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Abstract Details

Title: Impact of Grand Ethiopian Renaissance Dam on River Navigation at Khartoum State, Sudan

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Abstract: River transport is one of the preferable part of transportation in the country which owns rivers as it is the least expensive and the largest capacity and least impact negatively on the environment, Since Sudan has an extensive network of rivers represented in the Great Nile River, river transport had a great influence in shaping the history of the country. As the river transport vessels are affected by water levels, there is a need to study the effect of the Ethiopian Renaissance Dam on the river navigation in Sudan, taking a specific area in Khartoum state where the Nile tourist berth. The study began by determining the basic depths of the Nile from the lowest level. Here is the concept of depth, which is the distance from the water surface to the bottom of the river. For the purposes of this study we assigned this depth to the level of the earth surface in the vicinity to know the shape of the basin. Geographic Information Systems (GIS) techniques were used in the ARC GIS program and preliminary data collected from the study area were obtained by means of a bathymetric device and the locator (GPS). The program was processed by means of statistical tools for the depth of the study area. By using the Raster calculator and producing the final map. The secondary data was obtained from the study of the Ministry of Irrigation and Water Resources, the Research Hydraulic Center and Studies for River Navigation Authority, Ministry of Transport, Roads and Bridges, for the study of the Berber-Khartoum-Kosti navigational study year 2016. The data represented water levels in the Nile after the dam operation. For the Khartoum area in March, which corresponds to the initial data collection which represents the lowest level of Nile, and was processed by the program and the production of final maps. The results show that after the operation of the dam will increase the navigable area where the increase in the rate of two meters in the lowest level of the Nile in the dry season, which increases the depth of the same value, which facilitates the movement of rivers and reduce the amount of large quantities of removal in the shallow areas proposed in The study was conducted by the Ministry of Irrigation and Water Resources that mentioned above.

Keywords: Grand Ethiopian Renaissance Dam, Khartoum State, River Navigation.