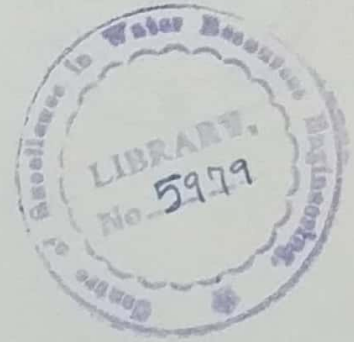


**DEVELOPMENT OF GROUNDWATER  
MANAGEMENT STRATEGY BASED ON ISLAMIC  
PRINCIPLES**

By



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## ABSTRACT

Groundwater is an important resource, which provides considerable advantages to its users. It constitutes 99% of World's easily accessible freshwater resources. In Pakistan, it is also an asset of immeasurable value. Its availability at the farmgate has increased from 3% to 40% of total water available at the farmgate during the last forty years. It is also a renewable resource and hidden part of the hydrological cycle. The mismanagement of this resource does not only result into considerable losses to attainable benefits from this resource but also the very sustainability of this resource itself is threatened causing the environmental hazards such as rising water tables, falling water tables, well interference, groundwater pollution. This situation has led to a growing realization that only through a good management, use of groundwater can be made productive and sustainable. However, any effort aimed to formulate a sound theoretical framework for proper management of groundwater is constrained with certain issues vis-a-vis, groundwater is a public or private property, and whether or not it is economic, free or social good. This research study provides answers to these questions in Islamic perspective. Islam considers groundwater as public good and not a purely economic good. Islam does not allow free playing of markets in this special sector. Besides the enhanced role of state in groundwater planning, management, Islam also utilizes the services of voluntary institutions in provision of this resource.

The groundwater management like any other management is a multidimensional process involving technical, social, legal, economical and moral aspects. The effective

management requires blending of all these aspects to result into successful ventures.

The social systems prevailing in the world have different views about these aspects. In this study, economical, legal, social and moral norms of Islam have been integrated with contemporary technical knowledge to result into effective management of groundwater.

Islamic values such as man's position as caliph of God on the universe, economic and efficient use of resources, maintenance of 'mizan' in all human activities and participatory management imply to utilize the resources including water in a sustainable, efficient, reasonable and equitable manner.

Islamic groundwater management strategy is not a rigid one. It has flexibility and dynamism in its content. A strategy for groundwater management integrating all technical, social, moral, economic and legal aspects has also been presented for the country ensuring the sustainability of the resource.

A case study was also conducted to know the users views and application of conceptual management strategy to the local environment. The case study concludes that positive and physical measures such as improving canal supplies, water conservation measures and artificial recharge should also be taken to tackle the problem of falling water levels to serve the public interest. The awareness campaigns about collective ownership of the groundwater and its implications, simple groundwater principles, Islamic teachings related to groundwater management are needed to be carried out for proper implementation of groundwater regulations.