

Water Budget in High Drought-Borne Area in Jaffna District, Sri Lanka during Dry Season

Authors : R. Kandiah, K. Miyamoto

Abstract : In Sri Lanka, the Jaffna area is a high drought affected area and depends mainly on groundwater aquifers for water needs. Water for daily activities is extracted from wells. As households manually extract water from the wells, it is not drawn from mid evening to early morning. The water inflow at night provides the maximum water level that decreases during the daytime due to extraction. The storage volume of water in wells is limited or at its lowest level during the dry season. This study analyzes the domestic water budget during the dry season in the Jaffna area. In order to evaluate the water inflow rate into wells, storage volume and extraction volume from wells over time, water pressure is measured at the bottom of three wells, which are located in coastal area denoted as well A, in nonspecific area denoted as well B, and agricultural area denoted as well C. The water quality at the wells A, B, and C, are mostly fresh, modest fresh, and saline respectively. From the monitoring, we can find that the daily inflow amount of water into the wells and daily water extraction depend on each other, that is, higher extraction yields higher inflow. And, in the dry season, the daily inflow volume and the daily extraction volume of each well are almost in balance.

Keywords : accessible volume, consumption volume, inflow rate, water budget

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