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DRINKING WATER ISSUES IN PAKISTAN

INITIAL DRAFT

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"A fundamental promise we must make to our people is that the water they drink is safe."

Haroon

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ABBREVIATIONS USED

Abbreviation	Description
EPA	Environmental Protection Agency
GI	Gastrointestinal
GoP	Government of Pakistan
MoST	Ministry of Science and Technology
MPL	Maximum Permissible Level
PIHS	Pakistan Integrated Household Survey

EXECUTIVE SUMMARY

Access to adequate water of acceptable quality is fundamental for all living beings. The provision of potable water for the world population is increasingly becoming a problem for the entire world, developing countries being no exception. Pakistan is a semi arid region, and like the rest of the world, clean water sources are rapidly depleting. This not only poses the problem of the access of essentially required water, but also forces the population to drink, low quality water which is hazardous to health. Such a grave health situation affects all of us, the consumers, whose life depends upon water. Already many million deaths have been attributed to drinking unclean water. Measures should therefore be taken to ensure availability of clean potable, drinking water for communities. Enforcement regarding quality public service provision comes foremost. Standards set for quality of such water, should be realistic, and should take into account the current situation in Pakistan.

The Network, working for consumer protection in Pakistan feels that safe drinking water is not only the right of everybody, in Pakistan, it will also go a long way in alleviating the misery of the burden of disease being shifted by water-related illnesses. The need is also felt that instead of scattering the work on water quality in various departments, the Government should take concrete steps in holding a body responsible for tackling the whole issue of water. Trained staff should be brought in, to ensure adequate water treatment before it is supplied to the consumers, and at water testing facilities, whatever few are available. Already present staff should be imparted on-the-job trainings to help them improve their working. Protection of sources of water supply should be made mandatory, whether it be a public water supply or a domestic level private water supply. At the same time the community's awareness needs to be enhanced regarding the whole water problem, so that they can prevent themselves from the ill-effects of drinking unclean water, and also rise to the occasion, and voice their concern at the right forum.

This document has been drafted in the spirit that it will help to become a guiding road-map for the experts who claim to know so much, and are doing so little; that it will help the activists, who want to do a lot, but have no clear vision of how to proceed; and that ordinary ilk, who know so little, and yet are the ones who are the most affected.

1. INTRODUCTION

Water is an essential nutrient, necessary for maintaining body temperature, transporting nutrients throughout the body, keeping joints moist, food digestion, ridding the body of waste products, and cooling the body. It is recommended by the American Health Association that an adult should consume approximately 3 Liters of water each day; children about half as much. While the best way to consume this amount is by drinking plain water, foods and beverages made with water also count as part of this amount.

1.1 Chemical Properties of Water:

The Hydrogen atoms are "attached" to one side of the Oxygen atom, resulting in a water molecule having a positive charge on the side where the hydrogen atoms are and a negative charge on the other side, where the oxygen atom is. Since opposite electrical charges attract, water molecules tend to attract each other, making water kind of "sticky."

All these water molecules attracting each other mean they tend to clump together. This is why water drops are, in fact, drops! If it wasn't for some of Earth's forces, such as gravity, a drop of water would be ball shaped -- a perfect sphere.

Water is called the "universal solvent" because it dissolves more substances than any other liquid. This means that wherever water goes, either through the ground or through our bodies, it takes along valuable chemicals, minerals, and nutrients.

Pure water has a neutral pH. Pure water has a pH, of about 7, which is neither acidic nor basic.

1.2 Water's Physical Properties

1.2.1 States of Water

Water is unique in that it is the only natural substance that is found in all three states -- liquid, solid (ice), and gas (steam) -- at the temperatures normally found on Earth. Earth's water is constantly interacting, changing, and in movement

1.2.2 Water Temperatures

Water freezes at 32 degree Fahrenheit (F) and boils at 212 degree F (at sea level, but 186.4° at 14,000 feet). In fact, water's freezing and boiling points are the baseline with which temperature is measured: 0 degree on the Celsius scale is water's freezing point, and 100 degrees is water's boiling point. Water is unusual in that the solid form, ice, is less dense than the liquid form, which is why ice floats.

1.2.2.1 Factors influencing water temperature:

- (i) Soil erosion can increase the amount of suspended solids in the water. As a result, the turbid water's particles absorb the sun's rays, which cause the water temperature to increase.

