CHALLENGES AND REALITIES OF WATER MANAGEMENT OF MEGACITIES: THE CASE OF MEXICO CITY METROPOLITAN AREA

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Megacities—characterized as metropolitan areas of 10 million or more inhabitants—have become an important focus in terms of water provisions, sanitation services and the related impact of urban development on natural resources. While basic needs of residents of smaller cities are very similar, the emphasis placed on megacities lies in the fact that these massive urban conglomerates have grown to almost unmanageable dimensions. This, in turn, has made water provision and sanitation services to the entire population a bleak, if not unachievable, task.[1] In most megacities of the developing world, clean water is both scarce and expensive to produce. Large sectors of the population in such densely populated urban areas do not have access to potable water, and even larger sectors of the population do not have access to sanitation. Non-revenue water—water that is produced and enters the distribution system but that is never billed to consumers because it is lost due to leakages or illegal connections—is up to 30 to 40 percent. Infrastructure is either scarce, becoming complex or deteriorating. In addition, water supplies are largely underpriced and necessary investments are estimated to reach billions of dollars. However, as complex as these matters are, the real challenges in terms of water provision point in another direction. The main problem in urban concentrations, which is further heightened in megacities, is the lack of appropriate management, adequate institutions and sustainable planning to address these challenges beyond short-term approaches.

To provide an overview, this study first analyzes the nature of megacities on a global scale, addressing the delicate relationship between economic development and urban resource management in the face of environmental sustainability. This topic then unfolds through an analysis of the Metropolitan Area of Mexico City (ZMCM), a megacity accounting for approximately 20 to 22 million people and recognized for its diminishing supply of natural resources, among them, freshwater.[2] Emphasis is placed on declining groundwater supply, complexities with infrastructure

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and concerns regarding sanitation. While the central focus of this argument is the ZMCM water supply, a comparative analysis points out the similarities and differences among megacities across the globe, such as Dhaka, São Paulo and Bangkok. Ultimately, this paper attempts to demonstrate that the problem of water access in megacities has less to do with water scarcity and more to do with water mismanagement.

Megacities as a Growing Phenomenon

As urban growth continues to increase worldwide at escalating rates, megacities remain a growing phenomenon. According to the Organisation for Economic Cooperation and Development (OECD), as globalization progresses, urban regions—in particular, cities with populations exceeding 10 million people—are playing increasingly important roles in the global economy in terms of competitiveness, thus becoming major centers for both local and national policies.[3] Yet, most megacities have focused on economic growth with almost no consideration for environmental sustainability.[4] As a result, these extensive metropolitan areas have created alarming levels of water and air pollution, solid waste and deterioration of their own natural resources. These problems have also reached surrounding regions affected by urban sprawl. The most serious environmental problems are associated with the disorganized expansion of legal and illegal settlements, over-exploitation and degradation of surface and groundwater sources, air pollution, solid waste and the indiscriminate destruction of natural resources. This has created what seems to be an endless vicious cycle in which the deterioration of the environment has resulted in social erosion and vice versa. Mexico City and its surrounding areas have not been an exception.

While Mexico City has achieved high economic growth, its development is still deeply polarized and asymmetric. Economic and social development has flourished in some parts of the megacity resulting in prosperity, but inequalities have become increasingly acute in other parts of the region.[5] In order to maintain and improve the living standards of a growing population, major investments are needed to protect basic resources. Failing to address environmental degradation—such as shrinking freshwater sources—is counterproductive to economic development in the long-run. This holds true because while most megacities focus on increasing foreign competition and employment at the cost of their natural environment, foreign investors tend to be most interested in megacities that not only have the most appropriate institutions, infrastructure and human resources, but also liveable environments and natural resources that will sustain economic activities.[6]

Although all megacities face similar challenges in terms of access to natural resources—like clean water and ensuring adequate control of air, land and water pollution—these urban conglomerations differ in terms of growth rates, types of population, infrastructural needs and environmental conditions. In the developing