Gravity Flow Clean Water Project for Mountainous Areas

Summary

The provision of drinking water remains a major challenge in developing countries. An estimated two billion people around the world lack access to safely managed drinking water services (WHO 2022). Contaminated water has resulted in 1.7 billion cases of diarrhoea among children under five years old annually in developing countries, accounting for 446,000 deaths among under-fives. In addition, there are three million cases of cholera and an estimated 95,000 cholera deaths and 11 million cases of typhoid fever and an estimated 129,000 fever deaths annually.

Challenge

The availability of potable water in the Mountainous areas of northern Pakistan, has been one of the major challenges for local residents. The north of Pakistan including, Upper Dir, Chitral, Gilgit Baltistan and Kashmir collectively has the largest amount of frozen water after the North and South poles but water availability is restricted in winter while water from melting glaciers in summer is affected by high turbidity in rivers.

Access to river water is another problem given mountainous terrain and harsh weather conditions while the majority of urban centres are faced with water stress and insecurity as water from municipal sources cannot meet demand. An added challenge is the vulnerability of the entire region to natural hazards such as landslides, rock slides, avalanches, floods and earthquakes that damage water and other infrastructure leading to contamination of water and disruption of water services, with the region being vulnerable to the impacts of climate changes.

Solution

The solution to the given challenges is to provide clean drinking water through a gravity flow water supply. Clean Water Alkhidmat Foundation Pakistan's overarching goal is to reduce diarrhoeal morbidity by 50% in its partner communities in the Northern Areas and Upper Khyber Pakhtunkhwa. The project aims to provide quality drinking water to approximately 500,000 inhabitants of Upper Dir, Kashmir, Gilgit, Baltistan, and Chitral. The general purpose of this project is to substantially reduce the risk of food and water-related diseases as a public health problem for its target group. Clean water intends to fulfill this objective by offering technical advice and resources in order to:

• Provide safe, potable drinking water to more than 10,000 households per year

Establish an operational and sustainable village-based management structure for each project

• Facilitate the adoption of healthier domestic, personal, and environmental hygiene in project villages.

Long-Term Impact

The long term impact of this project lies in eradicating the water borne fatal diseases and to improve the quality of life in the project areas. Due to contaminated water hundreds of human suffer daily while trying to collect water from streams and ponds. In the long term this project will address all these challenges, primarily focusing on clean water availability to all residents of the mentioned project areas. Hence, it will contribute to the well-being of people in the Northern Khyber Pakhtoon Khawa, Gilgit, Baltistan and Azad Jammu Kashmir.