

## CRIME MAPPING USING TIME SERIES ANALYSIS IN ASABA, DELTA STATE, NIGERIA: A REMOTE SENSING AND GIS APPROACH

**EJEMEYOVWI, Danny Ochuko (PhD)**

Snr. Lecturer, Department of Geography & Regional Planning  
Delta State University Abraka, NIGERIA

### ABSTRACT

This study primarily focus on the potential of using remote sensing and geographic information systems (GIS) techniques for crime mapping and attendant management in enhancement of tight security. Without adequate security as in advanced countries fin an enabling peaceful environment to achieve the eight point agenda of millennium development goal (MDG) adopted by the government, is a nullity It has been observed that a large portion of the men in the Nigerian police can hardly ascertain the area of jurisdiction within their station or could define the shortest distance en-route station to specific crime areas in Asaba, Delta state capital the study area. Thus, the police are far from being well and evenly distributed according to geographic spread, population characteristics or crime incidence. The research method involved primary and secondary data for two sections of time series years (A) 2000 – 2006 and (B) year 2004 – 2010 which are the most potent crime related years since the history of state creation are involved. Primary data involve the use of high spatial resolution remotely sensed satellite digital data Landsat TM -2010 image, base maps and crime data from police headquarter. For secondary data, in section A 200 questionnaires were also administered for detailed information. This involved random sampling using 40 questionnaires for each of the five divided zones namely: 1. Nnebesiroa,, 2. Cable point/traffic light area, 3. DBS/government house area, 4.Ezeneiavenue and 5. Dennis Osadebe way, For the year 2000 – 2006 the analysis and interpretation were carried out using Arc View 3.2 GIS software to present the extent of crime rate in the area. Section B involved collection of crime data for the year 2004 -2010 and analysed with ArcGIS, version 9.3 developed by ESRI. Here, four classified zones namely (1) Okpananm road areas,Nnebisi road, West – End and Asaba- Onitsha express; (2)EzeneiAvenue and Cable point, (3) Umaje, Umuagu, Ibusa road and Isieke area and lastly, (4) Direct Labour Road (DLA), and Summit junctions. These areas classified in the two analyses using their current base maps, are denoted as high, medium and low crime rate zones using crime maps of the two sectional time periods. Thus, five and four zones of major crime incident areas were identified for sections A and B respectively based on the integration of crime rate data superimposed on the base maps generated for crime detection, prevention and control.

**Keywords:** Security, Crime, Remote Sensing, Geographic Information Systems, Mapping, Management, Detection, Prevention and Control.