

IMPLEMENTATION OF WATER QUALITY PARAMETERS

By

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Introduction

Water is a vital and precious resource and arguably Pakistan's most important renewable resource. Plants, animals and fish depend on water of adequate quantity and quality for their survival. Good water is vital for urban supplies, agriculture, industry and recreation.

Safe drinking water is fundamental to health, survival and growth of all living species. However, these basic necessities are still a luxury for many of the world's poor people and with rapidly growing urban populations the challenges are immense. Achieving this avowed goal will remain a distant dream if we do not focus on this issue seriously.

Pakistan has the seventh largest population in the world with nearly 170 million people (2.4% annual growth rate), of whom 70% live in rural areas. These poor people, mostly living in rural areas or urban slums, are not only deprived of financial resources, but they also lack access to basic needs such as education, health, and safe water supply and sanitation services.

Water Quality Situation in Pakistan

Although it is estimated that approximately 95% of urban and 87% of the rural population in Pakistan has access to 'improved' water supply (Joint WHO/UNICEF Monitoring Program Progress Report 2008), many of the "improved" water quality systems in fact supply water that is "unsafe" for human consumption. According to the Fifth Water Quality Monitoring Report 2005-06 published by PCRWR, only 13% of the samples drawn from 2 cities of the country were 'safe', while approximately 87% of the samples were found unsafe for drinking purpose owing to bacteriological (68%), arsenic (24%), nitrate (13%) and fluoride (5%) contaminations. Although the major contamination is faecal contamination, due to rapid urbanization and industrialization, chemical contamination caused by unsafe disposal of Waste water and industrial effluents, solid wastes, excessive use of fertilizers and pesticides is increasingly becoming an issue of concern and is causing huge losses in health and livelihood every year.

Causes of Water Contamination in Water Supply Schemes

In Pakistan, poor bacteriological quality is the dominant issue. Arsenic, nitrate and fluoride are the key emerging water quality problems and have been detected in all provinces of the country. However, the water quality problems faced by different provinces are different.

Arsenic contamination is present in Punjab and Sindh. Nitrate contamination of ground water is significant in agricultural zones, due to excessive use of fertilizers and untreated effluents from factories. In Sindh, salinity is a common problem, especially in the coastal areas. In Baluchistan, the most pressing water problem is water scarcity and fast depletion of ground water.

Although some water contaminants occur in natural environment due to geothermal process such as arsenic, common salt and fluoride. Many of the water contaminants are anthropogenic. Poor sanitation and unsafe disposal of human and animal waste are the key reasons of high level of microbiological contamination of surface and ground water sources. Rapid urbanization and industrialization, and lack of Waste water treatment facilities, the amount of untreated industrial effluents and wastes discharged in water bodies has increased significantly. The tanneries, the paper industry and the sugar industry are the major contributors to chemical contamination.

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