

Assessment of the Water Quality of the Oti River in Ghana

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Abstract

Oti river, an important tributary of the Volta lake in Ghana, was chosen as a case study to investigate the variations in the quality of its water at different locations. This was necessitated by the people's reliance on the river for their domestic and agricultural water use. Composite water samples drawn from some sections of the Oti river were analysed in the laboratory for certain parameters to enable assessment of water quality. The observed results of the laboratory analyses are compared with the 2003 Ghana Raw Water Criteria and Guidelines for domestic use. The results indicated that turbidity, total iron, faecal coliforms and total coliforms were above the limits set out by the 2003 Ghana Raw Water Criteria and Guidelines for domestic use. Thus, the water from Oti river was considered unsuitable for direct human consumption at the sampled locations. Using the Water Quality Index (WQI) Calculator 1.0, the WQI for Oti river was calculated to be 39.3. The WQI indicates that water quality in the Oti river was poor. This implies that the water quality is almost always threatened or impaired; conditions usually depart from natural or desirable levels. Public awareness with respect to the need to boil and/or filter the water before drinking is called for. Sanitary facilities to control river pollution and appropriate water treatments techniques are required in the area to improve the welfare of the riparian dwellers.