Chapter 23
Regional Assessment of Africa

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Although there is large spatial variation in rates of change across the 55 nations of Africa, the combined impact of high natural population growth and rural-to-urban migration means that Africa is urbanizing faster than any other continent. At a growth rate of nearly 3.4 % per annum, Africa's urban population is the fastest growing in the world. Currently nearly 40 % of Africa's inhabitants live in cities (UN Habitat 2010), which is expected to more than double from 395 million people to 1 billion in 2040. In some cases, it is projected that city populations will swell by up to 85 % in the next 15 years. The Nigerian city of Lagos, home to 8 million in 2000, is anticipated to exceed 16 million by 2015. Several other cities such as Abuja, Abidjan, Addis Ababa, Kano, Kinshasa, Luanda, Nairobi and, Ouagadougou are all expected to grow by more than one million by the end of this decade.

Population expansion and a tradition of low-density settlement mean that the rate of increase in urban land cover in Africa is predicted to be the highest in any region in the world (see Chap. 1, Fig. 1.2). Current predictions pin this at a dramatic 700 % increase over the period 2000–2030. Expansion is expected to be focused in five main areas: the Nile River, the West African urban corridor between Abidjan and Lagos, the northern shores of Lakes Victoria and Tanganyika, the Kano region in northern Nigeria, and greater Addis Ababa, Ethiopia. All except the latter are very sensitive ecological zones.

For the most part, the urbanization in Africa is taking place along the lines of past and current patterns elsewhere in the world, but becomes distinct due to its extent and its rapid development. One significant pattern is the anticipated rapid growth in smaller towns. Based on current projections for 2010–2020, 74.2 % of Africa's total population growth will occur in cities of less than one million. These are often settlements with weak governance structures, high levels of poverty, limited infrastructure and services delivery, and low scientific capacity regarding biodiversity.

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Most importantly, many of these cities suffer from simultaneous weak environmental regulation and debilitating infrastructural backlog, both of which conspire to ensure that these cities are operating beyond the carrying and regenerative capacities of the biomes of which they are a part. As a result, African urbanization is increasingly functioning as an indirect – albeit significant – driver of biodiversity loss.

More than 43 % of Africa's urban population lives below the poverty line, higher than in any other continent, making socioeconomic development a priority. This situation is particularly acute in Sub-Saharan Africa where slum dwellers account for 65 % of the urban population. Unlike some other continents where urbanization resulted from the concomitant increase in agricultural and industrial production, urbanization in Africa is mostly driven by a different set of economic processes anchored around limited natural resource exploitation and export. A cursory observation shows that the growth of most African cities has occurred in proximity to resource extraction points. However, since point source natural resources are capital intensive, their contribution to employment is extremely small compared to their share of GDP. For example in 2007, employment shares in industry in Africa were 10 % compared to 24 % for Asia (UNTACD and UNIDO 2011). The narrow focus on resource extraction for the international market and a weak manufacturing and industrial base mean there are insufficient employment opportunities for the growing urban populace. African cities are growing at a rate that is disproportional to real employment opportunities. The result is a large number of urban populations that are compelled to live in unplanned and uncontrolled urban slums and work in informal, often low paying and unregulated, sectors. In this context of informality, poverty, and lack of infrastructure, the potential role of biodiversity to serve as a source of ecological infrastructure to address numerous human needs is paramount (Schaffler and Swilling 2013).

The generally weak state control, the preponderance of feeble formal economic sectors, and the scarcity of local professional skills place constraints on handling the complex biodiversity challenges faced by rapid urbanization. In some countries there is no government authority specifically tasked with city planning and development. For example while there is a Federal Capital Development Authority (FCDA) responsible for planning and development in Nigerian capital Abuja, many states within the Federation do not have government agency that is devoted to coordinating city development. In these urban centers crucial function of city development is played to varying degrees by different ministries in a very poorly coordinated fashion. Typically officials in these ministries have little understanding of the intricate functions provided by biodiversity and how to best preserve these. It was as recently as 2008 that the government of Kenya first established a separate ministry in charge of the development of the capital city of Nairobi even though the city had grown from 0.8 million in 1989 to 3.5 million in 2010 (MoNMED 2008). A "development-first-and-anyhow" mentality is pervasive among African policy makers. This results in poor planning and a majority of large-scale developmental projects being undertaken without vital environment impact assessment. Moreover, there is often lack of clarity about lines of responsibly between the various tiers of government with regard to the process of development in sensitive areas or the general management

of critical biodiversity areas. For example the construction of the Gibe III dam on the Omo River in Ethiopia is being undertaken without detailed impact assessment on the lives of indigenous communities and several important biodiversity in lake Turkana, the world's largest desert lake. The situation is very much the same for other damns constructed or planned in countries such as Sudan, Nigeria, Mozambique, Ghana, Gabon, Republic of Congo and Mozambique (McDonald et al. 2009).

