprises of two- to three-roomed units, with an increasing number of households renting single-room accommodation (Konadu-Agyemang 2001: 19). This increasing demand for well-developed middle-class housing on one hand, and an increase in people living in slum settlements on the other, has meant that disparities in housing quality between these two groups have escalated over recent years (see Konadu-Agyemang 2001: 20-21).



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Among the environmental health hazards occurring in urban slums are overcrowding, unstable dwelling structures, limited access to safe water and sanitation, daily use of polluting fuels and exposure to high levels of indoor air pollution and inadequate solid waste and wastewater disposal services. Ramshackle shelters may not provide adequate protection against intrusion from wind, rain and harsh sunshine, as well as against noise and dust. The poorest urban residents are usually also located on hazardous land, for example within flood prone areas, or on steeply sloping or dolomitic land. During extreme weather events they would be at elevated risk of exposure to floods, landslides or land collapses, with concomitant injury, disability, loss of life and destruction of property. Housing located in close proximity to polluting industries could increase the exposure of residents to industrial air pollution or contaminated soil. Housing design and structure need to be secure to avoid injury to the occupants, and safe materials should be used in the construction process. Asbestos, for example, has been widely used in the construction of low cost housing in Africa, despite knowledge of its health hazards (Mathee et al. 2000). Lead-based paint continues to be available in some African countries, and applied to homes, schools and playground equipment (Mathee et al. 2007). To meet daily cooking needs polluting fuels such as paraffin (kerosene), coal and wood are widely used in African rural and urban areas, resulting in highly elevated exposure to particulate matter indoors.

### **Box 6: The importance of land tenure for the urban poor**

Land tenure remains key in the sustainable and health-promoting delivery of housing to the urban poor. Where cities criminalize the largest number of their households on the grounds of illegal occupation of (often city-owned) land and contravening by-laws or building standards, the motivation of community members to invest and participate in the upgrading of their living conditions is low. A Nairobi-based staff member of an NGO working with communities in urban slum settlements in the city, emphasizes that his experience is that community members are motivated and easily mobilized in support of health interventions. However, where residents face evictions by landlords or government they are, he emphasizes, much more reluctant to get engaged. When looking at slum dwellers through the lens of illegal occupation of land, however, the emphasis is easily shifted from

improving their health conditions to their illegality. Enrique Penalosa (verbal presentation at International Conference on Urban Health (ICUH) 2009), former mayor of Bogotá, has emphasized the opportune moment for city governments in Africa to acquire land in the urban centers and peripheries of cities in order to avoid issues of land tenure as people settle in these areas. This can have a positive impact on health. Emerging data presented at the ICUH 2009 repeatedly emphasized that community members in urban centers in the South are key agents in health promotion. David Satterthwaite (verbal presentation at ICUH 2009) reports on an "amazing scale of success" in instances where local government sees communities as partners rather than enemies. Criminalizing their homes and livelihoods hampers the potential of building partnerships which can be key in establishing urban health systems in poor urban communities where traditional health systems have been shown to fail the majority of residents.

Preliminary findings from the Large Analysis and Review of European Housing and Health status (LARES) study show associations between housing and health that have not been well studied in African settings. For example, it has been shown that people are more depressed and anxious when they live in a house that does not offer protection against noise, vibrations, dampness, moulds, draughts, extremes of temperature, overcrowding and vandalism. Housing should also be adequately lit, have a pleasing view and have parks and gardens to facilitate socialization. Low socio-economic status, insecurity of tenure and a negative image of the neighborhood was also associated with depression and anxiety (WHO 2004). The LARES study also showed that high levels of damp and mould growth were associated with asthma, nasal allergies, chronic bronchitis and eczema. Sleep disturbances, and stress-related diseases, were associated with noise annoyance, especially during the night time. The risk of accidents was shown to be elevated when bedrooms were shared and the home was poorly lit (WHO 2004).

## overview of urbanization-related challenges in selected african cities

### Box 7. Brazzaville: failed public-private partnerships for water

Brazzaville is the capital and, at around one million population, is the largest city of the Republic of the Congo, housing more than a third of the country's population (Tiepolo 1996). The city's rapid growth is mainly attributed to the oil booms of 1972-74 and 1979-84, which raised the GNP considerably and turned exports from agriculture and timber to the energy sector. Over the next ten years, however, the oil industry dropped its outputs significantly, and the city fell into a deep financial crisis worsened by the difficult transition from a one-party to a multiparty government (Tiepolo 1996).

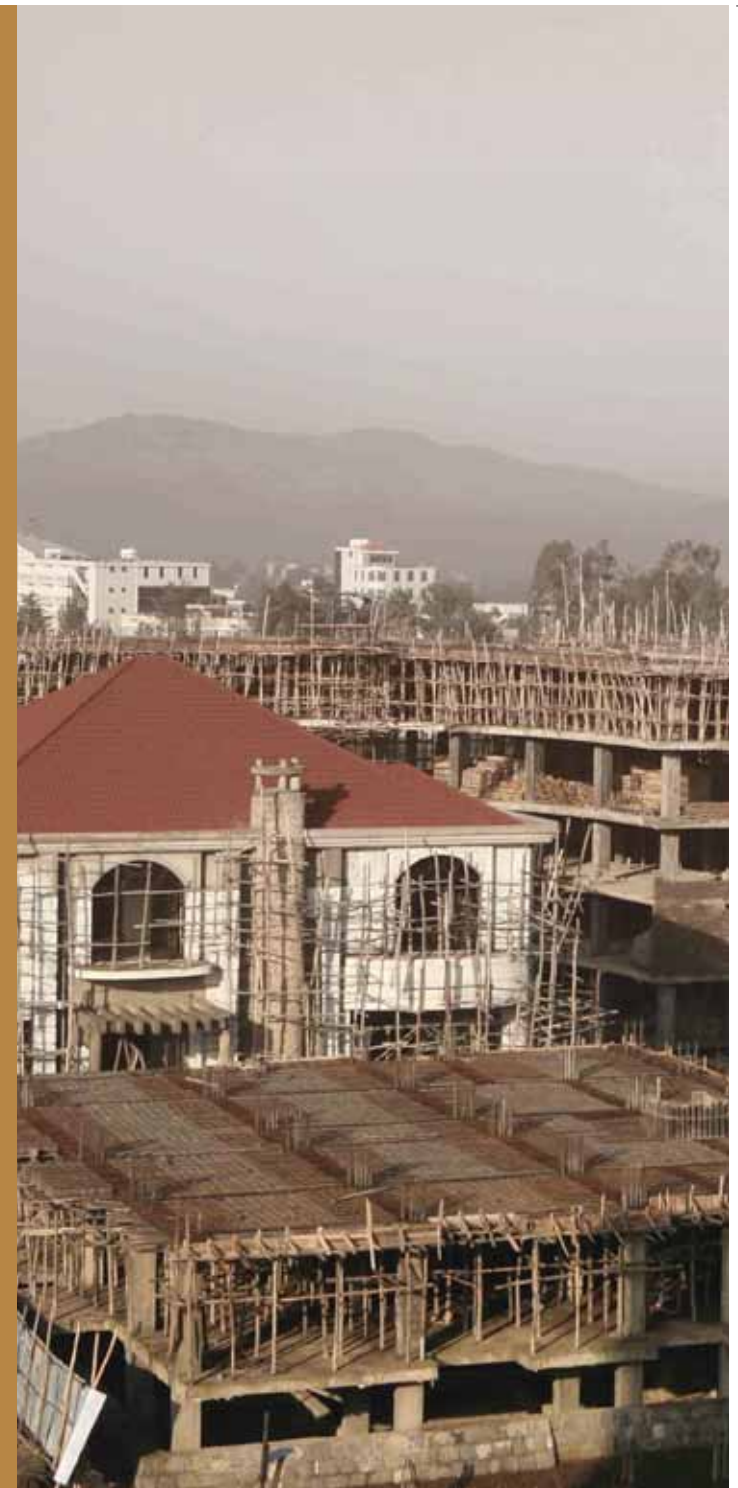
Since 1989, the National Company for Water Distribution (SNDE) has undertaken efforts to enter into public-private partnerships with

private water providers, most notably GETRAB and SCT. However, owing to the inability of the poor in the city to afford the connection fees, these partnerships have failed to reach their water-connection goals. Other problems experienced include a lack of reliable information about the levels of water demand; an anti-competitive environment; a lack of public awareness and interest; and counter-productive relationships with the regulating body (Tati 2005). Employees of the contracted companies were also by and large unhappy with the terms of employment, thereby impacting negatively on morale and attitude. Consequently, of the 5 000 connections planned at the beginning of the partnership with GETRAB, only 2 000 were completed (Tati 2005). In 1996 no piped sewerage system existed anywhere in the city (Tiepolo 1996).

### 3.2 Water and Sanitation

Access to safe water and sanitation are fundamental aspects of housing, and are critical for health. The relationship between safe water, improved sanitation, and infant mortality has been well established by the World Health Organization. Yet in 2000, over 300 million people in Africa did not have access to safe water and over 500 million were without adequate sanitation (Martínez et al.2008).

Infant mortality is a powerful indicator of living conditions, quality of life and economic development. Countries with high child mortality rates also tend to have a high proportion of their population living in slum conditions (Martínez et. al.2008). Thus mortality among children under 5 years of age in developed countries is ten times lower than in developing countries overall. When specific settings are taken into account the variation may be much greater. For example, under-5 mortality was around 9 per 1000 live births in developed countries, compared with 172 per 1000 live births in sub-Saharan Africa in 2001 (Martínez et. al.2008). In the 1990s child mortality



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rose in sixteen countries of the world; twelve of these were in Africa. In Zimbabwe, child mortality rose by 43%, and in Botswana by 52% (Marmot 2005). The WHO Commission on the Social Determinants of Health (Knowledge Network on Urban Settings) has advised that relatively small investments in the improvement of living conditions can yield major benefits in terms of reductions in child mortality. This was reflected in the City of Kampala, Uganda, when improved water supplies (coverage increased from 29% to 87%) resulted in a dramatic decline in mortality among children under the age of 5 years (Martínez et al. 2008). It is of particular concern that in some cities, such as Lagos, access to safe water has been deteriorating in recent years (Martínez et al. 2008).

### 3.3 Air Quality

#### 3.3.1 Indoor Air Pollution

Large proportions of the residents of urban African slums are exposed to high levels of indoor and ambient air pollution on a daily basis. Exposure to air pollution in African cities is predicted to increase with urbanization. Yet little research or systematic measurement and monitoring of air pollution has occurred (Arku et al. 2008), severely limiting the potential to describe and address the problem. It is generally recognized, however, that there are three important air pollution scenarios in African cities; the burning of solid and liquid fuels for domestic cooking, space heating and lighting, vehicular emissions and industrial emissions. From one

place to another, other sources of air pollution may also be important, such as smoke from cooking street foods in Accra (Arku et al. 2008), the use of poor quality gasoline and two-stroke motorbikes in Cotonou, Benin (Fanou et al. 2006) and the Harmattan wind that blows dust particles across the City of Lagos from the Sahara Desert (Baumbach 1995).

#### Box 8. Luanda: a much needed investment in housing

The UNDP report for Angola in 1999 characterised the levels of human development for the country as "abysmal" (Jenkins et al. 2002: 144). Luanda is the capital and largest city of Angola, being the chief seaport and administrative centre. The last full census in the country was undertaken in 1970, and there is therefore a lack of statistics beyond some surveys conducted by the National Statistical Institute which estimates Luanda's population at 3.4 million, significantly lower than other estimations (Jenkins et al. 2002: 143). The city population is expected to rise to between 4.7 and 5.4 million by 2010, accounting for some 30% of the national population (Jenkins et al. 2002: 144). In 1996 it was estimated that 50% - 60% of the city's population were living in poverty and up to 15% of these suffered from extreme poverty (Jenkins et al. 2002: 144). Service provision is also poor in the city, owing mainly to two reasons: firstly, the 27-year-long civil war which ended in 2002 and ongoing conflict; and secondly an economy increasingly dependent on oil and diamonds, resulting in a few very rich citizens and a majority populace with an extremely limited income per capita, and a consequent inability to pay for services (Jenkins et al. 2002: 143).

In 1995 about 75% of the city's land use was residential, 70% of which was considered as high-density musseques or informal settlements which surrounded the city and were situated in environmentally

dangerous or toxic areas (Jenkins et al. 2002: 145). Sporadic wars, rapid urban expansion and a sharp increase in population density have prevented planned and systematic urban and housing development so that urban development appears to be rapid and uncontrolled and mostly "informal" (Jenkins et al. 2002: 142). The inner city is characterized by overcrowded and informally organised living areas, although a small percentage is considered high quality housing (Jenkins et al. 2002: 144). Approximately 75% of the city's residents have informal living arrangements so that the city council has little control over rent collection and sales of properties, including those under the city's ownership (Jenkins et al. 2002: 144). The poor spend approximately 1% of their income on housing, whereas the rich spend about 5% on housing (Jenkins et al. 2002: 144). Musseques typically have 12-15 occupants per "house" and three people per room (Jenkins et al. 2002: 144).

The city has been lauded for its implementation of the PPP "public private partnership" project, the Luanda Sul Self-Financed Urban Infrastructure Program (EDURB), initiated in 1994, which is geared towards providing land and resources for housing development. The project has provided land to over 1500 lower-income residents as compensation for relocation. It has aspirations of refurbishment of older areas in the future and implementation of a housing savings scheme (Jenkins et al. 2002: 146).

