

Chapter 13

Improving Quality of Urban Life Through Enhanced Energy Policy in Africa

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ABSTRACT

Neither urban quality of life research nor effective urban energy policy research is new in Africa, but funding the future needs in these two areas requires exploring the new options, such as the emerging crowdfunding market. It is projected that by 2100 Africans will account for 40% of global population and majority urban residents, with huge workforce, a growing middle class, experiencing hyper-globalization, and increased innovation, all of which will enhance quality of urban life. For Africa to meet its large-scale energy-deficit and expected huge future demand triggered by rapid and massive urbanization, alternative renewable sources are considered in the supply policy options. Similarly, alternative visions of how energy can contribute to inclusive economic growth in Africa are examined and ways to fund them explored. To leap-frog Africa's development while the traditional funding mechanism helps, sustainable option lies in innovative alternative finance, especially crowdfunding markets in Africa and in diaspora.

INTRODUCTION

United Nation study (UNDESA, 2014) has indicated that the rise in population growth and urbanization is projected to increase the global urban majority by 2.5 billion people by the year 2050, with 90 per cent of that growth concentrated in Asia and Africa. Africa, led by Nigeria's projected 212 million people will need massive investment in energy to power the expected growth, expand the essential infrastructure, and help meet the accompanying rising demand for energy to service lighting, heating and cooling. These are great demand in the intense urban residential, industrial, commercial and social activities in the future to sustain current growth, create new and better-paying jobs, as well as lift millions of people out of poverty and slums (WEF, 2016; Jarrett 2017).

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Added to this massive huge demand is a huge energy deficit in most African countries where two-thirds of the people – an estimated 620 million - have no direct access to electricity (WEF, 2016). Such energy deficits in Africa tend to reinforce high rates of poverty, especially for women and the urban poor in the slums. Unfortunately, the poor urban communities of Africa are driven to pay among the world's most expensive unit prices for energy. Many communities are not only paying unreasonable prices, they are forced to pay in humanitarian terms, such as the inability to eliminate avoidable child deaths, unable to achieve universal secondary education, and in their failure to achieve more inclusive growth, a sustainable mix of land-use and even gender parity.

The current energy deficit and the projected huge demand in the future add up to create African energy crisis that is indeed the continent's growth and urban quality of life crises. Solving these would require such energy efficiency can offer practical and cost-effective solutions to budget constrained governments and citizens to meet their energy needs without sacrificing their development priorities. Thus, for Africa to leap-frog its development, improve the quality of life of its urban development actors (public, private and people) it must craft an effective green energy policies and can be funded using a mix of traditional and innovative alternative funding instruments.

The next section of the chapter discusses how urban development actors use innovations in energy and information technologies to promote innovative solutions in the key quality of life areas of health, education, and commerce. This is followed by a review innovations energy reform, its efficient use in urban activities and ways of applying it at the various spatial levels. The funding mechanisms for achieving these energy reforms are discussed the fourth section. The fifth section examines future research directions in these areas, with a conclusion section.

IMPROVING QUALITY OF URBAN LIFE IN AFRICA

It is expected that the global urban population will increase by about 2.7 billion by 2050. Africa is racing against time and dwindling resources to uplift the quality of life of its increasing urban majority population. An essential part of this task is determining how to meet the immense demands for urban infrastructures, development of new and improvement of existing housing infrastructure within the limited available funds (UNDESA 2014). The planning and design of these new developments will be used to reshape existing or create new urban landscapes with major implications for infrastructure costs, energy consumption as well as the livability and social and economic resilience of cities. As Table 1 shows Africa had a low-level in the 1950s will have the highest percentage by 2050.

Improving Quality of Life Through Urban Design

The quality of urban life can be enhanced greatly by means of careful urban design, which is achievable with high-energy efficiency using the traditional spatial tools that include selection of compact design, and urban management process that includes directed public participation.

- **Quality of Life and Energy Efficiency:** To sustain a livable and energy efficient future, major developments within cities is the key. Achieving a city's maximum potential requires the modernization of urban spatial development, on the principle of human-scale solutions, such as maximizing the accessibility to jobs, commercial stores and shops, social services and environmental

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