Population Density Mapping Based on Build up Area using GeoEye Image and GIS Technique: Saltlake City, Kolkata.

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Key words: Geoinformation/GI; Remote sensing; Population

SUMMARY

Population density is the number of people per unit of area usually per square kilometer. It can be measured by the new developed methods like counts of dwelling units, measurements of land areas, land use classification and spectral characterization of images. The quantitative revolution in remote sensing and GIS technology used to collect the new and reliable data for population explanation or analysis purposes. In this research population data of 2011 and GeoEye imagery of 2010 with 0.6 m resolution were used to get the final Population Density Map based on build up area/square km of Saltlake City. whereas Arcgis v10.1 were also used for on screen digitization and for data management. GeoEye image for saltlake city is suitable for accusation of build up area because of 0.6m resolution and secondary population data were designed with Personal Geodatabase (PGDB). The high population densities were found in 4, 19 and 20 block that is 103.58, 103.34, and 119.77 Sq Km/Person, where the area were measured 187.81, 288.49, 161.89 sq km respectively. The block no.9, 15 and 21 were found as medium density. Rest of blocks was found as low density. It was highly appreciate that block no 19 is a slum and having highly dense build up area with 9336 population. But for block 4 and 20 buildup areas are highly dense with arranged multistory building but having 8161 and 7927 population. For medium category population density block 9 and 15 are fitted but for 21 block where maximum build up areas for offices and recreation purposes was not fitted because of low dense population. For low population density all blocks are in acceptable category. However the experiment over Saltlake city can be explained statistically with four relationship i) Where number of population is higher/sq km, administrative area and build up area relatively lesser the Population Density is experienced high ii) Where the number population is higher/sq km, administrative and build up area is also relatively higher, the Population Density is low. iii) Where the number of population low, administrative and build up area is relatively medium, the population density is low. iv) Where the number of population, administrative and build up area in medium range, the population density also experienced medium. Even there is a hurdle to produce population density map based on build up area but still can be used and tested for other cities of India and this will consume the time and finance for the government authorities for national level Census. Key Words: Remote Sensing, GIS, Population Density Mapping.