

EFFECT OF ASWAN HIGH DAM (AHD) STORAGE ON THE INTEGRATED MANAGEMENT OF WATER RESOURCES IN EGYPT

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Abstract

Nile River is the world longest river by adding its tributaries which reach 6850 km. The Nile basin covers all Africa where the basin area reaches 3106 km² and spread over 11 countries Burundi, Congo, Egypt, Eritrea, Kenya, Rwanda, North and South Sudan, Tanzania, and Uganda.

The comparison between Nile and other major rivers such as Amazon, Congo, Mississippi, Mekong, Zambezi shows that the discharged water from Nile basin is very small relative to the basin area. Also, it shows that the demand increases and multiple uses for the basin countries specially Egypt and Sudan which classified as arid. So it is very important to study the problem of integrated water resources management in the Nile basin under different operation scenarios and rules taking into considerations the decrease of storage volumes in Lake Nasser due to sediment action in the lake and its effects on water shortage in Lower Nile region, Also considering study the water shortage values due to decrease of natural flow arriving Aswan because of construction of storage projects such as AHD.

The complexity of the nature and economic system within a river basin makes it difficult to plan and design an integrated operation program. Modeling may be helpful in accounting for all relevant components comprising a river basin to address addressing various planning and management objectives and activities. In the present paper, the adopted methodology to study the effect of Aswan High Dam (AHD) storage on the integrated water resources planning and management in Egypt will be presented and discussed