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**Evaluation and assessment of the distribution and utilization of groundwater
in the Siyabalakote Village, Hambantota District in Sri Lanka**

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In some parts of the world, groundwater is the only source of potable water available for human consumption. Even in Sri Lanka, people in the dry zone predominantly depend on groundwater, during the dry periods of the year. The low water table, mainly due to the poor rainfall reception in many parts of the country, especially in the dry zone, enhances the eminent necessity of proper groundwater analyses. Hence this research study focuses on the evaluation of the spatial distribution and assessment of the utilization patterns of the existing groundwater resources, in the dry zone of Sri Lanka for continuous supply of drinking water to the locals. Siyabalakote, a remote village in Barawakuguka GN Division, which falls under the Ambalantota DS Division in the Hambantota District, was selected for the current hydro-geological investigation. The groundwater of the area originates from both weathered formations, as well as from top soil deposits. The study area lies in the Low Country Dry Zone (DL5) where the terrain is generally flat, but has an undulating relief pattern. The elevation varies from 30 to 150 m and significant morphological features cannot be identified in the study area.

The samples were randomly drawn from 40 selected dug wells and the irrigation canal of the village. A Geo-Plotting exercise was carried out in order to map the spatial variation of the electrical conductivity (EC) and pH values of the groundwater, using a hand-held GPS (Global Positioning System) machine. Socio-economic causes which enhance the utilization of groundwater were also recognized by interviewing well-owners and through field observations.

The study revealed that dug wells which are constructed in the study area in the alluvium sandy to clay sandy unconfined aquifers are permeable. Maps have been generated using the GIS software to evaluate the spatial distribution of groundwater, in accordance with the identification of the spatial variation in EC and pH values. The EC and pH of the groundwater resources were identified as being static and below WHO and Sri Lankan standards for drinking water. As such it is a reliable source that could be used to meet the demands of the local population.