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Water Management Priorities for Sustainable Socio-Economic Development

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Abstract

The paper presents real-time water management system operation practices in the USA that can be adopted for use in Ethiopia with some adaptations to suit realities in the country. State of the art concepts, methods, and procedures are illustrated. The historical evolution of the South Florida Water Management System is described. The current state of water management is explained to provide ideas of what can be used in Ethiopia. Objectives of water management in Ethiopia and USA can be similar. The question is if opportunities exist to share information on advances in water management concepts, methods, and processes. It is important to identify practices in the developed world that can be adapted to the needs and realities of developing countries. In most countries water management evolves through similar stages. The initial stages of socio-economic development result in undesirable consequences such as deforestation, soil erosion, and ecological degradation. When such consequences become apparent, societies wake up to nature's call for help. Historically, South Florida was swampy land. From the late 19th to the mid-20th centuries, Florida swamps were drained to make land available for agriculture and industrial development. Cities were built and agriculture expanded on drained land. Transportation and other industrial infrastructure substantially replaced natural wetlands. Such endeavors were followed by undesirable environmental outcomes including degradation of natural habitat, floods accompanied by loss of human and animal life, and recurrent water shortages. In the late 1940s and 1950s national efforts were geared towards flood control, water supply, and navigation. In the 1970s and subsequent years water management policy centered around water quality and ecology stressing the idea of fishable and swimmable rivers. The current water management practice in the United States focusses on ecosystem restoration while continuing to meet other goals including flood control, water supply, navigation, and recreation. Within the context of water management in Ethiopia, the recommendation is to learn from experiences of nations ahead in the water management evolution to minimize adverse environmental outcomes. Ethiopia can adopt and enhance integrated water management with a clear focus on food, ecology, energy, and related development endeavors while promoting mitigation of undesirable environmental consequences.

Keywords: Water management system, Flood control, Water management policy, Ecosystem restoration

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