Because of the high level of informality and competing governance arrangements in Africa, especially around land-use management, conventional policy and regulatory measures used successfully to promote biodiversity in cities elsewhere in the world may not be effective here. However, the wide range of custodians of the rich biophysical resources and the high level of informality may also present opportunities for local and rapid adaptation to changing conditions in the urban landscape. One of the main criticisms of current attempts at biodiversity conservation in Africa is the continued pursuit of the bureaucratic pattern set by the colonial masters rather than harnessing customary conservation practices. It is argued that top down approaches to conservation are most exemplified by the establishment of nationally managed forest reserves in countries such as Nigeria alienate the people and vital indigenous knowledge-practice complex needed to ensure sustainable management (Gbadegesin and Ayileka 2000). There are indeed notable examples of good practices especially in Southern Africa where the communities are engaged in programs seeking to link wildlife conservation with economic development and poverty alleviation. These include the *Natural Resource Management Programme* in Botswana, the *Living in a Finite Environment project* in Namibia and the *Communal Area Management Programme for Indigenous Resources* (CAMPFIRE) in Zimbabwe. At the same time, it is worth stressing that population growth, rapid soil fertility loss and the pressing demand for economic development have all come together to pressure government and people into degrading valuable ecosystems all across Africa. The case of biodiversity conservation in Africa is a complex one, mired by historical environmental injustices and currently acknowledged as critical to future sustainability. A new path needs to be forged and one such opportunity lies in the urban transition to a 'green economy'.

The effects of urbanization on land cover in Africa appear to be unique. In the neotropics and Southeast Asia, urbanization and agricultural export markets are currently the strongest drivers of deforestation. In contrast, in much of Sub-Saharan Africa, old patterns of rural consumption of wood are still the major drivers of forest loss. However, there are significant variations across the continent. For example, in several West African cities, rapid population growth has increased incentives for farmers to convert forests into fields for crops to sell in urban markets. The recent land grab to secure African fuel and food production opportunities for urban citizens in other parts of the world is a stark reminder that cities draw not only on their immediate hinterlands for ecosystem resources.

It has been suggested that increased rates of rural-urban migration in Africa would relieve sources of pressure on old-growth forests and allow marginal agricultural lands to return to forest. This is indeed being witness in places but exactly what

the ecological outcomes will be remains to be seen. However, there are others that would argue that given the continued expansion of the rural population, albeit at a lower rate than urban growth, it is questionable to what extent this is a general pattern. It is likely that increased local and international demand for biofuels and other cash crops may result in a new export-driven mode of deforestation, just as in Asia and the neotropics. Some of those export demands come from (an increasingly tapped out) Asia itself. Already China has established a significant presence in many parts of Africa, offering infrastructure – e.g., superhighways, flyovers and oil refineries – in exchange for access to natural resources.

Africa has generated ambiguous settlement forms: in addition to more conventional dense urban agglomerations, there is commonly a large peri-urban population and a cyclical pattern of rural and urban migration (Cotula 2009; Zoomers 2010). While a foothold in the rural environment is retained, the shift to urban livelihoods means that rural land-use patterns no longer retain the same degree of focus on production, but instead become landscapes infused with cultural and familial significance. Low levels of formal employment in African cities put a high level of dependency on the provision of ecosystem services, such as water, fuel, and food production, from areas within cities as well as nearby natural areas. Both within cities and in adjacent rural areas, biodiversity resource harvesting feeds into an extensive economy focused on supplying cities, and many of the people who have recently migrated to them, mainly with food and agricultural products. With as much as 84 % of population in some African countries depending on firewood for cooking and heating there is enormous pressure on wood reserves with little time for regeneration (IEA 2010).

Addressing urbanization and biodiversity challenges in Africa will require governance responses across the continent. In a Cities and Biodiversity Outlook workshop that brought together African researchers, local government authorities, and planners in February 2012, participants discussed common governance challenges and identified eight key themes of specific relevance to urban biodiversity concerns on the continent:

1. Many governments are still struggling with colonial legacy and the structures (or lack thereof) that withdrawal and transition have left in the wake of new government. For example, part of this debilitating legacy was excessively rigid zoning in central urban areas, which inadvertently encouraged informal settlements in the form of slums and sprawl because residential uses were prohibited in Central Business Districts (CBDs).
2. High political instability often exists, and may be accompanied by varying levels of corruption. This can result in high informality of tenure and economy. Particularly at the city level, lack of financial and human resources, and consequently technical capacity, can prevent biodiversity and environmental issues from being recognized or addressed.
3. In many instances, biodiversity concerns are seen as independent of and less important than other urban pressures such as poverty, unemployment, and access to food, energy, water, sanitation, and housing. These pressures are principally

the ones prioritized by politicians, who must act swiftly and expediently to meet the demands of their constituencies and who are mindful to receive good press to this end.
4. Where urban biodiversity interventions are implemented, they are generally undertaken with a single ecosystem service in mind, and multiple benefits are often neglected.
5. Even in governments where environmental-management issues receive recognition and support, it may be difficult to generate continued political momentum and action.
6. Barriers to integrating the environment with other issues may also be educational. Resources to inform those in government may be inaccessible or nonexistent, and academic terms and concepts that have been developed in other parts of the world may be difficult to translate into other languages and knowledge systems.
7. There is often a disconnect between scales of government, with lack of effective communication between local and national levels, disenfranchisement or mismanagement of local government by higher levels of government, and failure of national policy to be applied and implemented properly on the local scale. Fiscal decentralization needs to match political decentralization, municipal boundaries may need to be extended for greater control over land-use change in peri-urban areas, and accompanying management tools must have area-wide (i.e., metropolitan or even regional) reach.
8. While international resources and funds exist, there is a lack of access and transparency of process on how local governments procure these opportunities.

Ultimately, how biodiversity is managed or integrated into African cities will depend on whether it is first understood holistically, then positioned institutionally and topically as a priority in governance agendas, and whether the co-benefits provided by ecosystems are integrally recognized across general policy and action. Anticipated urban growth in Africa presents a window of opportunity to forge an urban form that could acknowledge and embrace the role of biodiversity. While this can assuredly be informed and aided by experiences gleaned from the urbanized global north, it must take as its point of departure the unique nature of urbanization in Africa, and engage with the particularities and opportunities presented by this continent.

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