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Water scarcity for most people in Africa is socially-induced

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The physical lack of water is often not the cause of a community's water scarcity. In Africa, socially-induced water scarcity is a more prevalent reason for people's lack of access. Professor Horman Chitonge explains the different dimensions of water scarcity, including the infrastructural and socio-economic factors that can reinforce one another to exclude certain groups.

Often when we read about water scarcity, what comes to mind is the image of dry rivers, dams and taps, and long queues at water points. We associate water shortages with the changing weather patterns and climatic conditions, which reduce the availability of clean fresh water. But the physical lack of water is not the only cause of water scarcity, which occurs even in contexts

where fresh water is readily available. In Africa, the majority of people live in conditions where they experience water shortages as a result of subtle forms of exclusion based on income status, spatial location, gender, political affiliation, level of education, nationality or ethnicity. This type of water scarcity, which is socially-induced, is exacerbated by poor governance, weak public institutions and unequal power relations.

We read media stories every day about the growing pressure on water resources as a result of the increasing global population and the negative effects of climate change. Current **estimates** suggest that the global population increased by 4.4 times from just over 1.6 billion in 1900 to over 7 billion in 2010. While freshwater resources have remained almost the same, **water withdrawal increased** by 7.3 times over the same period. Based on these estimates, the growing pressure on available water resources is evident and, in some instances, this has resulted in water shortages. It was reported in 2016 that 2.7 billion people experience water shortage for at least a month each year, and it is projected that 70% of people globally will live under conditions of **moderate to severe water shortages** by 2050.

In Africa, although the amount of water withdrawn from the environment per person is still the **lowest in the world**, the urban population has been rising steadily, rapidly in some countries. Between 1990 and 2016, the **population in Africa doubled** from 613.5 million to 1.21 billion. A **recent study** has shown that Africa's urban population increased from 27 million in 1950 to 567 million in 2015. It is estimated that the **urban population** in Africa will rise to over 950 million by 2050, and this is clearly exerting more pressure on water resources, with water consumption expected to rise even further alongside living standards and incomes.

The 2016 **African Economic Outlook** estimated that the number of people with improved water sources increased by 232 million between 1990 and 214, but many more with no or limited access to clean fresh water. The aggregate national figures reported in most of these estimates do not capture the reality

of the majority of people, particularly in rural and peri-urban areas, who live under conditions of **constrained access to water**.

Shortages amid plenty

The interesting paradox is that African countries in water stressed conditions have higher proportions of people with access to water. Water stressed countries in North Africa (particularly Algeria, Libya, Egypt and Mauritania) and in Southern Africa (particularly Namibia, South Africa and Botswana) make water available to a higher proportion of people than in countries with **abundant water resources**, such as the Democratic Republic of the Congo (DRC), Mozambique, Angola, Niger, South Sudan and Tanzania. For example, although the city of Cape Town is located in a comparatively low rainfall area, with annual average rainfall of less than 500 millimetres, resulting in low freshwater endowment, the city makes clean water available to a much higher proportion of residents than in Kampala, Kinshasa, Lagos, Lomé, Lusaka or Yaonde, which in terms of fresh **water resources** are better endowed.

It is therefore evident that the challenge of lack of access to water cannot be attributed only to the physical absence of water resources in the natural environment; water shortages are experienced even in situations where fresh water is in abundance. In many African cities and countries that are well-endowed with fresh water resources, a high proportion of people live **under conditions of perpetual water shortage**.

Since water scarcity can be caused by factors other than the availability of water in the natural environment, it is important to disaggregate the different dimensions of water scarcity, taking into account both natural as well as socioeconomic factors. A disaggregated picture of water shortages helps to highlight the social subtleties that induce water scarcity. Looking at different orders of water scarcity helps bring out a more nuanced water narrative.

Dimensions (orders) of water scarcity

The first-order water scarcity refers to the inadequacy of water in the natural environment. It highlights the fact that available water resources are limited, whether one sees this in volumetric terms or in terms of the struggle to meet current and future needs. Countries in northern and southern Africa, the Middle East and some parts of central Asia experience acute levels of first-order scarcity.

The second-order scarcity often refers to the lack of economic means to make access to improved water sources available to all people. For example, the failure to invest or repair water infrastructure can lead to constrained and lack of access to water for a community, even in cases where fresh water is abundantly available. Many people living in informal settlements in African cities experience water shortages even when the settlement is located near a richly endowed water source.

The third-order scarcity refers to institutional arrangements and structures through which access to water for domestic or non-domestic use is mediated. The way institutions are set up and operate can create barriers to accessing water resources for many people. Third-order scarcities operate at a macro level, where certain decisions or lack thereof lead to some people living under conditions of scarcity, even in situations where there are abundant water resources, and adequate resources for water infrastructure. It is common to find people living in the same city having different levels of access to water. Residents of informal settlements in most African cities, for instance, experience distinct forms of water scarcity compared to residents in formal and high cost areas. In cities like Cape Town, where the average water access ratio suggests that only a negligible proportion of the population live without adequate access to water, residents in informal and low-income areas struggle to access water services. They often battle with erratic water supply, long delays in responses to water problems and poor water services as a result of inadequate infrastructure.

The fourth-order scarcity arises not because there is a shortage of water or poor infrastructure, but because of the social relations between different

groups of people. Some struggle to access water because they have no or low income, because they live in a poor neighbourhood, they are refugees, foreigners, women, or because the majority of the people in the community belong to a particular political party (usually the opposition party), and so on. In this sense, the fourth-order scarcity is the most subtle, and often operates at a micro level and, as such, tends to be conspicuously invisible to public policy.

Although there are many people in Africa who live where the first-order scarcity is prevalent, most people live under conditions where the other three orders of scarcity (socially induced) are prevalent. However, these orders of scarcity should not be seen in a hierarchical manner that gives attention to one order and ignores the others, because often they reinforce each other.

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About the author



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Horman Chitonge is professor of African Studies at the Centre for African Studies, University of Cape Town (UCT) and a visiting fellow at the African Studies Centre, Tokyo University of Foreign Studies. His research interests include finding alternative strategies for economic growth in Africa, hydro-politics, agrarian political economy and poverty and Social welfare Policy.

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