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Mitigating Freshwater Needs by Reuse of Greywater for Residential Apartments in Islamabad

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Pakistan is facing the issues of water scarcity in almost all major cities including the capital city of Islamabad. Water scarcity has become well pronounced due to many reasons such as increase in population, increase in population density, change in hydrology due to climate change, mismanagement of water sources etc. There is need to look for alternative water resources including Greywater recycling, rainwater harvesting etc. The perception of Greywater recycling and reuse is being considered as the major step towards saving needs of freshwater. Greywater is the waste water that comes from wash basins, showers, laundry, and sinks and does not include waste water from urinals and water closets. This Greywater constitutes almost 70% to 80% of daily per capita water demand. This Greywater contains some minerals, organic waste materials dissolved or suspended in it. This paper presents monthly water need analysis and simple adoptable measures for an apartment residential project in Islamabad, in which Greywater is proposed to replace 50% needs of potable water by constructing septic tanks to take care of black water and filter beds (gravel + sand) to treat Greywater for use in toilet flushing, irrigation, car and floor washing. It is recommended that internal plumbing of a house shall be planned with separate pipes for black and grey waters. Overhead water storage and piping shall also be separate to supply water for flushing, irrigation, car and floor washing to further save potable water.

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