



## Evaluation of Water Supply Systems in Phnom Penh City: A Review of the Present Status and Future Prospects

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**ABSTRACT** Phnom Penh City, the capital of Cambodia, is facing the problem of inadequate quantity and poor quality of water. The continuous increase in urban population and the need for repair and maintenance of old and outdated structures and distribution networks will increase the city's water demand almost 2.5 times by the year 2025. Owing to lack of technical and financial resources, achieving this target is doubtful by government effort alone. This study explores the present situation and possible improvements based on existing facilities of the Phnom Penh water supply system.

### Introduction

Phnom Penh (PP), the capital city of Cambodia in Southeast Asia, has a population of around 1.2 million. The city is located along the bank of the Sap River, a tributary of the Great Mekong River. Although located on the bank of two rivers, the water supply conditions of the city are poor in quality and quantity. At present only 40% of the inhabitants of Phnom Penh City are supplied with piped water from two water-treatment plants. The water-supply project was started way back in 1895 by a French company. Further improvement in the water-treatment facility started in 1958-59. The Phum Prek Water Treatment Plant (PPWTP) was constructed during 1966 along with renovation and extension of existing distribution pipelines. From 1993 onwards, further renovation and construction works were commenced.

The PPWTP has a present capacity of 100 000 m<sup>3</sup>/day and is the largest treatment plant in Cambodia while the Chamkar Morn treatment plant has a capacity of 20 000 m<sup>3</sup>/day. PPWTP draws raw water from the Sap River, as shown in Figure 1. The river serves for navigation as well as other recreational activities (e.g. boating, floating restaurants etc.). Phnom Penh Port is also situated on the banks of the Sap River. During the dry season the Sap River flows into the Mekong River, while in the wet season the flow reverses and water from the Mekong River flows through the Sap River to the Sap Great Lake. The flow direction reverses again at the end of the wet season as the Mekong River level falls. There is a significant variation in the water quality

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