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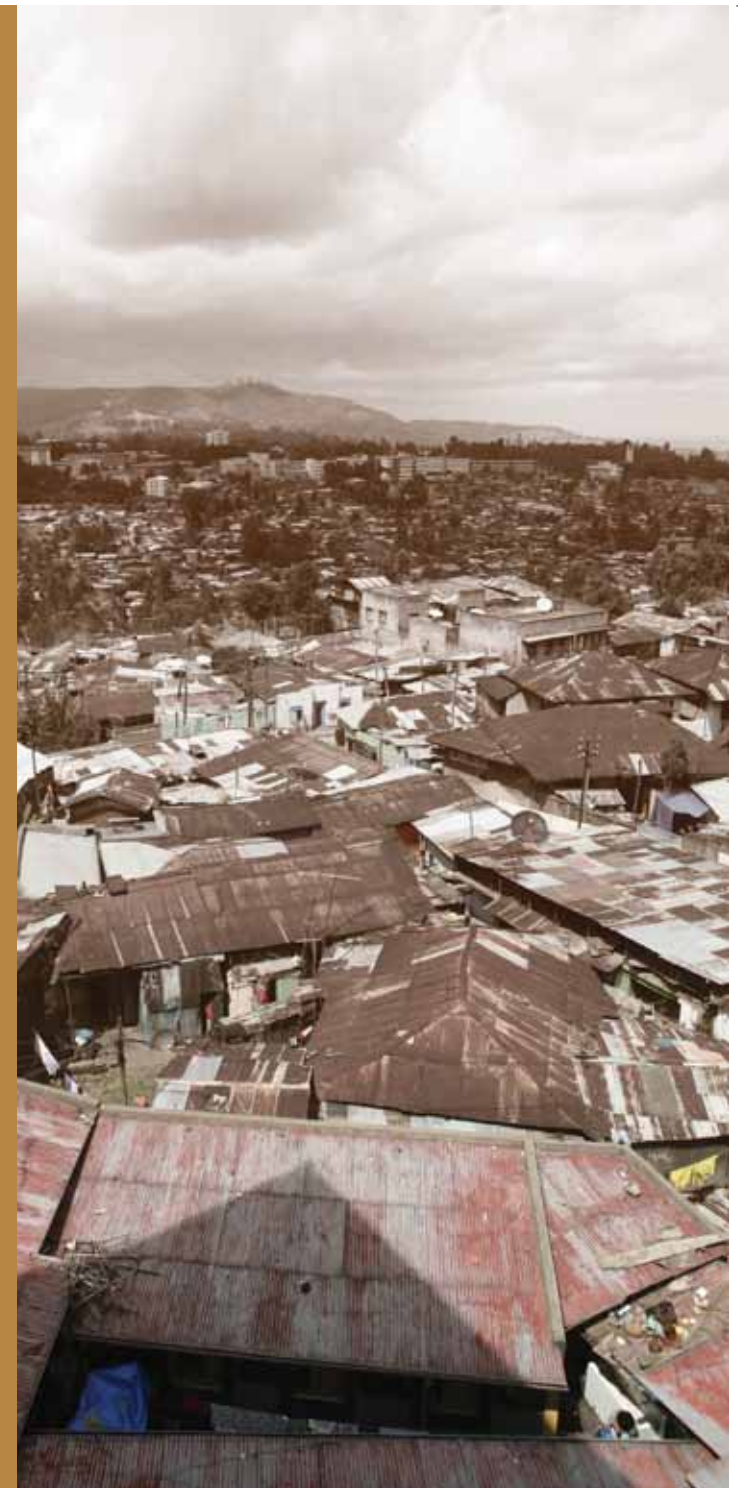
The combustion of solid (for example wood, coal, crop waste and animal dung) and liquid (kerosene) fuels for daily cooking and space-heating purposes is a particularly important source of exposure to indoor and ambient air pollution in urban slums. Especially when these fuels are burned in badly designed or poorly constructed stoves, pollutants such as particulate matter, carbon monoxide, sulphur dioxide and nitrogen dioxide may be released. Exposure to these and other indoor air pollutants has been associated with an increase in the incidence of pneumonia, tuberculosis, chronic obstructive pulmonary disease, low birth weight, cataracts and cardiovascular disease (Fullerton et al. 2008). In the Kibera settlement in Nairobi, Kenya, 86% of households use kerosene for daily cooking, while 11% use charcoal (Karakezi et al. 2008). Women and young children, who spend the major portion of their day in the home setting, are at particular risk of exposure to high levels of indoor air pollution on a daily basis (UN-HABITAT 2008a). There is particular concern for African women who carry their babies on their backs while cooking or tending fires.

Some African cities have made significant strides in recent decades in switching to safer fuels. In Addis Ababa in 1980, for example, wood fuel accounted for 70% of energy used. Following a program to encourage the use of safer fuels, by 2000 wood fuel accounted for only 13% of energy use in the city. Wood was replaced mainly by kerosene and electricity, resulting in improved environmental health and the protection of 50 000 hectares of local woodland

(Shanko and Rouse 2005: 31). In Dar es Salaam, Tanzania, city authorities have improved increased electricity connections from 29% of dwellings in 1990, to 58% in 2003 (Martínez et. al.2008).

While increasing numbers of city residents in Africa may be provided with access to electricity, the cost of electrical appliances may prohibit its uptake in some instances. In Nairobi, Kenya, for example, over 70% of households have access to electricity. Yet many continue to use alternative fuels, or use electricity in conjunction with other fuels such as kerosene and charcoal (UN-HABITAT 2006). In Nairobi's slums, however, only 22% of dwellings are connected to the city's electricity grid; those without access to electricity usually use kerosene (Gulyani & Talukdar 2008: 1922).

The use of unsafe fuels is also associated with other health and safety risks. For example, the use of open fires for cooking and space heating is associated with burn injuries and death, as well as the destruction of homes and property in runaway fires. Incorrectly stored kerosene has also been associated with kerosene poisoning, especially in young children. Amongst the interventions that have been proposed to reduce exposure to indoor air pollution are the provision of safer fuels (such as electricity and other low smoke fuels), improved stoves, improved ventilation, kitchen design and keeping children away from fires (Fullerton et al. 2008).







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### 3.3.2 Industrial Air Pollution

Poor controls and lax enforcement of legislation is partly responsible for elevated emissions from industries in African cities. Often the poorest groups in cities live in closest proximity to industrial settings. As a consequence they suffer a double burden of exposure: from industrial emissions, as well as from the use of polluting fuels for domestic needs (inadequate housing, water, sanitation and energy sources).

### 3.4 Transport & Traffic (road traffic injuries)

In urban settings, there is particular concern about the contribution of road-based transport and vehicle emissions to ambient air pollution (Krzyzanowski et al. 2005). Tailpipe emissions may include particulate matter, as well as gaseous pollutants such as nitrogen dioxide, carbon monoxide, sulphur dioxide and benzene. Unpaved roads have also been associated with elevated concentrations of particulate matter in the air. For example, levels of particulate matter, carbon monoxide and benzene, a known carcinogen and risk factor for hematological disorders, frequently exceed national standards in Nigeria, as well as WHO guidelines (Baumbach 1995). In a study undertaken in Cotonou, Benin, personal monitoring and biomarkers were used

to examine exposure to benzene. The results showed significantly higher levels of personal exposure to, and urinary concentrations of, benzene in city compared to rural dwellers. Determinations of DNA damage in lymphocytes showed an elevated number of lesions in city relative to rural dwellers (Fanou et al. 2006). UN-HABITAT (2008b: 5) has described Dakar's transport system as "dysfunctional". An 8% increase in private cars on an annual basis has contributed to traffic congestion and high levels of exhaust emissions. Estimates from 2000 suggest that car traffic contributes 4.5 million metric tons of carbon dioxide (CO<sub>2</sub>) annually to the city's air pollution problems (UN-HABITAT 2008b).

The nature of transport and traffic (see Box 9) makes vehicle-related air pollution a challenge of particular concern in the African urban setting. Inadequate public transport planning and provision, combined with deregulation, has resulted in the haphazard development of transport systems in many African cities. Rapid urban growth has served to further widen the gap between transport needs and capacity to provide adequate services. For example, the distance between the centre and periphery of the City of Dar es Salaam was 6 to 10 kilometers in 1969. By 1978 this distance had increased to 15 kilometers, and by the mid-1990s to



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### Box 9. Lagos: sub-Saharan Africa's biggest city with traffic problems to match

Lagos, formerly Nigeria's capital before the planned city of Abuja in the centre of the country was assigned the capital status in 1991, now hosts about 10 million of Nigeria's 160 million population – on less than one percent of the country's land (UN-HABITAT 2008a). Lagos, sub-Saharan Africa's most populous city, greets its visitors with (rather than the usual "Welcome to Lagos" sign) a brusque sign reading "This is Lagos" (Packer 2006). This, Packer suggests, is a first indication of the hustle-character that forms an integral part of the continent's second mega-city, stemming largely from haphazard, uncontrolled and unrestrained population and spatial growth with little development in housing, infrastructure, services and livelihood opportunities (UN-HABITAT 2008a). While Lagos was not included in the list of the world's largest cities until 1995, it is now expected to surpass Cairo as the continent's largest city within the next 15 years. The rapid population growth makes Lagos the second-fastest growing African city, after Kinshasa.

Mobility in Lagos is largely affected by the topography and bridge bottlenecks contributing to the high occurrence of traffic congestion, often leading to three to four hours travel for a distance of 10-20km (UN-HABITAT 2008a). The city's efforts to improve the traffic situation included the introduction of Lagbus, Lagos' Bus Rapid Transport system the first phase of which was rolled out in 2008. Projections suggest that up to 10 000 passengers will be carried per hour in each

direction during peak travel times (UN-HABITAT 2008a). Lagos' road network covers no more than 650 km, with a density of 222 vehicles per road kilometre; twenty times higher than the Nigerian average of 11 motor vehicles/road kilometre. Congestion is aggravated by the high occurrence of wheel barrows on the city's roads (Ahianba et al. 2008). With high levels of industrialisation, Lagos's strategic position on the Ibadan-Lagos-Accra highway corridor, as well as the city's port functions, contribute to high levels of road traffic, adding to which is the fact that Lagos is the end-point of most national highways.

Road traffic injuries (RTIs) cause a very large share of the burden of ill health in Lagos. Seventy-seven percent of all admissions into one emergency medical centre in Lagos were due to road traffic accidents (Sanni and Odusanya 2003). RTIs are predicted to become the third cause of disability-adjusted life years lost in developing countries by 2020, and yet little is being done in African cities to reduce this burden. Road traffic injury mortality rate is highest in Africa (28.3 per 100,000 population) compared to other continents. When comparing death per 10 000 vehicles, the contrast appears even more stark, with 1.7 deaths per 10 000 vehicles in high-income countries across the world and more than 50 in low-income African countries (Lagarde 2007).

#### Sources:

Lagarde E. 2007 *Road Traffic Injury Is an Escalating Burden in Africa and Deserves Proportionate Research Efforts* PLoS Med. 2007 June; 4(6): 170.

Sanni AO, Odusanya OO. *Patterns of injury at an emergency medical centre in Lagos. Abstract of 43rd Annual Scientific Conference of West African College of Surgeons, Abuja. 2003; 23 – 24.*

around 30 kilometers. Box 9 gives an overview of transport and traffic concerns in Lagos, Nigeria, illustrating these concerns.

Any investment in the upgrading of roads is usually applied on main roads, leaving minor roads in residential areas relatively neglected and in poor condition. Unpaved and rutted roads may become particularly difficult or even impossible to negotiate during rainy spells. The separation between residential areas and sites of employment in many African cities contributes to the finding that transport is usually a major component of urban household expenditure in African cities (Olvera 2003).

For the most part, public transport gaps have been filled by informal, small-scale entrepreneurs. Vehicles used for informal transport are often old, poorly maintained or unroadworthy. Consequently, they are associated with particularly high levels of vehicular emissions. In some of the poorest cities in sub-Saharan Africa, for example Dar es Salaam, such informal transport systems (for example minibuses, vans, taxis, station wagons, three-wheelers, motorcycles) are the dominant or only option available to citizens (Cervero and Golub 2007; Olvera 2003). In Nairobi around 33% of the total demand for transport is served by informal operators or "matutus". Informal transport service providers usually serve

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the most profitable routes; as a result the transport needs of the poorest are often relatively neglected, further contributing to their social exclusion.

Traffic congestion, noise and elevated injuries and mortality are also important concerns, especially in the light of poor enforcement of road traffic law (Walters 2008). Around the world approximately 1.2 million people are killed on roads every year and up to 50 million more are injured. Most road traffic deaths and injuries occur in developing countries, where the use of motorized transport is increasing. Most of the loss and suffering associated with road traffic deaths and injuries are preventable. Pedestrians and cyclists using roads are at particular at risk.

A study in Kumasi, the second largest city in Ghana, showed that traffic incidents accounted for 16% of all injuries. Relative to other injuries, traffic injuries took a heavy toll in terms of severity of the injury, length of disability and economic consequences (Mock et al. 1999). Traffic accidents in the City of Addis Ababa accounted for 65% of all road accidents in Ethiopia, as well as 21% of fatal accidents and 42% of road accident injuries nation-wide (Berhanu 2003). This has been attributed to a variety of reasons, including inadequate planning and monitoring, disorganized land-use

allocation, poor traffic management, lack of control over access to arterial routes, haphazard road hierarchy, inadequate signage, and markings, limited pedestrian facilities and markers and unruly motorist behavior (Berhanu 2003). Conflict among informal transport operators may also lead to lives lost. In South Africa, for example, fighting among rival taxi owners over the most lucrative urban routes resulted in the deaths of more than 2000 people during the mid-1990s (Cervero and Golub 2007).

