

GIS Application to the Analysis of Air Quality Information

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Introduction

- This study is aimed at spatiotemporal analyzing of TMS air pollution data using GIS technique.
- The TMS-monitored air quality information was analyzed with the geographical information of the TMS stations in Capital Area. Air pollution maps during mid-summer were produced using TMS data in study area and land use patterns based on Land Cover Classification Map.
- Then, the correlation between the re-classified land use data in this study and the corresponding air quality information in a concerned area, e.g. Incheon, South Korea in this study.

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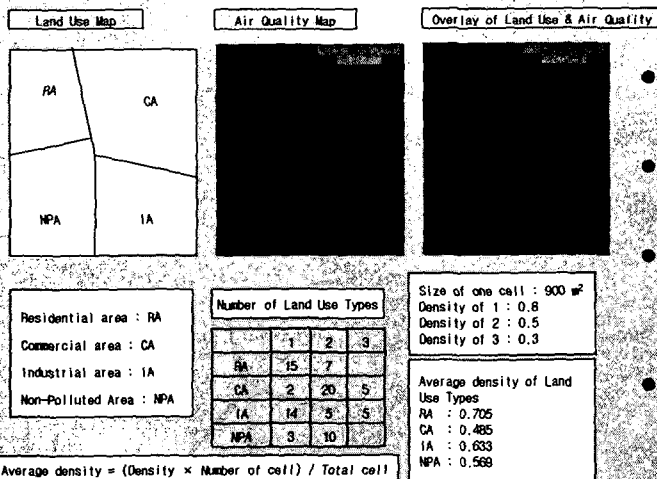
Re-classification of land use

Large Classification	Middle Classification	Reclassification
Urban/ Arid Area	Residential Area	Residential Area
	Industrial Area	Industrial Area
	Commercial Area	Commercial Area
	Traffic Area	Traffic Area
	Recreational Facilities Area	Non Polluted Area
Public Facilities Area		
Rural Area	Rural Area	
Forest Area	Forest Area	
Grassland	Grassland	
Wetland	Wetland	
Wasteland	Wasteland	
Water Area	Water Area	

- Current the Land Cover Classification : large classification and the middle classification
- Difficult to analysis for the environment
- Re-classification of existing land use counting air environment.

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Basics of correlation analysis

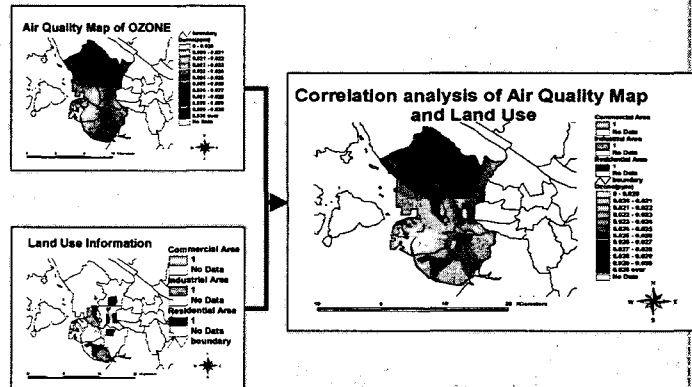


- Mapping of Land use types
- Mapping of air quality
- Overlay analysis of land use and air quality
- Correlation analysis of land use information and air quality information

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Experimentation

- Correlation analysis of air quality information and land use information



- Drawing air pollution map of ozone for mid-summer
- Selecting area in which land use patterns appears clearly
- Correlation analysis between land use and air quality

Remarking conclusion

From this study, following results are found:

- The GIS technique has a great deal of potential to analyze the air quality information, to produce useful information, and to ease the efforts for air quality management.
- The newly developed classification system is suggested to utilize in the analysis of air quality information.
- A reasonable correlation between land use and air quality is observed in a local area concerned in this study.