

**Some development and economic aspects of the Mindu Dam project, Morogoro: a  
background analysis for decision making**

**Josephine Diana Kaduma**

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**University of Dar es Salaam, College of Social Sciences, 1972**

The Mindu dam project is a development project in the upper Ngerengere basin near Morogoro town. Currently the project's aim is to store the water of the upper catchment of the Ngerengere River during the rainy season to be used for supplying present and future urban, domestic and industrial water needs as well as rural domestic and irrigation needs. Back in 1956, the project justification was to store water for the use of the sisal estates downstream the dam site, kingolwira prison farm and for the irrigation of 400 hectares. In 1967 the project's purpose was described as partial flood control, rural domestic and livestock water supply during the dry season and possibly provision of irrigation water. A study of the Ruvu basin (Appendix A) Of which Ngerengere is a sub-basin, revealed that several proposed projects with engineering feasibility had no economic feasibility study. It was later found out that an economic feasibility study was one of the desirable studies to be carried out before implementation of a project. The thesis attempts such a study for Mindu dam project. A survey of the Morogoro urban water supply revealed that the present water source, even after extension, is incapable of supporting the urban population as well as the proposed industries by the end of 1972. Therefore a new source of water supply was absolutely necessary by the beginning of 1973. By 1970, Mindu dam was the only known way to provide this much needed water. By 1974, the urban population would require an extra 2.25 million litres per day while the industries would require 6.75 million litres per day. A census on the rural population revealed that 600 people will be displaced by the reservoir. These, plus other 400 will require improved water supply (quality wise) as at present they are totally dependent on the polluted Ngerengere River. A soil survey below the dam site revealed that 800 hectares with sandy, loamy and clayey soils could be put under irrigation agriculture. Fishing from the reservoir might be an additional benefit but this is difficult to evaluate at present. A survey was carried out on the rural population's feelings on improved water supply. It was found out that more than 64% would welcome the improved water supply system while 32% did not like it. Some amount of health education as well as political education is necessary to convince this 32% of the benefits of improved water supply. It was found out that only 10.6% of the total population wanted to be settled in an 'ujamaa' village and only 8.6% wanted to cultivate or do business 'kiujamaa'. Therefore only compensation costs arising from the loss of permanent property like houses and tree crops were assessed and not costs arising from resettling the people in a planned settlement

(ujamaa village). The costs for the construction of the reservoir and distribution system were found to be 12,500,000 shillings while maintenance and operation costs were found to be 250,000 shillings per year. Compensation costs were found to be 465,210 shillings. The direct returns from urban water supply were found to be 1,916,250 shillings per year by 1974. 100,000 shillings per year in 1974 can be written off as direct return from the rural population. Direct benefits from irrigation and fishing were estimated at 1,500,000 and 100,000 shillings per year respectively. The above information was used to assess the project's economic worth. The costs were weighed against the benefits and a benefit-cost ratio of 5:1 was obtained as discussed in detail in chapter 6.