

AIR AFFAIR IN THE PROPOSED SMART CITY OF SOLAPUR – A CASE STUDY

P. Prabhakar, M.D. Gajul and N.T. Chavan

Dept of Geology, School of Earth Science, Solapur University, Solapur, Maharashtra

E-mail: geoprabhakar@gmail.com

Abstract

Deteriorating air quality in India has come a close second to malnutrition, as the biggest health hazard since 1990. India remains one of the worst affected countries where 1.9 million premature deaths occur due to deteriorating ambient air quality. Air quality data in Solapur has been analysed to examine its status and to understand its health condition. Air quality incorporating the parameters SPM_{10} , $SPM_{2.5}$, NO_x , SO_x , CO and Ozone were analysed over a total period of 63 months to decipher the status and quality of air that the citizens of Solapur respire. The ambient air quality index for health (AQIH) indicates, that it was 71.4 percent as moderate, 25.4 percent as satisfactory, 1.6 percent as good and 1.6 percent as poor during the period of this study. Season wise comparative examination of AQIH reveals that it was satisfactory to moderate during rainy season, moderate to poor during winter and moderate and spiky in summer. AQIH is largely controlled by SPM_{10} and $SPM_{2.5}$ thus becoming most lethal as $SPM_{2.5}$ is known to lodge deep in the dense but fragile network of alveoli present in lungs, eventually leading to chronic lung diseases and breathing distress.

The 10 and 2.5 microns sized suspended particulate matter have their origin from lithogenic and anthropogenic sources. The main source being the dry soils in the region such as entisols and inceptisols which are blown through without settling. Added to the problem is the drought situation with negligible number of rainy days. The ambient air quality during post-rainy season improves due to scrubbing and rinsing effect in air that consists of particulate matter.

Keywords: Suspended particulate matter, AQIH, Solapur.