In recent years, major efforts to improve public transport have been noted in several African cities. Box 9, for example, gives information on a new rapid bus transport system in Lagos. In South Africa there has been a general recognition of the role of good public transport systems in increasing urban mobility, reducing road congestion, lowering environmental impacts such as air pollution and economic growth. A National Household Travel Survey was undertaken among 50 000 households across South Africa in 2003, to understand the transport needs of households. The study findings contributed to the significant transport interventions implemented in South African cities in recent years, including in the Cities of Johannesburg and Cape Town (Walters 2008). Some of these public transport improvement initiatives are outlined in Box 10.



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### Box 10. Improving public transport in Johannesburg, South Africa

Despite its strong associations with economic growth, environmental quality and public health, public transport has for decades been a neglected issue in South Africa. A particular concern has been the purposeful location during the apartheid era of Black residential areas at considerable distances from centers of work. This racially-based approach to planning has resulted in high levels of expenditure on transport for the poorest urban residents, social and economic exclusion, time loss, environmental pollution, detrimental health impacts and safety concerns. In recent years however, some important advancements have been made in improving public transport in Johannesburg.

#### 1. The Reya Vaya Rapid Bus Service

The Rea Vaya Rapid Bus Transport system was initiated in 2009. Rea Vaya connects downtown Johannesburg with Soweto, a township developed for Black people during South Africa's apartheid years, and purposefully located around 25 kilometers away from the city centre. Rea Vaya is:

- fast
- safe
- reliable
- affordable, and
- accessible to the disabled, the elderly and people with children.

#### 2. Business Express train-Johannesburg to Pretoria

More than 145 000 cars travel the highway between the urban centers of Pretoria and Johannesburg (a distance of around 60 kilometers) each working day. As a result, the highway is congested, with driving speeds as slow as 20 kilometers per hour, and the duration of the journey as much as two hours, during peak traffic periods. For commuters the impact on time and productivity is significant, and air pollution is a serious concern. To alleviate some of the congestion, a morning and

late afternoon luxury Business Express train service was introduced in 2007, which now travels along a route from Soweto through Johannesburg and to Pretoria. The trains offer onboard internet access, beverages and newspapers. The service has been very well received and is popular among its regular users.

#### 3. The Gautrain

Gautrain Rapid Rail Link is a 5-year project (2006-2011) that will span routes between the main Johannesburg airport and the business/residential suburbs of downtown Johannesburg, Rosebank, Sandton, Marlboro and Pretoria. Trains will run at 12-minute intervals for most of the day, and will have an ultimate carrying capacity of 15 000 passengers per hour in each direction. The train service will be supported by around 125 buses that will transport passengers from the Gautrain stations to locations further afield. The Gautrain Project has played a major role in job creation and skills development

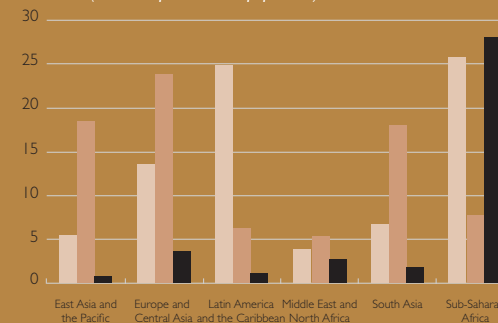
The improvements in public transport in Johannesburg are commendable, and likely to play a significant role in:

- social inclusion
- reducing vehicle emissions
- reducing traffic congestion
- reducing mortality and disabling injuries associated with motor vehicle incidents
- economic development

#### Sources of Information

1. National Road Agency, NI Traffic counts, 2008. [www.nra.co.za](http://www.nra.co.za)
2. Gauteng Department of Public Transport, Roads and Works. Environmental impact assessment for the proposed Gautrain rapid rail link between Johannesburg, Pretoria and Johannesburg International Airport. Volume 1, Executive Summary, 21 October 2002. [http://www.gautrain.co.za/contents/eia/draft\\_eia\\_report/Executive\\_Summary.pdf](http://www.gautrain.co.za/contents/eia/draft_eia_report/Executive_Summary.pdf)

Fig 4: HOMICIDE, SUICIDE, AND WAR-RELATED FATALITY RATES, BY GEOGRAPHICAL REGION, 2001 (Incidence per 100 000 population)



Source: Mathers et al., 2006



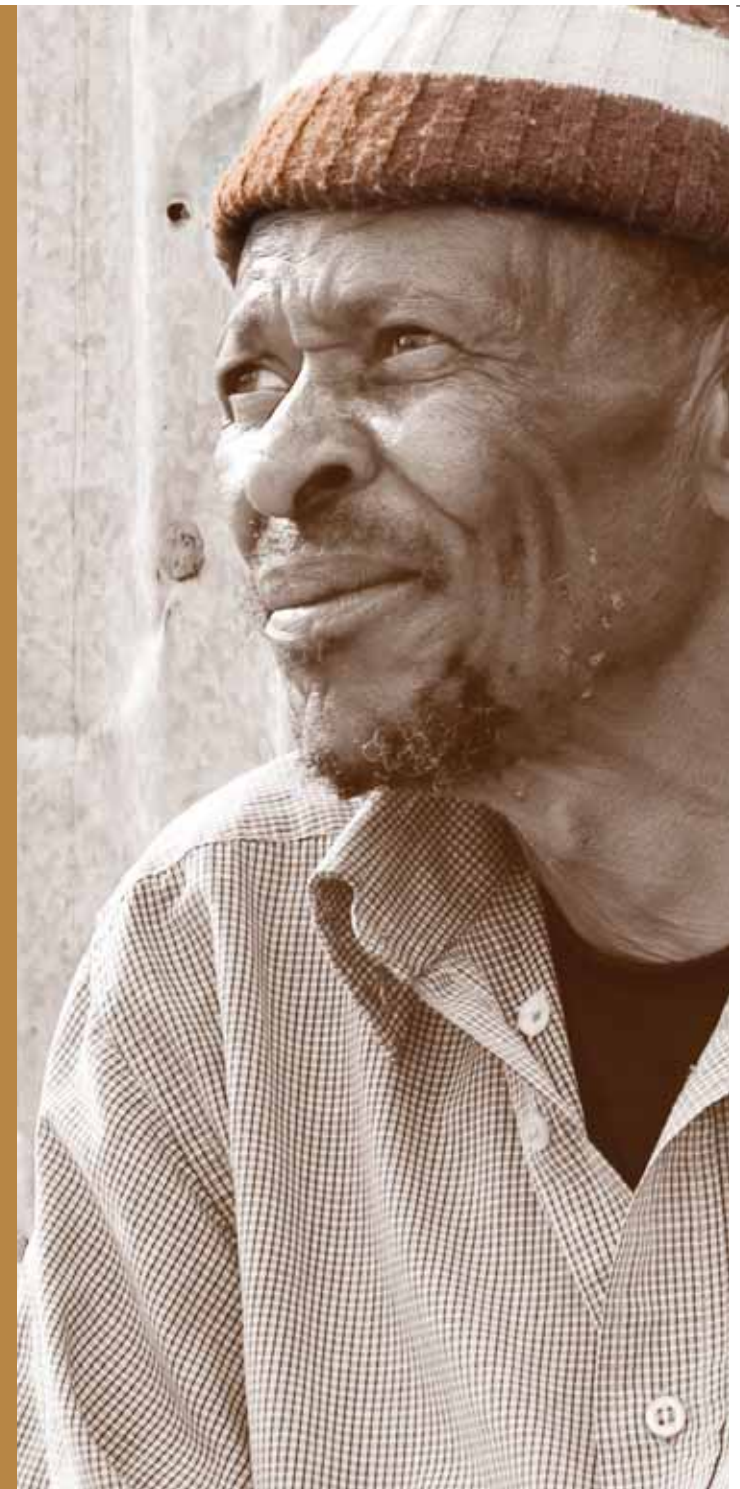
## overview of urbanization-related challenges in selected african cities

### 3.5 Urban Violence

Violence is a major public health problem in developing countries and a particular one in Africa as Figure 4 shows: While deaths from violence are represented in Figure 4, perhaps the biggest burden is the injuries resulting from violence – both physical and mental. Although there are no good data separating out the rural versus urban burden of injury and death associated with violence in Africa, it is likely that much of the burden is in urban areas. Urban violence used to be regularly associated with urban density. It is easy to focus on crowded high density urban living as a source of evil. As Fischer & Baldassare (1975) back in the 1970s argued: “A red-eyed, sharp-fanged obsession about urban life stalks contemporary thought”. This obsession can still be found. In focusing upon crowding, not only are the benefits of dense city-living ignored, but other causes of urban violence, such as poverty and inequality, are neglected. Luckily, a more sophisticated understanding of urban violence and its causes now exists. The WHO presents a model which “explores the relationship between individual and contextual factors and considers violence as the product of multiple levels of influence on behavior” (2002:37). The first level is individual (biological and personality factors). The second is at a relationship level (peers, intimate partners and

family members). The third is community (schools, workplaces and neighborhoods). The final level is that of society (wider societal norms and attitudes). This acknowledgement of the multiple levels of causality has prompted more integrated intervention frameworks. The WHO characterizes interventions in terms of: primary intervention (preventing violence before it occurs), secondary intervention (immediate responses such as medical care), and tertiary intervention (long-term post-violence care such as rehabilitation and integration). While some cities in developing countries which have particularly high levels of violence (e.g. Cali in Colombia) have incorporated such models into their planning, few if any African cities appear to have yet done so.

Comprehensive data on the extent and the determinants of violence in African cities is limited, but the patterns sometimes found between violence and other factors, for example alcohol, are replicated in African cities. The link between violence and alcohol abuse is well documented. For example, in South African cities 44% of the victims of interpersonal violence believed their attackers were under the influence of alcohol, and between 50% and 90% of trauma casualties across three hospitals were inebriated (WHO 2006b). WHO has recently gathered evidence



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### Box 11. Action to reduce alcohol related violence

Reducing the availability and harmful use of alcohol can substantially decrease violence. Violence can be cut by reducing the availability of alcohol through regulating sales outlets and hours and prices; by providing brief interventions and longer-term treatment for problem drinkers; and by improving the management of environments in which alcohol is served. Although the evidence base is promising, studies are largely limited to developed countries.

Regulating the availability of alcohol can lead to reductions in violence. The availability of alcohol can be regulated either through restricting the hours or days it can be sold, or by reducing the number of alcohol retail outlets. Reduced sales hours have been found to be associated with reduced violence. In the former Soviet union in the mid-1980s, strict alcohol regulation, which included restricted hours and fewer outlets, led to a dramatic fall in violence.

Raising alcohol prices can lower consumption and, hence, reduce violence. Alcohol prices can be raised by increased taxes, state controlled monopolies and minimum price policies. Studies

exploring the impact on violence of increases in alcohol prices are rare, but economic modeling suggests that alcohol price hikes can be effective. However, such measures are potentially complicated by conflicts of interest with the alcohol industry and the presence of large informal alcohol markets beyond state control.

Brief interventions and longer-term treatment for problem drinkers reduce violence. Brief interventions and longer-term treatment can help reduce forms of violence. Marital therapy for newly abstinent male alcoholics and their partners have been shown to curb violence.

Community interventions to improve drinking environments can reduce violence. Factors such as crowding, low comfort levels, physical design and poorly trained staff in drinking establishments, and poor access to late night transport can contribute to violence.

*Source: WHO 2009a*

on what works in relation to reducing alcohol-related violence and some of the actions in Box 11 could be implemented in African cities.

One source of urban violence that is often ignored is that of government responses, for example, attacks on street vendors in Mwanza, Tanzania, mass expulsions from Harare, Zimbabwe, and unexplained arson on homes in Nairobi (Wisner and Pelling 2009). Urban violence is also fuelled by the availability of small arms, often left over from conflicts (see table 1). 'There are an estimated 30 million small arms and light weapons on the African continent, of which approximately 80 percent are in civilian hands. It is likely that marginalized areas of Africa's urban landscape will become home to ever-growing arsenals. Africa has around 18 percent of the global burden of firearm deaths – the vast majority of which are homicides. Military-style weapons are reported to have been used in more than a third of the region's homicides, over one tenth of its robberies and a considerable proportion of assaults, threats and sexual offences. Some countries are more affected than others: South Africa, for example, has the highest incidence of armed criminal violence, with more than 19,000 homicides (40 per 100,000) in 2006 and at least half of these resulting from fatal firearm injuries' (UNDP 2007a : 3).

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**Table 1 Percentage of households claiming to own firearms, African capital cities or large urban areas: 2005**

Country	% of households owning a firearm
Nigeria	1.6
Uganda	1.9
Mozambique	3
Botswana	4
Cape Verde	6.5
Zambia	9
Swaziland	10.8
Lesotho	15
South Africa	18.3
Namibia	22.1
DRC	31.1
Burundi	56.3

Source: UNDP 2007a

Risk factors for urban armed violence in Africa include structural factors such as limited education and unemployment, income

### Box 12. Intimate partner violence in Africa

"In Africa the data on the extent of domestic violence and in particular intimate partner violence is very limited. The only national prevalence study on intimate partner violence was conducted in South Africa in 1999. The study found that almost half of all women murdered were killed by their intimate partners, translating into a prevalence rate of 8.8 per 100,000 of the female population aged 14 years and older – the

highest rate ever reported anywhere in the world. Women who died at the hands of their intimate partners were also more likely to have been killed by a legal firearm than women killed by non-intimates: this means that the ownership of a legal firearm is one of the main risk factors in the murder of intimate female partners. The presence of a gun in the home has been shown to influence rates of suicides, accidental shootings, and family murders" (UNDP 2007a:4)

inequality and uncontrolled urban planning. Proximate factors include segregation and urban density, cultures of masculinity, limited faith in public security, informal social organizations such as gangs and militia, and arms availability.

