RESEARCH PAPER:

Evaluation of groundwater potential in Najangud taluk of Mysore district, India

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Asian Journal of Environmental Science, (December, 2010) Vol. 5 No. 2 : 83 -88

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SUMMARY

The overexploitation of population to stress on groundwater resources due to ever-rising density and demands profligate uses as well as overgrowing population of Nanjangud taluk is an issue of great concern. The purpose of this study was to make a qualitative and quantitative estimate of the available groundwater resources in the Nanjangud taluk for efficient utilization and management of groundwater resources. The methodology involved the collection and analysis of existing bore well data. The results indicated that the aquifers were composite and composed of weathered regolith of low permeability to high storage and overlying fissured bedrock of high permeability and low storage. Semi-unconfined aquifers prevailed in major portions, which constituted the principal source of groundwater. The depths of boreholes in the taluk ranged from 17 - 95 m with an average of 75 m.

Mahadevaswamy, G., Nagaraju, D. and Papanna, C. (2010). Evaluation of groundwater potential in Najangud taluk, Mysore district, Karnataka, India. *Asian J. Environ. Sci.*, **5**(2):83-88.

Key words : Groundwater assessment, Water quality, Recharge, Water management, Water resources

Received: *June, 2010*
Accepted : ***August, 2010***

Present requirement and changes of life cycle and population growth have increased demands for water resources globally. Thus, the welfare of every society is tied to the sustainable exploitation of water resources. Groundwater continues to serve as a reliable source of water supply to most rural communities in Taluk. Although groundwater is a renewable resource, its availability and use are influenced by many factors such as the lithology of the area, climatic patterns and water quality. Due to these climatic changes, computations based on historical data are sometimes erroneous, therefore, the margin of variation should be factored in and abstraction should be less than recharge by this estimated margin. The largely unseen nature of groundwater has resulted in development initiatives which are unaware of the hydrodynamic limits of the resource and unable to regulate the resulting patterns of abstraction. There is the need for efficient management and utilization of groundwater resources on a sustainable basis to meet the future challenges. As with other renewable resources, demand can exceed supply and therefore some form of control or management of the resource should be in place, to ensure long term access by users. Management does not imply that users are guaranteed to have access to unlimited quantities of the resources at all times, but rather that under normal circumstance, users will be assured of a specified minimum quantity at all times. The Nanjangud Taluk located in a region of varied rainfall conditions and periods of extreme climatic conditions do occur and there may be times when even these minimum standards of supply cannot be met. Due to these climatic changes, computations based on historical data are sometimes erroneous, therefore, the margin of variation should be factored in and abstraction should be less than recharge by this estimated margin. Currently, the Taluk relies mainly on groundwater for its water supply needs. Therefore, the proper management of this resource is a matter of great concern and the most effective and economic means to sustain water supply in the Taluk is through the protection and sustainable management of water resources in the Taluk. There are a number of governmental departments and non-governmental organizations (NGOs) engaged in the exploitation of groundwater and the supply of potable drinking water for the rural communities. During the last 15 years, a large