



A SPATIAL ANALYSIS OF POPULATION GROWTH AND URBANIZATION IN CALAMBA CITY USING GIS

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ABSTRACT – There is a need to analyze spatially population growth and urbanization in order to develop contextualized mitigating measures and integrated development plans for urbanizing areas. The rapid advances in GIS technology could support such analysis, and project which spatial unit needs an immediate implementation of interventions. The current study was conducted to analyze population growth and urbanization vis-à-vis their geographic location in the study site. Management and research implications are identified and recommended based on the observed trends of the spatial changes. The analysis covered two periods: 2003-2010 and 2010-2015. Digitized land use-land cover (LULC) maps of the City (i.e. 2003, 2010) were obtained from the National Mapping and Resource Information Authority (NAMRIA) and Calamba City Planning and Development Office, and were geoprocesed in a GIS environment. Population data (i.e. 2003-2015) were obtained from Calamba City Planning and Development Office (CCPDO) and National Statistics Office (NSO), and were fed to the barangay map of the City. Using the geoprocessing functionality of the GIS software, the three maps were intersected. The spatial distribution of the changes in LULC to built-up area and population within the period of analysis was determined. Results indicate that most of land conversions involved the conversion of annual cropland to built-up areas in highly populous barangays. This supports findings of other studies that population growth drives urbanization and landscape change. It is important that environmental policies and management strategies should effectively and efficiently be implemented in these areas to curtail environmental impacts of urbanization and population growth. Studies that monitor the behavior of the people towards environmental management and policies should be conducted.

Keywords: spatial analysis, population growth, urbanization, GIS, Calamba



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