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The role of population density on the impact of urbaniza-tion on GHG emissions in China

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Urbanization directly drives rural to urban population migration and indirectly causes west to east migration in China, two phenomena that may significantly impact China's greenhouse gas emissions given its huge population and vast difference between the western rural and eastern urban areas. These two phenomena were analyzed by using emissions as a per capita term, and extending the impact from the traditional urbanization rate effect to include population density effect. The results show that population density has actually been the dominant demographic player in changing per capita emissions for the past two decades in China, and its elasticity changed from positive in economically less-developed provinces to negative for the developed provinces. This study provides a new perspective in the study of the relationship between urbanization and greenhouse gas emissions, and the results indicate that population density change should be taken into account to accurately assess the impact of urbanization.