

Water quality assessment of Swat River tributaries, a case study of Marghazar Watershed and adjoining channels

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The study was designed based on to assess the relative impact of waste water on Swat River due its two major tributaries 1st one is Marghazar water shed running in North-south direction and 2nd is Sanger water stream running in East west direction. The main issue are villages namely Marghazar, Chetor, Islampur, Kukrai, Sheesha village, Saidu Sharif and Mingora city, having industrial activity mainly manufacturing of Swati shaals furthered by municipal and hospitals waste water, carrying pollution load that is ultimately disposed of into the swat river. Discharge of domestic waste also contributes a lot to stream water in Mingora city. The general objective of water quality monitoring under the research study is to provide the information on the level of pollution in the water resources of the study area. Pakistan Council of Research in Water Resources (PCRWR) Islamabad is responsible for conducting, coordinating, monitoring, reporting, Water Management, Desertification, Water Quality research and developmental activities in their respective disciplines, being executed at Islamabad and Regional Outfits. Pakistan was a water rich country just a few decades ago, however a recent World Bank Report stated country is now among the 17 countries that are currently facing water shortage. The per capita water availability in country which was more than 5000m half a country before has no fallen to about 1200m ,and as such it is rapidly entering into what are called water scarce countries. Surface water quality encompasses a wide range of conditions that are part of the aquatic environment in a water body. However the aquatic environment provides diverse habitat and a clean water supply for aquatic life, wildlife and humans. There is no single or simple measure of water quality. But water may be tested for a few characteristics or numerous natural substances and contaminants, depending on the need. This can be done using traditional methods, such as collecting a representative water sample from a water body and sending it to a laboratory for analysis. The result values showed temp 20^oC to 26 ^oC, electric conductivity 155µs/cm to 1949µs/cm, pH 5.86 to 7.54, Turbidity 0 to 206, total dissolved solids 1074 and 1169, alkalinity 630 and 765ppm, bicarbonates 30ppm to 765ppm, calcium 14mg /l to 224 mg /l, magnesium 85mg/l, hardness 650mg/l, chloride 183ppm, nitrates 9ppm, sulphates 52ppm, potassium 43mg/l, iron 0.3mg/l and arsenic 4.310ppb. Protection of upstream surface water bodies may give special emphasis as contamination of upstream water bodies have widespread water quality implication both for upstream and downstream consumers. Municipal as well as industrials waste must be disposed of after due treatment according to the prevailing regulation. Improving the conveyance of water in the channels system constructed for supply of water for drinking purposes of by avoiding entry of sanitary and agricultural effluent s and other wastes may be ensured. High erosion rate due to high relief and terraced farming coupled with substantial annual precipitation bring agriculture fertilizers down to the surface water bodies. Controlled and well managed application of fertilizers is therefore required to be practiced in such areas.