Any action on urban violence must address this broad range of risk factors. The clan/tribal wars that are played out in Africa are mainly in urban areas of for example Somalia, Kenya and South Africa. This identity-linked social conflict requires social and political interventions rather than health sector action. Gender based violence is also a hidden problem (see Box 12).

There is also a strong link between countries emerging from war and the onset of urban violence – usually of a political and criminalized form. As the Small Arms Survey (UNDP 2007a) reminds us: 'It is important to remember that there is neither a simple nor a necessary causal link between urbanization and armed violence'.

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## overview of urbanization-related challenges in selected african cities

### 3.6 Food Security & Safety

Lack of food in Africa has traditionally been linked to rural droughts. But food insecurity in urban areas is now common. Food is often too expensive to buy and shortages have produced urban rioting in Africa in the 1980s with the structural adjustment policies' removal of food subsidies, and in 2008/9 as a result of the global recession and the hike in food prices (Wisner and Pelling 2009).

Growing food insecurity in urban areas of Africa is well illustrated by the case of Nairobi, Kenya. The price of maize in Nairobi rose by 133% in 2008/9 and many of the chronically poor people in Kibera, the largest slum in Nairobi, are facing "an emergency situation" as reflected by the government of Kenya declaring a national food emergency (Concern 2009). This situation in Kenya has been worsened by recent droughts and a poor harvest season. Although Nairobi province and much of its surroundings, especially those to the west of Nairobi, are generally food secure or moderately food insecure, the overwhelming majority of the country has now been declared highly food insecure; overall a quarter of the country's population is thought to be highly food insecure, 3.5 million of whom live in urban areas (WFP 2009). Virtually all food in urban areas is accessed through markets,

and the dramatic increase in food prices hits urban dwellers particularly hard. Urban food supply has deteriorated significantly since late 2007 (WFP 2009). Accompanied by increases in non-food costs of urban life, such as transport and health expenses, chronic food insecurity in Kenya's cities is rising rapidly (WFP 2009). The Kenya Food Security Network (WFP 2009: 5) has recently warned: "this, in combination with rising drinking water prices and water scarcity, could lead to a rise in malnutrition and increased susceptibility to disease, while food riots and levels of crime have already increased" (WFP 2009).

There is plenty of data on child malnutrition in low-income urban areas of Africa – mainly using data from the Demographic and Household Surveys (DHS). These studies show that the degree of child malnutrition in poor urban areas is sometimes as great as in the counterpart rural areas (e.g. Fotso 2007). Unlike most urban health issues where there is little data or research, when it comes to urban nutrition, policy attention has lagged behind the research which has long since demonstrated the problem. In poor urban households about 80% of the household budget is spent on food (about 30% more than in rural areas), so, while urban poverty persists, urban malnutrition will remain.







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Cities are where health problems of modernization meet health problems of poverty. This is demonstrated in terms of nutrition where, in urban households, one can find the coexistence of maternal obesity (as a result of poor diet and lack of physical activity) and child malnutrition (as a result of poverty) (Jehn & Brewis 2009; Prentice 2006)

**Table 2 Difficulties facing urban food traders and possible interventions by city authorities**

Difficulties	Policy Intervention
<i>Transport:</i>	
Poor rural/urban road and rail network	Ensure, through policy dialogue, that rural/urban road and rail infrastructure development plans take account of the needs of urban food supply and distribution.
Lack of parking and handling facilities at urban markets	Locate markets at sites with adequate space for parking, and handling facilities for off-loading and sorting of produce. Indicators: ratio of parking space to size of market and volume of produce handled per period.
<i>Transit costs:</i>	
Tax burden on traders (especially collectors)	Rationalize policy on taxes and levies imposed by local authorities on goods in transit through policy dialogue.
Bribes and delays at security checkpoints	Encourage, through policy dialogue, reduction in number of checkpoints and improved standards of discipline among security personnel.
Lack of well-managed warehouses	Promote private investment in warehouse and storage facilities through providing serviced sites.
<i>Health/environment:</i>	
Lack of effective food quality control	Ensure, through dialogue with relevant agencies, revision and strict enforcement of laws on food quality and consumer protection. Educate traders (especially "street" food providers) and consumers through training and public information campaigns involving the media.
Unhygienic conditions and lack of security at markets	Provide basic shelter, drainage, sanitation, waste disposal and security facilities at markets. Revise, educate traders on and enforce bylaws on hygiene standards at markets.
Lack of trade finance	Support initiatives to improve supply of finance to micro-entrepreneurs through policy dialogue.

Source: Hubbard and Onumah 2001

Action for food insecurity can be to "treat" the shortage of food and resulting malnutrition or prevent it. In terms of treatment, many nutrition interventions are intrinsically geographically targeted. While geographical targeting tends to be administratively simpler than individual targeting and can be politically convenient, research in cities, including those in Tanzania and South Africa (Morris 2001), suggests that where child nutrition interventions are focused on stunting (low height-for-age), targeting by neighborhood may often lead to unacceptably high rates of under-coverage and leakage of benefits to the non-needy.

One response to urban food insecurity rests with improving food supply and distribution. This requires urban governments to improve infrastructure (e.g. to reduce transport and handling costs) and trading practices. Table 2 illustrates what urban governments can do to reduce the difficulties faced by urban food traders. Another more indirect response is to decrease poverty through cash transfers to the poor (which are likely to have other health benefits such as improving mental health).

Urban agriculture as a source of food can be in the form of either subsistence or market gardening (in which the food is sold). There is little data on levels of production or the impact it has on increasing food security and possibly improving nutrition. Food security improves only when households have access to land (Maxwell 2000).

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### Box 13. Lusaka: where the informal takes over the formal

Of the one and a half million who live in Lusaka it is estimated that only 9% are engaged in formal employment (UN-HABITAT 2007: 12).

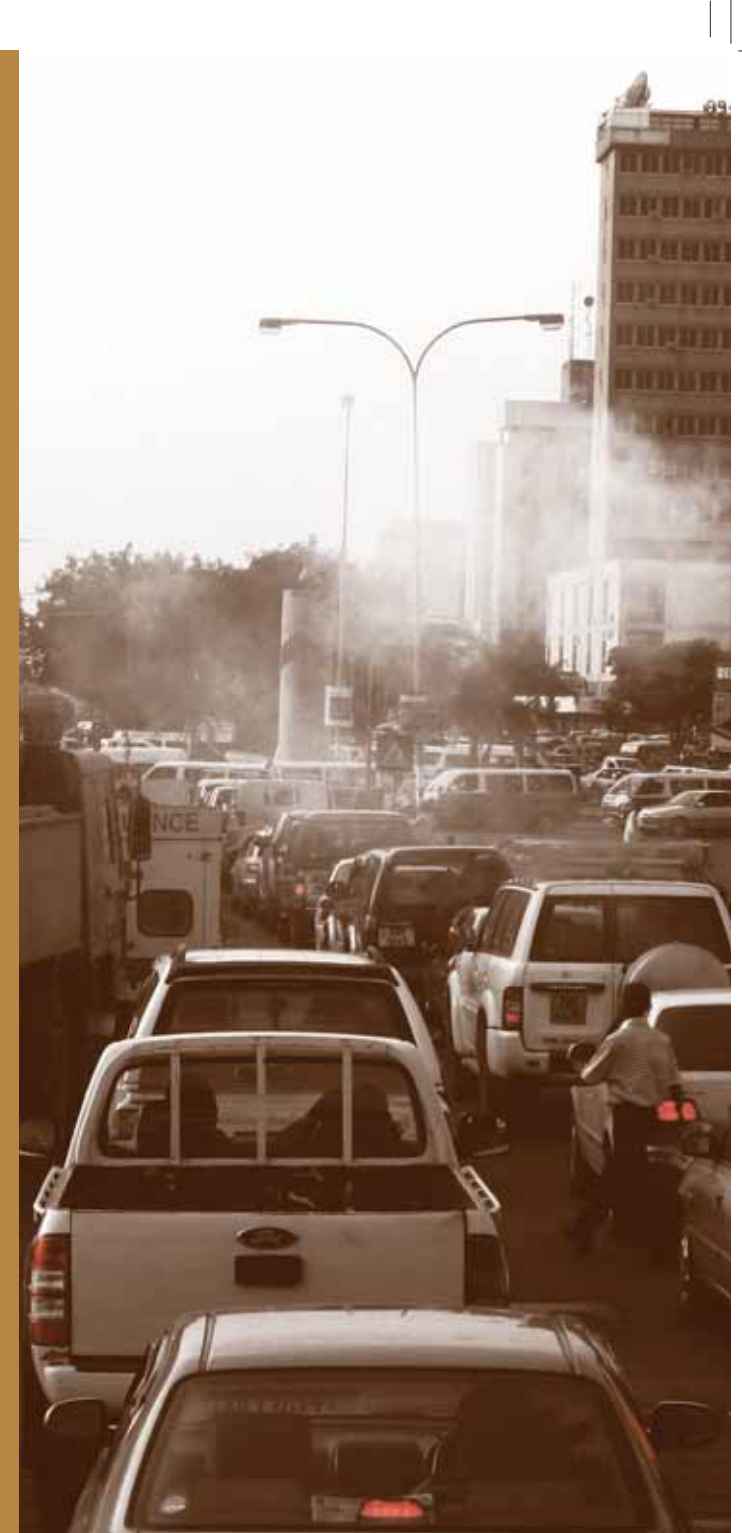
Many of the formally constructed houses in Lusaka are built by government and house public servants. In 1998 a policy was implemented to sell these houses at a loss in order to lessen dependence on the state, yet by 2000 many houses were still owned by the state (UN 2000: 36). Consequently, informal settlements are mushrooming and house approximately 70% of Lusaka's population. While some NGOs do provide micro-finance, the inability of residents to obtain credit based on land ownership is widespread (UN-HABITAT 2007). The city council suffers from a severe lack of funds even in the face of projects such as the Ground Rent Project which attempts to address the deficit by dedicating 45% of all rent collected within the informal areas to development programmes aimed at improving housing and service delivery (UN-HABITAT 2007)

Up to 56% of the water supplied to the city remains unaccounted for due to poorly maintained and monitored infrastructure as well as subversive and criminal connections and/or damage. The formal water supply therefore does not sufficiently meet the demands of the city

and there is a resulting proliferation of shallow wells and boreholes, which supply untreated and potentially dangerous water to residents, as well as pollute the groundwater (UNHABITAT 2007). Due to illegal boreholes and a lack of control by the city, the Lusaka Dolomite aquifer is being overexploited, and mercury levels in ground water are above those recommended by the World Health Organisation. The presence of nitrate-nitrogen and ammonia in the drinking water also indicate seepage from pit-latrines and septic tanks (De Waele et al. 2004).

The Lusaka Water and Sewerage Company serves only 30% of the city's sewage needs, with the remaining 70% of the planned settlements using pit latrines or septic tanks. Unplanned settlements rely almost exclusively on pit latrines with 3% sharing toilets or the surrounding grassland. The latrines in these unplanned settlements are usually inaccessible and therefore not emptied, creating health hazards. The potential health hazards result in seasonal epidemics within the city, most notably malaria, but also typhoid and dysentery.

Although Zambia spends an unusually high (16%) proportion of its government expenditure on health services, the high burden of poor health among the urban poor will continue until the urban environmental conditions are improved and services formalized.



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### Box 14. The aged in cities

Urban slums are often considered as transitory settlements with people staying in a particular slum area for a limited period of time; be it because they move to a healthier environment, return to their area of origin, or because they die. Indeed, areas of eastern and southern Africa have seen high levels of circular migration, with urban residents often leaving the cities for rural areas upon retirement. In the case of two urban slums in Nairobi, African Population and Health Research Centre (APHRC) data (verbal presentations at ICUH 2009) indicate that more than half have lived in their current slum for more than 20 years, and the majority of the aged are men. Many of these older men care for orphaned or HIV-positive children in their household. This is of

particular significance in light of the fact that the same data show high levels of HIV prevalence among the elderly themselves. Hence, these households are faced with multiple burdens of care and support, while the children are at increased risk of losing their only remaining caregiver due to natural death, AIDS or other diseases associated with old age. No data is available on the HIV status of the children themselves. With the experience of having lived in the area for a decade or more, and being subjected to a high need of healthcare for both themselves and the household's children, the aged women and men have contributions to make to the improvement of health systems catering for them and the children. More research is needed on the roles and responsibilities of the aged in low-income urban areas of Africa.

### 3.7 Health

Currently, more than 70% of all deaths in Africa are from communicable diseases. The five leading causes of the burden of disease in the African region, in 2004, were HIV/AIDS, lower respiratory disease, diarrheal diseases, malaria and neonatal infections (see Table 3) (WHO 2008:45). Tuberculosis, the eighth most common cause of death, is on the increase as a co-infection with HIV. Deaths of African children younger than five years of age continue to be the highest in the world (43% of all deaths for that age category in 2003), while the average life expectancy of African men and women is only 48 and 50 years of age respectively (Aikans and Marks 2007; WHO 2006a). However, there are some successes such as a 91% reduction of deaths due to measles between 2000 and 2006 (World Bank 2009), and the

Table 3 HIV Prevalence in Sub-Saharan Africa

REGION	Adults (15+) and children living with HIV	Adults (15+) and children newly infected with HIV	Adult (15 – 49) prevalence (%)	Adult (15+) and child deaths	No. of Orphans
Sub-Saharan Africa	22.0 million	1.9 million	5.0	1.5 million	11.4 million
World	33.0 million	2.7 million	0.8	2.0 million	15.0 million
Africa's Burden	66.7%	70.4%	NA	75%	76%

(World Bank 2009)

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near elimination of onchocerciasis, leprosy, polio and guinea worm (WHO 2006a). It is also important to note that in spite of limited information on disease prevalence, morbidity and mortality rates, we have enough evidence to say that the burden of disease varies across and within countries (Aikans and Marks 2007).

