

Addressing Microbial Contamination in East Hararghe, Oromia, Ethiopia: Improving Water Sanitation Infrastructure and Promoting Safe Water Practices for Enhanced Food Safety

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Abstract : Food safety is a major concern worldwide, with microbial contamination being one of the leading causes of foodborne illnesses. In Ethiopia, drinking water and untreated groundwater are a primary source of microbial contamination, leading to significant health risks. East Hararghe, Oromia, is one of the regions in Ethiopia that has been affected by this problem. This paper provides an overview of the impact of untreated groundwater on human health in Haramaya Rural District, East Hararghe and highlights the urgent need for sustained efforts to address the water sanitation supply problem. The use of untreated groundwater for drinking and household purposes in Haramaya Rural District, East Hararghe is prevalent, leading to high rates of waterborne illnesses such as diarrhea, typhoid fever, and cholera. The impact of these illnesses on human health is significant, resulting in significant morbidity and mortality, especially among vulnerable populations such as children and the elderly. In addition to the direct health impacts, waterborne illnesses also have indirect impacts on human health, such as reduced productivity and increased healthcare costs. Groundwater sources are susceptible to microbial contamination due to the infiltration of surface water, human and animal waste, and agricultural runoff. In Haramaya Rural District, East Hararghe, poor water management practices, inadequate sanitation facilities, and limited access to clean water sources contribute to the prevalence of untreated groundwater as a primary source of drinking water. These underlying causes of microbial contamination highlight the need for improved water sanitation infrastructure, including better access to safe drinking water sources and the implementation of effective treatment methods. The paper emphasizes the need for regular water quality monitoring, especially for untreated groundwater sources, to ensure safe drinking water for the population. The implementation of effective preventive measures, such as the use of effective disinfectants, proper waste disposal methods, and regular water quality monitoring, is crucial to reducing the risk of contamination and improving public health outcomes in the region. Community education and awareness-raising campaigns can also play a critical role in promoting safe water practices and reducing the risk of contamination. These campaigns can include educating the population on the importance of boiling water before drinking, the use of water filters, and proper sanitation practices. In conclusion, the use of untreated groundwater as a primary source of drinking water in East Hararghe, Oromia, Ethiopia, has significant impacts on human health, leading to widespread waterborne illnesses and posing a significant threat to public health. Sustained efforts are urgently needed to address the root causes of contamination, such as poor sanitation and hygiene practices, improper waste management, and the water sanitation supply problem, including the implementation of effective preventive measures and community-based education programs, ultimately improving public health outcomes in the region. A comprehensive approach that involves community-based water management systems, point-of-use water treatment methods, and awareness-raising campaigns can contribute to reducing the incidence of microbial contamination in the region.

Keywords : food safety, health risks, microbial contamination, untreated groundwater

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