

Non-Revenue Water Management in Palestine

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Abstract : Water is the most important and valuable resource not only for human life but also for all living things on the planet. The water supply utilities should fulfill the water requirement quantitatively and qualitatively. Drinking water systems are exposed to both natural (hurricanes and flood) and manmade hazards (risks) that are common in Palestine. Non-Revenue Water (NRW) is a manmade risk which remains a major concern in Palestine, as the NRW levels are estimated to be at a high level. In this research, Hebron city water distribution network was taken as a case study to estimate and audit the NRW levels. The research also investigated the state of the existing water distribution system in the study area by investigating the water losses and obtained more information on NRW prevention and management practices. Data and information have been collected from the Palestinian Water Authority (PWA) and Hebron Municipality (HM) archive. In addition to that, a questionnaire has been designed and administered by the researcher in order to collect the necessary data for water auditing. The questionnaire also assessed the views of stakeholder in PWA and HM (staff) on the current status of the NRW in the Hebron water distribution system. The important result obtained by this research shows that NRW in Hebron city was high and in excess of 30%. The main factors that contribute to NRW were the inaccuracies in billing volumes, unauthorized consumption, and the method of estimating consumptions through faulty meters. Policy for NRW reduction is available in Palestine; however, it is clear that the number of qualified staff available to carry out the activities related to leak detection is low, and that there is a lack of appropriate technologies to reduce water losses and undertake sufficient system maintenance, which needs to be improved to enhance the performance of the network and decrease the level of NRW losses.

Keywords : non-revenue water, water auditing, leak detection, water meters

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