HIV/AIDS remains a serious problem across Africa even though HIV prevalence is stabilizing in some countries (most notably Namibia, Rwanda and Malawi). In Southern Africa, the epidemic is still severe, with 35% of all new infections and 38% of all AIDS deaths recorded.

*(World Bank 2009)*

The impact of the disease is particularly severe for women and children. Women account for two-thirds of people living with HIV, and African children account for 90% of all children under the age of 15 years being infected (World Bank 2009). This has implications for households where individuals in their most productive years are too ill to work or die prematurely, leaving more than 12 million orphans behind. Prevention strategies aimed at the groups most at risk to contract HIV are critical, while voluntary testing and antiretroviral treatment can save lives. However, limited internal resources must be used to address a number of competing public health issues, while finding external support is very difficult in the current economic climate.

*World Bank (2009)*

Communicable diseases increase with population density and urban dwellers, mostly poor and living in deprived conditions, are particularly at risk for contracting infections such as tuberculosis. In 2005, tuberculosis in Africa was declared a public health emergency in the context of 500 000 annual deaths (25% of all preventable deaths) and 2.4 million new cases each year (100 out of every 1000 people are annually infected in sub-Saharan Africa) (WHO 2006a). Tuberculosis and malaria are increasingly complex to treat because of an increase in drug resistance in humans and an insecticide resistance in mosquitoes, both difficult and expensive to detect.

With 90% of malaria deaths occurring in Africa, this preventable and treatable disease continues to present a big challenge. The impact of malaria illnesses and deaths on African economies has been linked to economic slow down. Malaria, HIV/ AIDS, tuberculosis and other communicable diseases form a serious barrier to poverty eradication across the continent. If not managed, many poor families fall into deeper poverty (WHO 2006a).

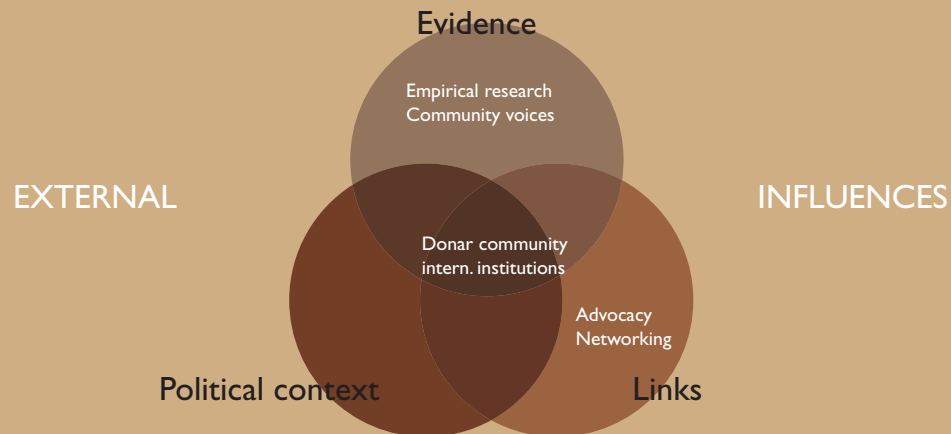
The focus on preventing and treating the more traditional communicable diseases such as HIV/AIDS, malaria and tuberculosis presents a challenge to governments in the light of a number of emerging infections such as N1H1 flu virus. Many African countries are not ready to detect and respond to such epidemics in time.



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### Box 15. Getting urban health research into policy

The amount of evidence of urban health problems in Africa is growing but it is generally not being acted upon. Improving health conditions of urban poor communities requires concerted efforts by all stakeholders, including local and national governments, the donor community, non-governmental organizations, the research community, and those holding political power – while taking account of the views and needs of community members. In strategic cooperation with one another, researchers and policy makers can identify key challenges to urban health and policy windows emerging from these. For researchers this implies not only the collection of high-quality, credible evidence, which is grounded in the views and requirements of specific communities. It also calls for strategic communication of this evidence to those who need to hear it: policy-makers, donor agencies and community members. Establishing linkages between these stakeholders early in the process is key. Merely presenting the challenges that policy makers and local communities face, can easily lead to paralysis in those who are expected to develop responses. Synthesising research with policy requirements by presenting practical policy options, which are rooted in high-quality evidence, provides opportunities for improved responses to urban health challenges. This will require researchers to understand the links between knowledge and practice (as shown below) and to gain additional communication skills and to cultivate a demand for evidence on the part of policy makers.



Linking urban health knowledge and practice (adapted from Court & Young 2003)

Although there are gains in preventing and treating many infectious diseases, deaths are still unacceptably high. In addition to these, death rates from chronic non-communicable diseases due to exposure to industrial waste, pollution and changes in lifestyle (diet, exercise, smoking and alcohol use), as well as injuries are increasing and expected to rise rapidly with urbanization, creating a “dual burden of disease” across the continent. Although non-communicable diseases such as heart disease, different types of cancers, stroke, hypertension and diabetes are traditionally associated with affluence, new studies show that their prevalence is as high in low-income countries as in high-income countries. According to Unwin et al (2001), “age-specific death rates from non-communicable diseases are currently higher in adults in sub-Saharan Africa than in populations in many Western industrial countries”. There is also some evidence that deaths and illness from cardiovascular disease occur at a younger age during peak productive years in developing countries (Magnusson 2007).

Together with injuries, non-communicable diseases represented 27% of the total burden of disease in Africa in 2001 (WHO 2006a). These diseases receive very little attention from African governments, in spite of evidence that they are on the rise, because the emphasis is on more common problems such as HIV/AIDS, malaria and tuberculosis. With effective prevention plans in place ten additional healthy life years could be added to people in the African region (WHO 2006a).

### 3.8 Diseases of Lifestyle

The main problems associated with changes in lifestyle and behavior are an increase in tobacco and alcohol use, lack of exercise and changes in nutrition (more processed and refined food, an increase

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in high-fat and high-sugar diets, less fruit and vegetables, less complex carbohydrates and fiber). Tobacco use should receive special attention because there is ample evidence that the future epidemic of tobacco-related diseases will be located in the developing world where, in 2000, half of the 4.8 million tobacco-related deaths occurred. From 1970 to 2000 there has been a 50% increase of tobacco use in the developing world, particularly in countries without tobacco control policies (Magnusson 2007). Data from 16 Demographic Health Surveys (DHS) of men aged 15-54 years and women aged 15-49 years in 14 African nations indicate that tobacco consumption is low in West Africa (8% in Nigeria), moderately high in Southern Africa (18% in Namibia), and high in East Africa (Kenya with 23%). Madagascar is the highest with 27% tobacco users. Urban men, less educated and in lower status jobs are the highest users of cigarettes; while women, although smoking less, show the same social patterns of use (Pampel 2008).

There is an increasing recognition of the importance of social, economic and physical environments as determinants of health and well-being (WHO 2007). The most exposed populations to bad urban environments are usually also the poorest, living in underserved inner city or slum areas.

With urbanization the double burden of disease will increase if no effective health systems and policies are put in place to prevent, detect and treat communicable and non-communicable diseases. African countries on average spend only 4% of their GDPs on health as compared to 7% in the Region of the Americas and the European Region (Aikans and Marks 2007). In addition to health inequities, lack of clean safe water and proper sanitation plus healthy housing (with electricity, piped water and insecticide-treated bed

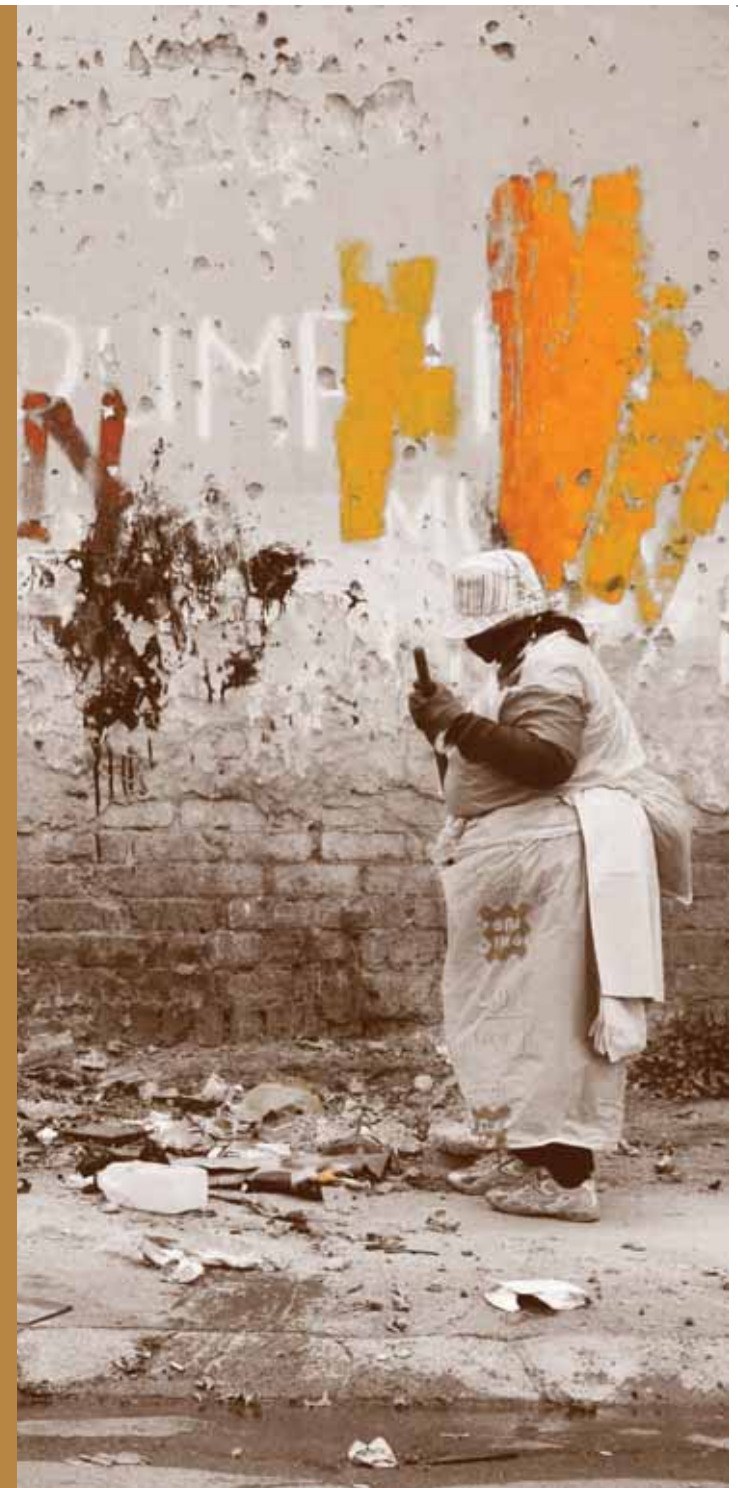
nets) will remain a challenge to many African governments.

### 3.9 Migration & Xenophobia

Although natural increase within cities in Africa has contributed to more urban growth than in-migration since the 1980s, migration still forms an important dynamic in urban health. This is due to: the remittances between rural and urban areas and the impact they have on food security and health-seeking behavior; the social mixing and whether this provides social support or exclusion (and the resulting impact on mental and physical health), and the transmission of communicable diseases.

It is important to separate international migration from national migration. International migration includes refugees. Africa hosts 30% of the world's refugees. However, internally displaced people (IDPs) can also fuel migration into African cities (e.g. political IDPs in N'djamena, Chad and social and economic IDPs in Harare, Zimbabwe and Johannesburg, South Africa). Migrants can be illegal or legal. This distinction can also affect their health as it impacts on access to services and sense of mental and physical security. Migrants can also be temporary or permanent, which again can influence the demand on health services.

Migrants in cities have increasingly been associated with xenophobia on the part of the indigenous population: "the increasing ethnic diversity in the cities of developing countries experiencing international migration, some of them with little or no multicultural tradition, tends to produce anxiety and fear among local residents. Nowadays migration takes place at a very fast pace making the assimilation process more difficult than in the past. Though only quite a small percentage of the urban



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### Box 16. Dakar: An improved physical environment but what about the social environment for women?

With a population of around 3 million Dakar has a quarter of the country's inhabitants and is "arguably the place where all potential but also all risk comes together" (UN-HABITAT 2008b: 6).

Fifty-five percent of Dakar's population is younger than 20 years (UN-HABITAT 2008a: 9), which brings with it its own challenges for the city's administration. Dakar comprises three administrative regions: Dakar, Pikine and Rufisque, with greatly differing levels of development between these three. UN-HABITAT (2008b) has identified two distinct groups of inhabitants across these regions: those in the "regularised city" and those in the "other city". However, even in the "other city" levels of physical infrastructure such as piped water, sanitation, waste collection and electrification are at higher levels of provision than many other African cities.

