

Water Treatment and Supply in Kayes, Mali, West Africa: Treatment Processes, Operations, and Economics

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A high quality and sufficient water supply is essential to human health, but is often missing in life in West Africa. In Mali, only 65% of the population has access to improved drinking water sources. As Sogoba Togota, Peace Corps Mali's Associate Director of Water/ Sanitation says, "When entering a town or village to look at its health situation, it's more telling to see if there's a water tower than to count the number of hospital beds." In this report, research was performed at the Drinking Water Treatment Plant in Kayes, an isolated city of 100,000 people in western Mali.

The objective of this report is to detail the Treatment Processes, Operations and Economics of Kayes' Drinking Water Treatment Plant and Supply. A part of this report will describe the unique environment of a large city in West Africa, the challenges involved in working in this city, and how the local population overcomes the challenges to provide reliable drinking water.

In addition to research at the Water Treatment Plant, an economic survey was performed by interviewing 30 randomly selected households located throughout the city of Kayes. This survey provides revealing information about the state of water supply in Kayes, Mali. The average monthly water usage for a household size of 5 to 10 people was estimated to be 300 liters per day. This value increased to 1,100 liters per day for a household of greater than 25 individuals.

The results of the survey also suggested that households in Kayes are paying on average 23% of their monthly income for water. People in Kayes are also paying more than three times the price of water in the United States. The range of water price determined from the survey ranged from \$1.50 to \$2.00 per 1,000 liters in Mali versus \$0.52 per 1,000 liters in the U.S. In addition, some households must purchase more expensive water from street vendors or use river water because they do not have sufficient funds to pay the utility on a monthly basis.