Urban Water Quality: Will It be a Public Priority for the Sustainable Development of Cities from the Developing World in the XXI Century?

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In order to function, cities need water of acceptable quality. However, by functioning they affect water availability in terms of both quantity and quality. This is because cities concentrate and synergistically combine diverse human impacts affecting water that are frequently overlooked. To control such impacts the causes need first to be identified, and this can be done by applying the hydrological urban water cycle concept. By analysing interactions between water sources, drinking water and wastewater services and air and soil within cities, an unexpected exchange of pollutants emerges.

After presenting the urban water concept, available hard data is used to illustrate this process for Mexico City, as an example of the challenges to the adequate management of water in developing world megalopolis. Mexico City has 21 million inhabitants and is unreasonably overexploiting its local aquifer, has an acute problem of air pollution while the soil is contaminated with solid wastes and different diffuse sources of pollutants, such as sewers and sub-superficial storage tanks and oil pipelines. For this reason, Mexico City is polluting its own water sources but is also affecting water from other basins by both importing water to meet demand and disposing of its wastewater. Indeed, because the amount of water used is very large, the amount of wastewater produced is also large, and its disposal without any treatment is resulting in one of the biggest cases of non-intentional reuse for human consumption globally.

The paper also discusses options for improving water management in Mexico City that are applicable to other megacities. To avoid negative effects, several types of measures that go beyond the simplistic approach of using wastewater treatment plants to control pollution are proposed. Some of them include new concepts such

as recognizing that treated effluents may become indirect sources of water. The holistic management approach proposed can be implemented only if governments invest in water protection in an amount proportional to their economic capacity, which is not happening in many countries around the world. Unfortunately, the paper shows that, frequently, developing countries' income is unrelated to the water and wastewater services provided and investments made in the water sector, indirectly revealing the different degrees of importance given to water by politicians. In conclusion, it is recommended that besides including the importance of integrated water management and the environment in political speeches, governments need to demonstrate their political will by allocating funds.

Key words: Mega-cities, Mexico City, urban water cycle, developing countries; IWRM, public policy