Perhaps partly as a result of relatively favourable environmental health conditions and a low HIV prevalence rate, Senegal's life expectancy at birth is among the highest in the region: males and females have a life expectancy at birth of 57 and 61 years respectively (WHO 2009b). The WHO has noted other positive developments in Senegal's health sector. The rate of underweight children under the age of five years and the mortality rate of under five- year-olds has decreased over recent years, the latter standing at 114 per 1 000, compared to the WHO Afro- regional average of 145 per 1 000. However, there is a strong indication of gender bias against women in many of the health indicators. Maternal mortality rate in Senegal remains high at 980 per 100 000 (WHO Africa regional average 900/100 000). Skilled personnel attend only 52% of all births. And despite the low HIV prevalence rate, an increasingly high number of women are affected. In a span of 15 years, the number of infected women increased four-fold, while infection rates among men has not even doubled in the same time period (UN-HABITAT 2008b: 17). Discrimination against women, rooted in patriarchal policies and judicial systems, is common in the education sector, leading to a heightened illiteracy rate among women, which eventually places a strain on child health and women's health initiatives (UN-HABITAT 2008b: 16; UN-HABITAT 2008c: 24-25). During 2001/02 only about 67% of school-age girls in Senegal were attending school, compared to a rate of 76% among boys (UN-HABITAT 2008c: 25). The child mortality rate has been observed to be three times higher among illiterate mothers than those with at least basic education (UN-HABITAT 2008b: 16).

Women are also particularly affected by violence of all forms, including (i) physical violence, sometimes leading to death; (ii) sexual violence, including incest; (iii) psychological violence, including deprivation from resources; (iv) traditional practices such as female genital mutilation and forced marriage; and (v) sexual harassment at the work place. Great discrimination in the formal sector economy, with a slight increase in women in the workforce (UN-HABITAT 2008c: 18), has led to women playing a greater role in the informal economy, particularly in urban centres: Women represent approximately 60% of all engaged in the informal economy (UN-HABITAT 2008c: 18). Dakar in particular has seen a marked increase in the number of woman-headed households; 27% of all households in urban centres are now headed by women (UN-HABITAT 2008c: 18). However, UN-HABITAT (2008c: 18) highlights how this increase has little to do with increased emancipation of women in society. For instance, 48% of all woman-headed households are run by widows.

population, the presence of migrants is frequently overestimated in the perception of local residents. International migrants are easily not only recognizable; they are often spatially concentrated, while also tending to agglomerate in specific economic sectors" (Balbo and Marconi 2006 : 714).

### 3.10 Climate Change

The activities of human beings have resulted in the emission of large amounts of carbon dioxide and other gases over the past half-century. These releases are now affecting the earth's climate, with serious implications for the future of human kind, especially in Africa. Scientists who formulated the Third Assessment Report (2001) of the Intergovernmental Panel on Climate Change (IPCC) have warned that the global average surface temperature has increased by 0.6° over the past century, and that global emissions of carbon dioxide continue to increase. The 1990s has been the warmest decade ever recorded, and 1998 has been the warmest year. Some areas have experienced increased rainfall, while droughts in Africa have become more frequent and intense. Because of the large numbers of people concentrated in cities, the public health impact of heat waves and other climate-related events may be particularly severe. Many of Africa's major cities are located along the coast, potentially placing millions of people at risk as global warming leads to sea-level rises. These include the cities of Accra, Durban, Freetown, Lagos, Libreville, Luanda and Maputo. In Africa, 9% of the urban population is estimated to live in a low elevation coastal zone, and is therefore at elevated risk of flooding.



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## overview of urbanization-related challenges in selected african cities

In some instances, the poorest people inhabit the lowest lying land (UN-HABITAT 2008a). In Dakar, for example, the wealthiest people live on the relatively high and non-erosive Cap Vert peninsula, while recent arrivals and the poor live in lower-lying parts of the city. In cities where storm-water drainage systems are inadequate, or inadequately maintained, the risk of flooding is elevated. The existence of pavements may also prevent rainwater from draining into the ground, further contributing to flooding. In times of both drought and flood, the availability of clean drinking water is usually a primary problem, which in turn could lead to serious outbreaks of diarrheal diseases, including cholera (Ochoa et al. 2005). The vast amounts of concrete, bricks, stone and asphalt used in cities absorb heat from the sun, leading to a "heat island" effect, which may exacerbate heat-related health outcomes. High temperatures coupled with air pollution from industrial and vehicle emissions may increase respiratory health effects. In cities with temperature inversions, the formation of smog could occur, reminiscent of the deadly London Smog of the 1950s. In African cities, there is particular concern over the large proportion of slum dwellers that do not have access to electricity or other safe fuels for cooking. Instead, polluting fuels such as coal and wood are used on a daily basis, making a major, or even the predominant, contribution to urban air pollution.

While there is uncertainty regarding the precise health consequences of climate change, predictions point to fatal heat stress or hypothermia, increasing death rates from heart and

respiratory diseases, changing patterns of malaria and dengue fever. An important concern is that many African cities do not have the infrastructure and mechanisms, such as effective early warning and storm-water drainage systems, to protect their citizens during adverse weather conditions. African cities, and slums within African cities, are therefore expected to be amongst the worst affected by a rise in sea level or extreme weather events associated with climate change (UN-HABITAT 2008g). The consequences of a low ability to cope with adverse weather events were tragically illustrated in West Africa during August and September 2009. Senegal and Burkina Faso, in particular, experienced the heaviest rainfall in decades. In Ouagadougou, the capital city of Burkina Faso, a dam wall was breached, leading to extensive flooding. Bridges and roads were destroyed, and the electricity supply was affected. The Central University Hospital was damaged and critical emergency services were forced to close, including renal dialysis services, because of damage to 12 dialysis machines. Soon after flooding began, increases were observed in the levels of diarrhea and malaria. At the time of finalizing this report, no major disease outbreak had yet occurred, but there was heightened concern over further increases in diarrheal diseases and malaria, as well as hemorrhagic fever and other communicable diseases. As a contribution to averting negative health outcomes, WHO coordinated a multi-agency health response, including the provision of emergency and diarrheal disease kits and the institution of surveillance activities in Burkina Faso (<http://www.who.int/countries/bfa/en/>)



## overview of urbanization-related challenges in selected african cities

### Box 17.A micro-lending scheme in Nairobi

The Jamii Bora (JB) Trust was founded in 1999, and its mission is “to assist its members to get out poverty and build a better life for their families” (2). Membership of the JB scheme has risen from 50 at the time of its launch to more than 130 000 (4). The main JB programme is a micro-finance scheme which requires that members open a savings account. In order to qualify for a loan, money must be saved in the account. Members are then permitted to borrow twice the amount saved. Loan repayments and interest are deducted from the savings account, and members are required to replenish the corresponding amount. Monitoring systems are in place to quickly detect defaulting clients, who are reminded to make the necessary payments. Those in dire need are supported by a specially established “solidarity group” (3). Special loans are also available to members with a good track record for repayment. These include, for example, loans to pay for school fees, housing and property loans, as well as for water supply schemes. JB also has life and health insurance which benefits all members. The health insurance covers hospital admission fees for members and families at selected hospitals, and includes medication for HIV/AIDS.

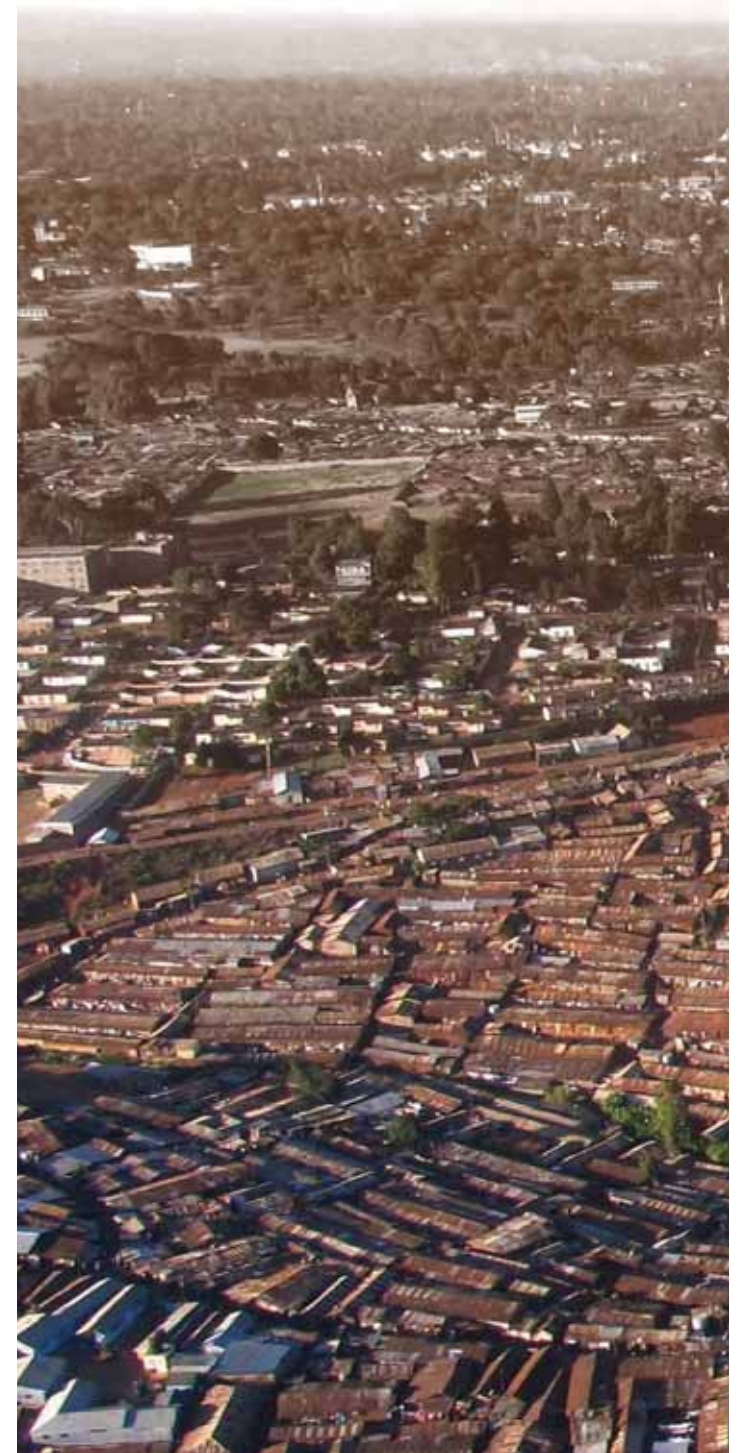
In 2002, JB acquired 293 acres of land in Nairobi to establish an ecologically friendly town called Kaputei. On this land JB aims to build 2000 houses and allow its members an opportunity to acquire loans and buy the properties. Approximately 10 000 people from slums in Nairobi are expected to be housed in Kaputei.

After nearly a decade of operation, the JB programme is flourishing, and is an important means of empowerment for residents of the slums

of Nairobi. However, the programme has had to be adapted in several ways to respond to the reality of life for slum dwellers. It has been recognized for example, that JB members find it particularly challenging to make repayments at certain times of the year. During winter for instance, the number of visiting tourists declines. In addition, exports of cut flowers, fruit, vegetables and coffee to Europe and North America is at an annual low, cutting household incomes significantly. January, when members have to pay school fees, is another challenging period in terms of repayments. Throughout the year, there are also challenges when an income is lost due to illness. The school fee loans and health insurance programmes were instituted as a response to these realities.

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## the way forward

### SECTION 4: THE WAY FORWARD

#### Back to urban basic services?

A large proportion of urban African residents live in conditions that are harmful to health. For many this means not having access to even the most basic housing elements: secure shelter, safe water in sufficient quantities, sanitation and safe fuels. These conditions place them at risk of a range of preventable diseases (diarrheal disease, acute lower respiratory infections and unintentional injury). In addition, many urban residents in Africa, especially the poor and marginalized, also have to bear a high burden of violence, risks associated with

#### Box 18. Heterogeneity in the city

As potentially the main determinant of urban health, it is important to recognize that analyses of urban poverty have become more sophisticated in the last decade and that our deeper understanding of urban poverty has implications for health related action. The key theme of the more sophisticated analyses is heterogeneity, both spatial and temporal. In terms of spatial heterogeneity, the concept of a homogeneous mass of urban poor residing in slums is increasingly being questioned. Montgomery and Hewett (2004), for example, found in their analysis of urban data from 85 Demographic and Health Surveys (DHS), that “poor” neighborhoods were not uniformly poor. One in ten of a poor household’s neighbors were relatively affluent (i.e. in the upper quartile of living standards as measured by consumer durables and housing quality). This fact of some urban poor households being embedded in mixed communities means that if health programs are to reach the poorest they also have to cover mixed neighborhoods. This has pros and cons. As Montgomery and Hewett point out, mixed communities may have more resources (e.g. social capital) to provide health volunteers, to disseminate positive health messages, to lobby for services for the community, etc., but the richer residents may siphon off certain provisions, away from the poorest. This phenomenon of mixed communities also means that municipal authorities cannot target “poor” communities only, if they are to reach all poor households.

This will create a need for even more resources. However, this is not a problem if action is targeted at households or individuals anyway. For example, means-tested social safety nets are rarely spatially determined although, interestingly, Johannesburg city authorities are considering doing just this, as the cost of assessing individual households is so high that they are attracted by a more blanket approach which declares certain areas to be worthy of social protection like child benefit, etc.

In terms of temporal heterogeneity, a long-standing analyst of African urban poverty, Mabogunje, reminds us that “the urban poor should not be considered as a homogeneous group but as a social underclass undergoing continuous differentiation” (2007: 3). He uses the three-way categorization of urban poor: new poor (recently retrenched), borderline poor (unskilled, employed but below poverty line), and the chronic poor (lasting at least five years and often caused by the process of transition from rural to urban rather than specific urban conditions). In addition we know that urban poverty is volatile: people move in and out of poverty while often remaining in the same geographical location. How does health differ among these groups in different cities? To date, there is no systematic research on this question in Africa. We need longitudinal research to study temporal heterogeneity’s effect on health, and there is very little investment in such studies.

