Chapter 5
Population Growth and Water Supply:
The Future of Ghanaian Cities

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ABSTRACT

With recent and expected record-breaking urban population growth in developing countries, African cities ought to undertake or revisit sustainable planning efforts necessary for managing population growth and dealing with rapid urbanization. This chapter examines how African cities are responding and adapting to rapid population growth in the area of water supply using Ghana as a case study. From a macro perspective, the chapter looks at the nature and extent of population growth and water supply in Africa, with a focus on Ghana. At the micro level, an analysis of the water supply chain in Ghanaian cities, focusing on distribution, equity and accessibility is presented. The chapter further presents a discussion on the way forward regarding urban water supply in Ghana in particular and Africa in general. The chapter concludes with key findings and directions for further research, in relation to population growth and urban water supply.

INTRODUCTION

Regular supply of water for cities has been perhaps one of the most striking urban management challenges that has characterized the era of urban population explosion. From a situation in the 1950 in which the total water supply for human use was no more than 1382 km^3 yr^{-1}, the figure had by 2000 jumped to well over 3973 km^3 yr^{-1}, representing a sharp increased proportion of the total global human

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water consumption (Clarke & King, 2004; Jenerette & Larsen, 2006). After an initial progress in access to urban water supply in the 1990s was welcomed as a positive approach towards meeting the growing urban demand (United Nations Children's Fund [UNICEF] & World Health Organization [WHO], 2012), however, there is today some ambivalence as to the capacity of urban areas to meet the water supply needs of diverse urban residents (Dominguez Torres, 2012; Stoler et al., 2012). Many authors (e.g., Banerjee & Morella, 2011; Dominguez Torres, 2012; UNICEF & WHO, 2012) have argued that urban water supply challenges in developing countries are a result of on-going and emerging global challenges such as climate change, increasing poverty conditions and rapid urbanization.

In recent years, a number of organizations and scholars have dedicated attention to examining how urban water supply needs could be met in the face of such global challenges especially in countries in regions such as Africa, East, Southeast and South Asia (e.g., Dominguez Torres, 2012; Fuest & Haffner, 2007; Stoler et al., 2012; United Nations Environment Program [UNEP], 2010; UNICEF & WHO, 2012). Interestingly, these regions are not only some of the world's most impoverished geopolitical locales but also, in many cases, urban population growth hotspots (Cobbinah, Erdiaw-Kwasie & Amoateng, 2015a; United Nations Department of Economic and Social Affairs/Population Division [UNDESA/PD], 2012). For many African nations, rapid urban population growth is often a major challenge for urban management including water supply (Banerjee & Morella, 2011; Cobbinah et al., 2015b). As a consequence, a number of studies (e.g., Banerjee & Morella, 2011; Dominguez Torres, 2012; UNDESA/PD, 2012, 2014) have focused on population growth, and indeed this is a key area in urban water supply and planning scholarship that can be linked to sustainable functioning of urban Africa. Official statistics indicate that Africa's urban population is increasing more rapidly compared to many developed countries (Cobbinah et al., 2015b; UNDESA/PD, 2012), and the highest rate of urban growth is observed in cities such as Cairo (Egypt), Lagos (Nigeria), Kumasi (Ghana) and Nairobi (Kenya) (UNDESA/PD, 2014). While during the present decade, the rate of Africa's total population growth is about 2.3% per annum, the urban population is increasing at an average rate of about 3.3% (UNDESA/PD, 2012, 2014). In many cases, annual urban population growth in some African cities such as Kumasi (Ghana) exceeds 5% (Cobbinah & Amoako, 2012). Today, about 40% of Africa's population live in urban areas, with future projections expected to reach 58% by 2050 (Cobbinah et al., 2015b; UNDESA/PD, 2014).

Rapid urban population growth in Africa imposes a major challenge on adequate water supply (Dominguez Torres, 2012; UNICEF & WHO, 2012), and remains a measure of the magnitude of current and future water needs (Stoler et al., 2012). In most African countries, rapid population growth has outpaced the rate of expansion of improved water supply services, especially in countries with the highest rate of urban population growth including Nigeria and Ghana. Globally, over 87 million people mostly from developing countries of Africa rely on unimproved sources of water supply (Dominguez Torres, 2012). As a consequence, urban water supply has become an important factor in socio-economic development and public health in Africa and other developing countries (Fuest & Haffner, 2007; Stoler et al., 2012; UNICEF & WHO, 2012). In Ghana, about 62.3% of the urban population rely on piped water and certainly less than 40% are supplied with piped water in their homes (Ghana Statistical Services [GSS], 2014a, 2014b). Very commonly, piped water supply is on the basis of one's geographical location within the urban setting, socio-economic status and the distribution mechanism, with service ranging from regular to intermittent lasting for few hours each day (Stoler et al., 2012). While at the macro level the gap between supply and demand across Ghana is widening due to, among others, increasing population demand (Fuest & Haffner, 2007), the dynamics are more complex at the micro or city level where access is inequitable, distribution is spatially biased and future supply is increasingly becoming uncertain