

Abstract Details

Title: Management of Infrastructure for Water and Petroleum Demand in KSA

Author: Magdy Shayboub Ali Mahmoud, Samir Mahmud Adam Abdalla

Abstract: The purpose of this paper is showing, how Geographical Information Systems (GIS) can be used to support infrastructure planners and analyst on water and petroleum demand of a local area in the Kingdom of Saudi Arabia (KSA). The first part of this work discusses the issue of analysis, design and creating the geo-database system of KSA land and infrastructure using Stylus Studio XML editor, describing the components of the whole system of Subareas in Saudi Arabia affecting local infrastructure planning and analyzing which include of specific area and facilities management. The second part defines the creation of the GIS application of the discussed field having the GIS functions of the infrastructure discusses the geo-database of the application of GIS In infrastructure in Saudi Arabia districts. The third part defines the results of the statistics analysis populations in the Subareas, specify the relation between water resources and the elevations of subareas, the data of the layers of roads, railroads existing in Saudi Arabia specially in the eastern area where most petroleum s wells are found. Using Google earth to show the elevation of the subareas and the relation with the water resources, three groups of GIS forms was produced they are the geodatabase of the Saudi Arabia (area, subareas and main cities) ,water resources layers (water in land , water area and land cover) , roads, railroads and elevations layers. The main contribution in the paper, discussed the infrastructure and the results of the statistics analysis populations in the subareas, specify the relation between water resources and the elevations of subareas of the data layers of roads, railroads existing in Saudi Arabia, especially in the eastern area where most petroleum's wells are found production and exploration of petroleum including the geodatabase of wells of petroleum distributed in Saudi Arabia finding the locations using Google earth map, satellites to locate the areas of producing petroleum.

Keywords: GIS, Water in land, Water area, Railroad, Elevation, XML Schema.