Source: adapted from Harpham 2008





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adverse weather events, air pollution from inadequate transport and poor traffic management. In the 1980s there was a focus on the provision of urban basic services, supported by international agencies such as UNICEF and UNDP. This simple, direct approach seems to have fallen out of fashion and has been replaced by various concepts over time such as community participation, good governance and environmental sustainability. There is an argument for a return to the concept of the obligation of local government to provide key services to all its citizens and to not let government “off the hook”.

### **But beware of blueprints or “one size fits all”**

Although there is, in general, a lack of good disaggregated data to illuminate the health problems in African cities, what does exist suggests that there is a large degree of heterogeneity across cities (poverty, health, housing, culture, etc.), even at the micro-spatial level (see Box 18). This means that planning for improved urban health needs to take into account this variation and to prioritize on the basis of need and cost-effective actions. For example, the provision of safe water and sanitation can prevent so much of the burden of disease faced by so many.

### **Important Underlying/Explanatory Factors**

Poor planning, unsound governance, a lack of democracy and corruption lies at the heart of many of the adverse living and health conditions faced by African urban residents;

However, it is important to bear in mind that the urbanization process in Africa is disassociated from the economic development process that accompanied the urbanization process in Europe and the USA;

The managers of African cities therefore face unprecedented challenges, further compounded by the pace and scale of urbanization in many parts of Africa;

### **Urbanization is here to stay, and has positive as well as negative effects**

Urbanization is fuelled by both rural-urban migration and natural increase within the city. There is no example of any country successfully reversing the trend, so the focus needs to be on maximizing the positive elements of the process instead of stopping it. Remittances from cities help support a wide network of people in both rural and urban areas, and the urban informal sector supports the economic engine of cities as a whole.

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## the way forward

### **Rural-urban links**

There is increasing recognition of the interlinkage of rural and urban health systems, and with recent increased movement of populations in Africa due to economic reasons and conflict, this is important to bear in mind in any health systems planning. Registration-based health care provision in low-income urban settings is likely to exclude many parts of the population, and so a more flexible approach is probably needed in health posts and centers. Health user fees can be an obstacle to poor urban people just as they can to poor rural people. The recent announcement of international aid to abolish user fees in many of the poorest countries in Africa should ease this situation.

### **Urban poverty as a national issue**

Urban poverty is at the heart of poor urban health and the urban development agenda needs to be prioritized in Africa. Unless slum development is tackled by investment in improved physical infrastructure such as water, sanitation, waste disposal energy and public transport, the urban health problems that we see in the case studies presented in this paper will continue to grow along with the slums. As the Rockefeller Urban Summit in 2008 argued: urban poverty should be seen as a national and international security issue,

and thus the urban agenda overall needs to be elevated into broader national and international development and security agendas.

### **The urban poor suffer a double burden of chronic and acute diseases and bear an “urban penalty”**

Low-income populations in African cities face a double burden of the traditional diseases of poverty (infectious diseases often associated with high densities and poor physical infrastructure, and malnutrition) and the chronic diseases of modernization (hypertension, heart disease, diabetes and mental ill-health). They also bear an urban penalty compared to their rural counterparts. This penalty arises from a dependence upon a cash economy and resulting food insecurity and a harsh, crowded physical environment. Any program to improve the health of the urban poor must take this epidemiological pattern into account. Injuries and deaths from road traffic accidents and violence also feature significantly in the epidemiological profile.

### **Legality and security of tenure are necessary for better health**

While the large majority of the urban poor in Africa are illegal, unrecognized and under-served, both physical and mental urban

health problems are likely to increase. The threat of eviction and the frustration at the lack of adequate services can fuel violence and insurrection within low-income urban populations. A program of formalization of all slums is necessary in all cities. Inclusive urban governance may fall outside the scope of the health sector, and yet is crucial for health, and thus actors in the health realm need to reach beyond it to other sectors.

### **Intersectoral action to address inequalities**

Large economic and health inequalities are found within African cities. With evidence that relative poverty and inequality are better predictors of the overall health of a country (Wilkinson 2009) than GDP, there are strong arguments for more attention to be paid to reducing such inequalities. Any action in this direction needs to be intersectoral. This is an old call and goes back to the Alma Ata primary health care Declaration of 1978, but there has been little progress in “joined-up government” for better health. The Healthy City movement tried to get health on the agendas of all sectors of local government, but gained little momentum in Africa because of limited resources and capacity. The lack of capacity at local government level is one of the largest obstacles to improving urban health in Africa.



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### **A role for civil society and the private sector?**

In other continents (Latin America and Asia) the role of civil society in urban development is more developed, and corporate social responsibility on the part of the private sector has been tapped to benefit the urban poor. There are relatively few documented cases of this kind of partnership in African cities, but such initiatives can be valuable, especially when supported by both international agencies and local governments.

### **Data needs**

Another call that we have heard for many years now is for the provision of disaggregated city data that reveals the differences in health in various parts of the city. While there has been some progress on this front, all too often data sets are from surveys that only cover the urban poor, and thus there is no comparative picture provided. Stark contrasts are powerful political tools, and can prompt action on the part of local politicians and government officials who do not wish to see their part of the city underlined in red due to very high mortality or morbidity characteristics. Community groups in several cities in India have been successful in prompting action as a result of maps showing where health is particularly bad in the city. Some urban health

problems are better covered than others. For example, there is a relatively large amount of data on food security and nutritional status of the urban poor. While other topic areas, especially the diseases of modernization such as chronic diseases and poor mental health, need much more data to guide action. There is also a need for investment in longitudinal data collection which can detect trends over time. Very few demographic surveillance surveys include cross-sections of urban populations. The work of the African Population and Health Research Centre in Nairobi is a notable exception, and their model, which has produced detailed data on slums in Nairobi, could be replicated elsewhere. Although resources are limited, a minimum set of basic health indicators could be collected across a city once a year. The HEAD study from Johannesburg is another example of this kind of investment which has been translated into action at the local community level (see box 23). In addition to certain topics being under-researched, some groups of the population are under-researched. An example is the health of informal sector workers (see Box 17).



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### Box 19. An African city with an unusual amount of urban health research

Highlights of urban health research in Nairobi slums	Recommendations
Heterogeneity within the slums: Ratio in consumption b/w top 10% and bottom 10% 14:1 (national 20:1)	# Context special policies, paying attention to intra- slum heterogeneity
Married couples with children economically worse off and have higher levels of food insecurity than single person households	# Improve levels of HIV testing
82% of slum dwellers born outside of slum. Migrants from outside Nairobi: men seek work (70% of migrants from rural areas); women seek services (45% of female migrants from rural areas)	# Gain greater insights into sexual behaviour # Improve livelihood opportunities
High maternal mortality rate (708/100,000)	# Improve sanitation
Children of migrant mothers 1.7 times more likely to die than indigenous residents' children	# Focus health intervention on onset of cold season # Introduce pension fund
Low levels of under- 5 mortality (141/1,000 live births)	# Avoid age discrimination
Main causes of under- 5 child death: pneumonia (31%), diarrhoea (17%) (verbal autopsies)	# Include awareness of the aged in health care workers' training
Low use of health facilities for child illness (only 43% of sick children taken to health care facilities)	# Include the aged in HIV voluntary counselling and testing
Early sexual activity: By aged 15 14% of males and 5% of females had engaged in sexual intercourse, by age 20 53% of males and 52 of females	# Increase "retention" of migrants # Track out- migrants
Less than 5% of men and women tested for HIV status	

Source: APHRC verbal presentations at ICUH (2009)





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### Box 20. Informal sector workers' health: need for more research

The informal sector is defined as those in self-employment, those working for firms of fewer than 5 employees, workers with no registration, owners of a family business with fewer than 5 employees, and family members working in a family business without a specified wage. About 70% of employment in West African cities is informal (Mabogunje 2007). Many such workers are exposed to particular health hazards when scavenging, balancing on precarious scaffolding,

recycling batteries, weaving in between traffic, squinting in poorly lit rooms, etc. There is a dearth of systematic information about the occupational safety of informal sector workers. One of the founders of the International Labor Organization's (ILO) urban group, Dr Edmundo Werna, has said that "What seems to be missing is a whole approach to 'occupational safety and health in urban areas' as such" (personal communication 2007).

Source: adapted from Harpham 2008

### Box 21. Need to move from vulnerability to resilience?

In the last decades urban health has been approached from a concept of ill health. (This negative condition is often called vulnerability, but this term should not loosely be used interchangeably with ill health, because vulnerability is a potentiality, whereas ill health is a current condition. On the other hand, there is a relation: ill health clearly makes one vulnerable to other problems). We now understand a lot about the health problems of the urban poor and how economic, social, environmental and health service conditions affect their health. However, focusing on problems or weaknesses gives only a very limited set of clues for positive action: why are some individuals, households or groups better able to cope with these conditions, and consequently have better health? We need to know what to strengthen among

low-income urban populations to protect and promote their health, and how to strengthen it. This requires information about resilience (adaptive capacity) rather than vulnerability: the positive rather than the negative. Is resilience merely the reciprocal of vulnerability (high scores in the same variables for which the vulnerable have low scores), or does it have different elements and dimensions than vulnerability? (Again, this requires carefully defining vulnerability and identifying its elements.) Would a paradigm shift in urban health take us nearer to improving the health of the urban poor in the next decades?

Source: adapted from Harpham 2008

Another debate that has arisen in the last two years is whether more research needs to focus on resilience rather than vulnerability (see Box 21).

### The Role of the World Health Organization Encouraging an integrated, intersectoral approach

The WHO, together with other UN agencies, can play an important role in getting health onto the agendas of all departments at the city level. Emphasizing a balanced approach to the diseases of poverty and the diseases of modernization will inevitably point to action

across sectors, and WHO is well positioned to provide examples from other settings and cities where intersectoral action has been successful. These examples may well have to come from different continents (e.g. Europe) where resource levels are dramatically higher than in Africa, but many approaches can be scaled down in order to be effective in a resource-constrained environment. Many of these initiatives will involve training of various cadres across sectors in order to build capacity and knowledge for urban health action (for example the police force, environmental health officers, social workers, teachers, as well as the obvious target groups within the health services).

### Renegotiating the role of Healthy Cities in Africa

Healthy Cities is a long-term health and development initiative that seeks to put health on the agenda of decision-makers, build a strong lobby for public health at local level and develop a local participatory approach to deal with health, including socio-economic, poverty and environmental problems. The concept emerged as a response to deteriorating health conditions associated with urbanization. Initially started as a small-scale project in Europe, the Healthy Cities concept rapidly gained popularity, with projects being implemented in hundreds of sites around the world. In general, Healthy Cities Projects have the following objectives (WHO 1995):

1. Political mobilization and community participation in preparing and implementing a municipal health plan.
2. Increased awareness of health issues in urban development efforts by municipal and national authorities, including non-

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health ministries and agencies.

3. Creation of increased capacity of municipal government to manage urban problems and the formation of partnerships with communities and community based organizations (CBOs) in improving living conditions in poor communities.
4. Creation of a network of cities that provides information exchange and technology.

In 1999 WHO-AFRO commenced the establishment of a formal network to build capacity and facilitate the sharing of experiences among Healthy City projects in Africa, including initiatives in South Africa, Namibia, Senegal, Cameroon, Mali, Congo and Tanzania. In part because they have been implemented using a variety of approaches and with varying levels of commitment, as well as across a broad time span, African Healthy Cities projects vary widely in terms of stage of development. In response to local concerns African Healthy Cities initiatives have also elected to focus on a wide variety of issues, some of which are addressed using a settings based approach, for example the creation of healthy food markets, schools and homes.

