

Rainwater Collection and Integration In Urban Water Supply

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<u>Crisis in Water resources</u>: Most urban areas are facing a resource clench in terms of fresh water supply. The crisis is even more severe in developing world. The drastic abstraction of groundwater and depletion of surface resources is leading to land subsidence, salinity, and poorer water quality. As a resource water is now **competitive demands** along with growing cost of treatment. Its supply might eventually adopt market economics to the detriment of the poor.

<u>Urban water supply and drainage-present scenario</u>: Most urban areas in the developing world are unable to supply the minimum water requirements for its population both in terms of quality and quantity. **Twin sewer system**, which allows a low cost collection and treatment of storm water, is quite often absent. The peripheral areas of the growing city which are most prone to water crisis are often district where planning has been rushed. Twin sewer system even if existing has been mongrelized and treatment of storm water been mere costly. The scale of water management in these areas has to be more on the **neighborhood level**.

Rainwater as supplementary high quality water source in urban areas: Rainwater as a resource may be supplementary resource requiring little treatment. It can ease the pressure on supply. It's collection and transport can be managed on a macro and micro level (where a semblance of twin sewer system exist) or recreated in the neighborhood as a partially stand alone supply system. The most effective area of application is of course on the micro level (individual plots). However the neighborhood scale of management the one most economic and most effective in terms of solution.

<u>Rainwater collection and supply as small-scale service</u>: Rainwater collection, conveyance and storage have different strategies in different levels of application. On the macro level the dedicated storm water (if in existence) has to be linked to large storage resources beyond the urban periphery. On a neighborhood level either existing systems or new close/open channels may be used and storage dedicated in parks, U.G reservoirs in public places etc. In micro levels large U.G fire tanks reservoirs could serve the purpose. The importance of the mid level neighborhood scale management is that in these areas the built up density and more roof/hard standing area per capita allows more collection surface.

The engineering of rainwater as also its supply and management could become an enterprise in small scale utility. In the developing world this labor-intensive collection and management system would create wealth and employment. The cost of drainage and water supply is relatively high particularly in dense built up area.

References

[1] Alternative Water Resource Management, APHW2004, R.Gupta & A.Biswas (2004).