

Surface and Groundwater Pollution in Sindh and Mitigation Options

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Sindh province is located in the southeastern part of the country and its climate is semi arid to arid. There is great variability in rainfall and the annual average precipitation is 160 mm. This province constitutes the lower Indus plain with a population of about 40 millions. Its peculiar location and topography makes it prone to floods, droughts and sea water intrusion. Groundwater salinity is widespread throughout Sindh. In many parts of the province, groundwater is also polluted with arsenic, fluoride and pathogens. While almost all surface water bodies (canals, lakes and ponds) are highly polluted with sewage, industrial and other wastes. In some areas surface water is also turbid with poor taste and odor. As a result, there is scarcity of fresh and clean water for drinking and other purpose. Moreover, the untreated surface water is supplied from these polluted sources by municipalities to the most of population in Sindh. Consequently, a large section of the population is suffering from gastroenteritis, arsenicosis, skin lesions and dental fluorosis. Present study is based on 200 drinking water samples collected from surface and groundwater sources in nine districts of Sindh (Thatta, Jamshoro, Hyderabad, Matiari, Tando Mohammad Khan, Tando Allayar, Tharparkar, Badin and Nawab Shah). These water samples were analyzed for physical and chemical characteristics to determine (i) suitability for drinking purpose (ii) identify pollution types (iii) trace their geogenic and anthropogenic sources and (iv) suggest mitigation measures.