

# **Environmental Impact Assessment Model to Support Sustainable Development: Application to Sudair Industrial and Business City, KSA**

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## **Abstract**

Sudair Industrial and Business City is considered as a civilized area for building world-class industrial compounds for citizens and labors. The city is designed to contain various industries, commercials and housing activities. As a result, air and water of Sudair city are most likely affected with air pollutants and different kinds of disposed liquids and solid wastes. So, Environmental Impact Assessment (EIA) as a controlling tool is necessary to be applied prior, during and even after industrial projects to ensure that the environmental impacts of Sudair Industrial and Business City are fully fulfilled according to the national and international standards. Therefore, this research project is targeting to monitor and evaluate the environmental impacts of the activities of Sudair Industrial and Business City in terms of air and water resources using the geographical information system (GIS) and global position system (GPS) techniques. The current changes in air (wind speed and direction, gaseous and air pollutants concentrations) water (changes in surface and groundwater parameters and leakage of toxic-trace elements) will be sampled and evaluated then mapped using Geostatistics techniques. Then, an Environmental Impact Assessment Model (EIAM) will be developed based on measured parameters using GPS and GIS techniques. The

model will be capable to reveal the variations in air and water quality parameters in 3D dimensions in the form of contour maps and related attributes.