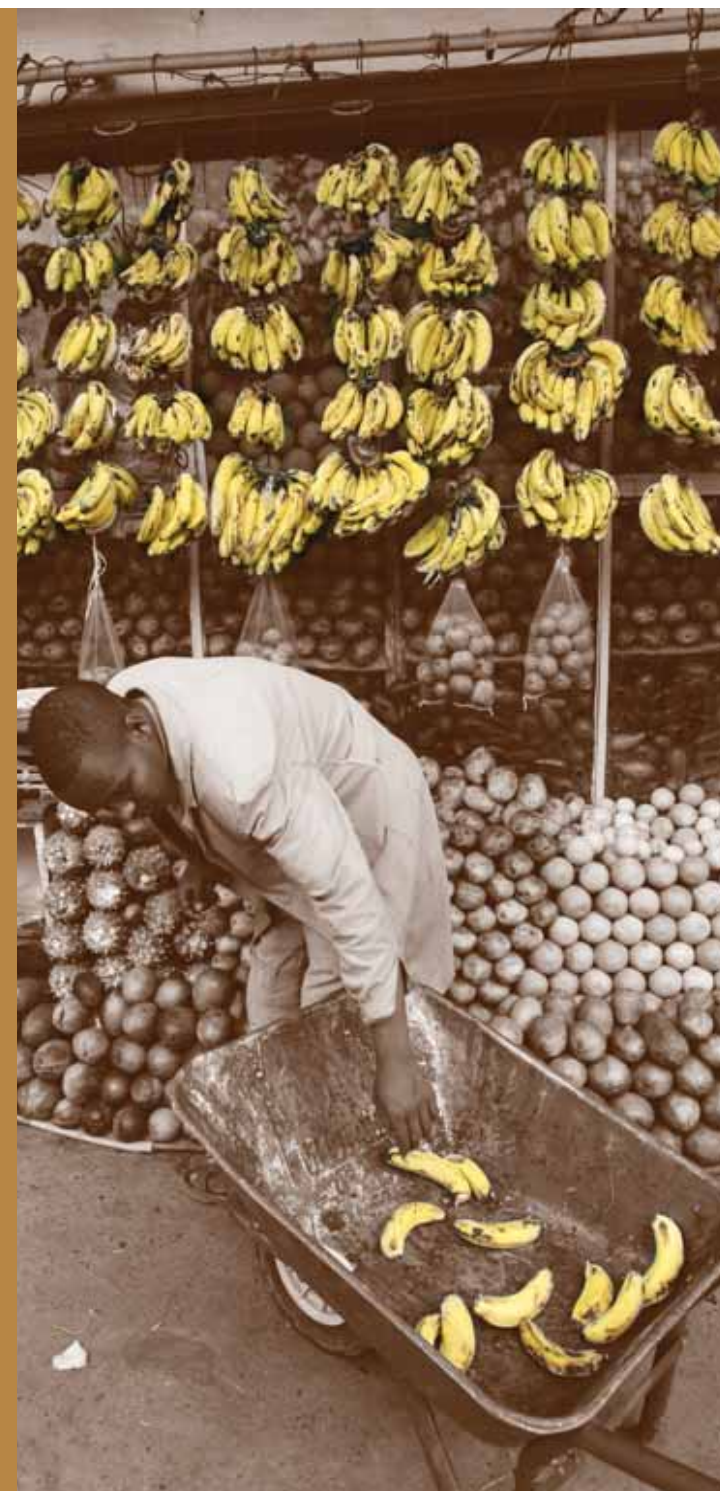
The lessons from the HCP approach in the 1990s have now been incorporated into innovative projects that combine detailed, disaggregated data from low-income urban communities with multiple stakeholder health planning while securing support from the top – the city council. This approach is exemplified in the Riverlea project in Johannesburg (see Box 23). Possible steps in such a process may be:

- Step One: Form a Planning Committee
- Step Two: Conduct research or an assessment to get to know the community
- Step Three: Based on the research/assessment, and in a consultative manner, put together a detailed "Action Plan".
- Step Four: Develop one or more project proposals to seek community approval and resources
- Step Five: Form working groups to implement the priority projects
- Step Six: Conduct regular, appropriate evaluations
- Step Seven: Revise plans and projects.

WHO-AFRO can support efforts to revive an enlightened HCP approach through communication of the concept to high level decision-makers and capacity development/training initiatives at local level. Also important is the development of mechanisms to evaluate the process of implementation and the achievements of Healthy Cities initiatives in Africa, and the dissemination of success stories and best practice case studies to cities elsewhere on the continent.

### Highlighting effective interventions and promoting research and informed planning

WHO can play an important role in advocating and supporting evidence-based urban health policy. While there are many descriptions of health problems in African cities, we have very few impact evaluations of interventions. We need to know what



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works and at what cost. Baseline data needs collecting before any action or intervention starts. Qualitative research which captures residents' experiences and views is equally important as quantitative research which documents numerical change over time in key indicators. The capacity of urban local government to collect and use such data needs strengthening, and there is now more investment in Africa in terms of Masters and PhD training within the continent rather than sending individuals to expensive northern institutions. WHO can also play a role in enabling urban health researchers to influence policymakers instead of allowing research results to gather dust on shelves in ivory towers. Researchers need to be "policy entrepreneurs" and get research into policy and practice (GRIPP). There is now much more knowledge and awareness of what researchers need to do to influence the policy process (get a GRIPP). The minimum set of questions that has to be answered in a succinct manner is:

- How is it new? What problem will it solve?
- Why is it good (benefits/impact)?

- Does it work here?
- Does it work in other places?
- What's the cost (additional or reallocative)?
- Does it last (sustainability)?

There is now also more knowledge available on how to overcome the particular challenges of undertaking research in and with low-income urban communities (Mathee et al. 2009). Box 20 summarizes some of the particular constraints.

### Box 22. Methodological Challenges

When undertaking health research with low-income urban populations include: lack of sampling frames (prompting the need to map each dwelling – a laborious and expensive task); high rates of residential mobility (making longitudinal studies a nightmare); reluctance to talk to "authorities" (for example, on the part of unregistered rural-urban or urban-urban migrants); dependence on a cash economy and a consequent expectation of cash incentives for participating in research,

and a need to visit dwellings during non-working hours; threat of physical insecurity for field researchers; difficulty of defining a "community" and high numbers of respondents with no fixed abode (pavement dwellers, street children, informal traders). All these potential factors need to be assessed and taken into account when designing population health research in low-income urban areas.

Source: adapted from Harpham 2008

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### **The Role of Governments**

Urban local governments can play multiple roles in the kind of actions outlined above. In particular:

- Governments must play a role in long-term urban planning;
- Governments should develop effective information systems to support effective planning;
- Citizens are not able to provide basic infrastructure (housing, water, sanitation, energy) – this has to be planned, budgeted and implemented by governments and be regarded as a high priority;
  - the WHO CSDH has recently advised that relatively small investments in upgrading living conditions could yield major health benefits for urban residents;
- The knowledge and challenges faced by communities must underlie development planning;
- If planning and development are to be sustainable, health considerations (promotion of good health and the prevention of disease) should be at the heart of it from the outset (early, planning stages)
- Facilitate training and capacity development  
Identify, write up and promote best practices (such as those outlined in this paper), and especially of community partnerships;

- Facilitate intercity exchanges in Africa to share experiences and network;
- Play a role in improving the urban development and health database (indicators) in Africa.

### **The Role of Communities**

For decades community participation, involvement, engagement and now partnerships have been promoted as a means to improve the health of low-income urban populations. In African cities there are very few examples of sustained developments initiated and supported by the community to improve urban health. While the middle and upper classes of African cities are not expected to “participate” in order to have services such as safe water, sanitation and waste disposal, the poor, who have fewer resources, are often expected to meet local government halfway and to invest their precious time, labor and money into community-based activities. There is an argument that urban local government should not be “let off the hook” of providing basic urban services to all its citizens. Having said this, there are potential benefits to be had from low-income communities organizing in order to lobby for their services and rights.



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### Box 23. Creating healthy settings through community partnerships: the case of Riverlea

Riverlea is a township constructed in Johannesburg in the early 1960s during the heart of South Africa's apartheid era, in close proximity to a large gold mine tailings dump. Poverty levels have always been high, and housing quality was poor to start with, and degraded further over the years. The settlement is also marked by overcrowding and widespread social problems, such as alcohol and drug abuse.

In 2007, the results of a longitudinal study of living conditions and health status (the HEAD study) in Riverlea, Johannesburg were presented to the local council committee, community members and other stakeholders. Evidence of the disparities between health in Riverlea and the remaining study sites, especially high levels of poverty, food insecurity, smoking (including widespread smoking of hookah or shisha pipes) and chronic diseases, stirred the meeting to action. In the audience was a prominent businessman, formerly a Riverlea resident, who enthusiastically called for, and facilitated, the formation of the Riverlea Development Trust. The Trust comprises mainly community members (a school principal, a community worker, residents, a police officer etc.), and is chaired by the local ward councillor.

Among the objectives of the Trust was to respond to the HEAD study findings in a structured way. The projects initiated by the Trust include a hookah hazard awareness campaign (subsequently scaled up to national level) and a street fruit tree-planting project to alleviate food insecurity. To address high levels

of chronic diseases, a capacity development partnership was facilitated between the local clinic and the University of Johannesburg. On a weekly basis, students from the university (the departments of nursing, podiatry, optometry, sports science and environmental health) will support the clinic staff, while gaining valuable experiential learning opportunities, and expand the clinic's chronic diseases services beyond the current narrow focus on treatment. Various income generation projects and a sustainable rodent control initiative are also in the planning stages.

In many ways the initiative in Riverlea follows the typical steps of a Healthy Cities Project. Based on a solid **information** base (the HEAD study and community knowledge), projects are initiated and **implemented** in **consultation with the community** (community members are the main drivers of the initiative). Progress is **evaluated** through the annually conducted HEAD study, as well as interviews with community stakeholders. Progress and obstacles are discussed at regular Trust meetings, and **initiatives adapted** accordingly.

With his political leverage, the local ward councillor played a critical role in bringing the proposals and work of the Trust to the attention of key municipal officials and politicians. He also played a significant role in creating awareness of the HEAD study findings among a broader group within the municipality. Overall, however, it is the collective experiences and input of individuals from a range of sectors and disciplines (including the community, local government and academics) that is oiling the wheels of action in Riverlea.



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### Box 24. Voices from the first International Conference on Urban Health, 18-23 October 2009 in Nairobi, Kenya.

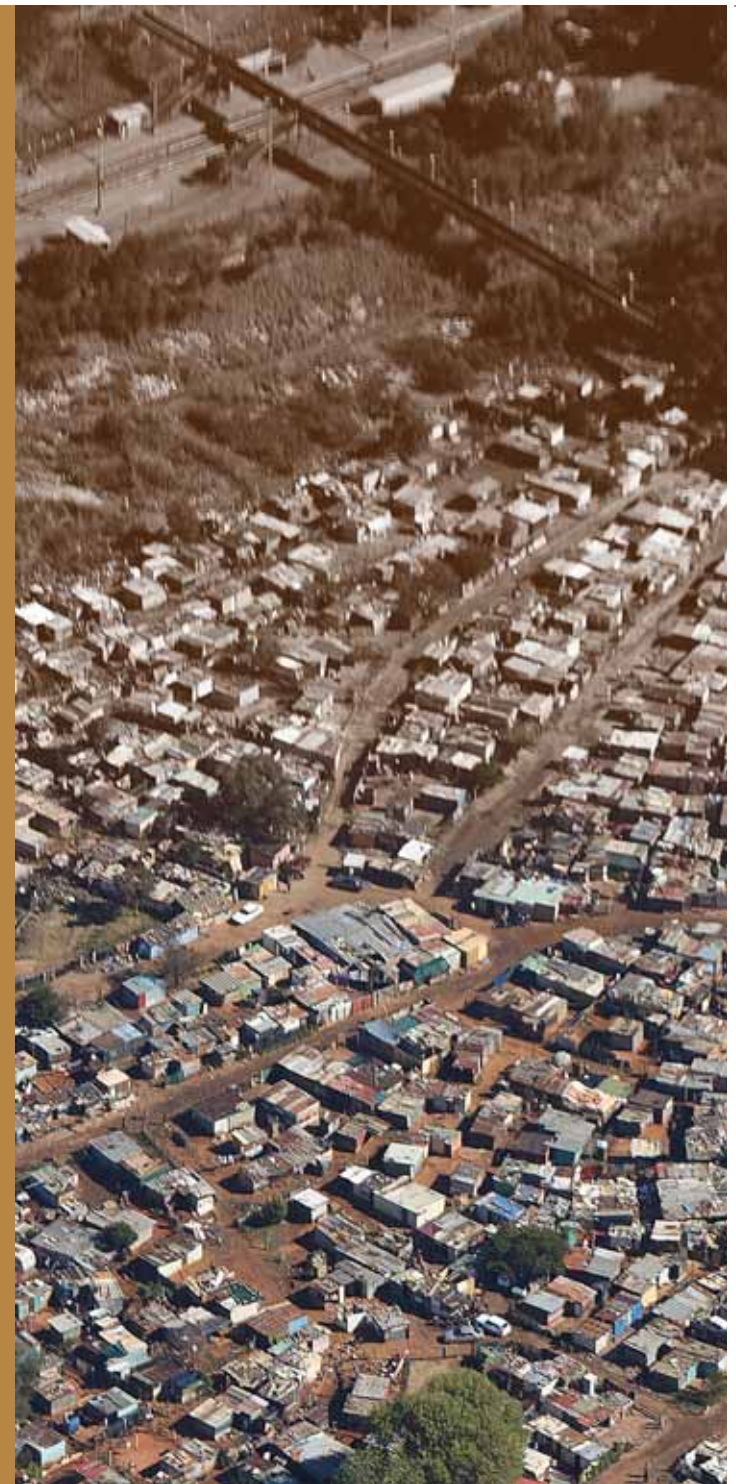
#### African urban health researchers suggest:

- Studying incidence of disease rather than prevalence will illuminate the source of ill health and enable its progression to be tracked (South African researcher)
- Governments need to perceive slum dwellers as stable rather than transient populations (Kenyan researcher)
- More public-private partnerships needed for effective delivery of health services (Kenyan researchers)
- Strengthening the ability of research to influence policy (Kenyan researchers): "If I had to rate the level of cooperation between government and us, I would say it is just above zero." (Kenyan researcher)
- Providing costing information on any proposed health intervention and communicating the opportunity costs of non-action (Kenyan and South African researchers)
- Clarifying the roles and responsibilities of different sectors and making them accountable (Kenyan researchers)
- Setting health outcomes as targets for local governments (South African researcher)
- Appreciating the links between urban and rural areas especially for the provision of health care for migrants (South African researcher)

- Using HIV/AIDS programs as an opportunity to strengthen urban health systems as a whole (UN researcher)
- Develop city-specific plans for HIV/AIDS as opposed to relying on national plans (UN researcher)

#### Government/Non-government respondents suggest:

- Strengthen the continuum of care (from home to primary to tertiary facilities), especially for maternal and child health care (International NGO advisor)
- Make more resources available to respond to the urban burden of disease, especially for the training of urban community health workers (Medical officer of a large Kenyan city)
- Increase the availability of drugs (Medical officer of a large Kenyan city)
- Empower urban local governments vis-à-vis central ministries of health (Medical officer of a large Kenyan city)
- Moving beyond the mere provision of housing: "A human being requires more than four walls" (Kenyan local government official)
- Provision of fire and police service in low-income urban areas



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