

**CO2 EMISSION INVENTORY FOR TURKEY AND MAPPING BY GIS TECHNIQUES****A. Can<sup>1</sup>, A.T. Atımtay<sup>2</sup>**<sup>1</sup>*State Institute of Statistics, Ankara, Turkey*<sup>2</sup>*Middle East Technical University, Environmental Engineering Department, Ankara, Turkey*

It is an observational fact that atmospheric carbon dioxide (CO<sub>2</sub>) is increasing and will continue to increase in the future due to usage of fossil fuels for the generation of energy. Together with CO<sub>2</sub> many other pollutants may be generated. However, CO<sub>2</sub> cannot be removed like other pollutants and it causes greenhouse (GH) effect and ultimately climate change. In this study, very detailed CO<sub>2</sub> emission inventory has been prepared for the first time in Turkey. CO<sub>2</sub> emissions for the year of 1995 from the households, industry and thermal power plants were calculated for all 910 districts of Turkey and this has been investigated by using Geographic Information System (GIS) techniques. Scaled emission maps were prepared by using GIS programs according to the emission inventory formed. The CO<sub>2</sub> emission inventory was prepared by considering the total amount of fuels used in provinces with respect to sources, then this inventory was linked to the GIS mapping of provinces. The emission of CO<sub>2</sub> was calculated by using the IPCC-Tier 1 method. The result of this study shows that, the maximum emission from households is observed in Bakırköy and Kartal districts of İstanbul province with 2.6 and 1.3 million tons/year and the maximum industrial emission is observed in İskenderun district of Hatay and Eğreli districts of Zonguldak provinces with 5.9 and 5 million tons/year, respectively. Finally, Afsin-Elbistan power plant in K.Maraş province emits 61.8 million tons/year, which is the highest emission rate among the power plants.