GIS in Crime Study - a case of Dimapur Municipality

NAGALAND GIS & REMOTE SENSING CENTRE, JUNE 2014

NGISRSC

CRIME MAPPING AND CRIME ANALYSIS

Crime mapping involves theanalysis of crime are processing of spatiallyrecognized as powerful tools referenced crime data infor the study and control of order to display visually incrime, because crime maps an output that is informativehelp police identify to the user, and Crimeproblems at the micro level. analysis is a set of processesNot only GIS allows applied on relevantintegration and spatial information about crimeanalysis of data to identify, patterns. Administrative andapprehend, and prosecute operational personal cansuspects, it also aids more use the result of analysis toproactive measures through prevent and suppress ofeffective allocation of criminal activities and alsoresources and better policy for investigation aims. Crimesetting.
mapping and spatial

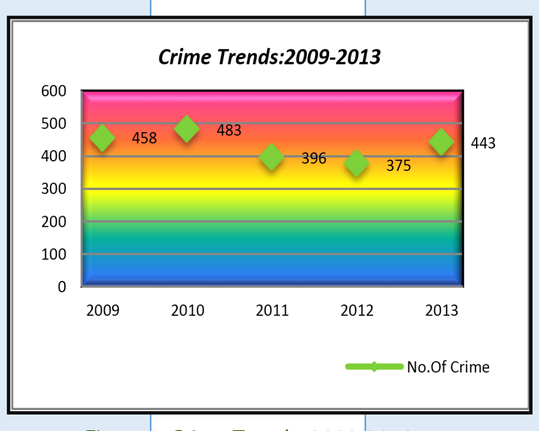

Figure1: Crime Trends: 2009-2013

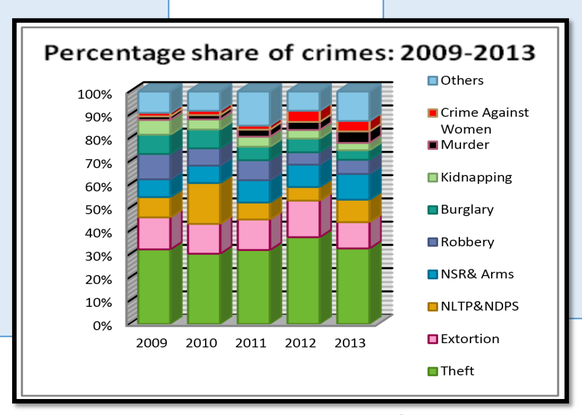

Figure2: Percentage share of crimes

CRIME IN DIMAPUR

Crime is very common in Dimapur and cases are registered everyday. In Nagaland, Dimapur records the highest number of cases in a year. Figure 1 shows the trend of crimes over the years. The highest number of cases registered is the theft cases which accounts for about 30% of the total and most of the cases related to theft cases are the Automobile theft.

Extortion is the next common case followed by the NLTP& NDPS cases and NSR& Arms act cases. The number of registered cases like the robbery cases, Burglary and kidnapping cases are declining over the years where as the murder cases and the cases related to crime against Women are increasing over the years (Figure 2).

POLICE STATIONS AND ITS JURISDICTION

In Dimapur municipal area there are four police stations, and the whole area is divided into three jurisdictions, the East Police Station, the West Police Station and the Sub Urban Station for police administration purpose. It is clear from figure 3 that the East police station jurisdiction which is represented by pink colour covers the largest area.

Figure 5 shows the number of crime incidents reported from different colonies in Dimapur. It is clear from the given figure that highest number of cases is registered from localities such as the Kuda village, Burma Camp, the Railway Station and Railgate area, the Hong Kong Market and the New Market etc.

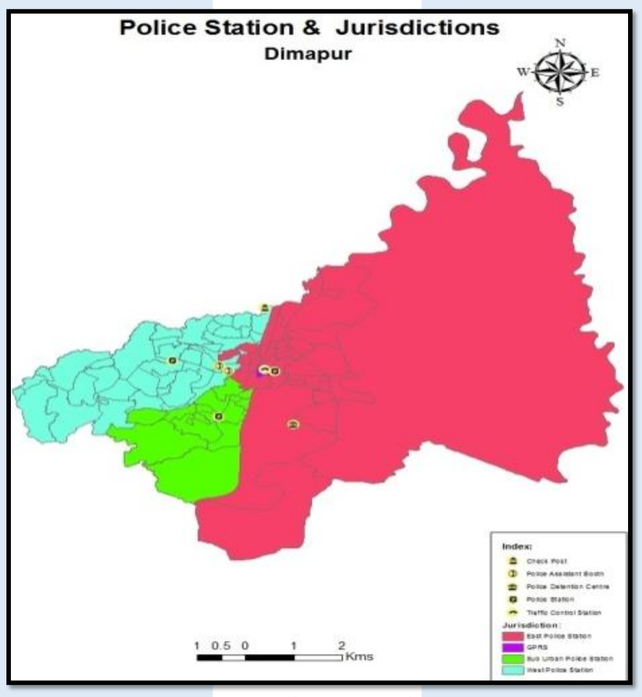

Figure 3: Police Jurisdictions

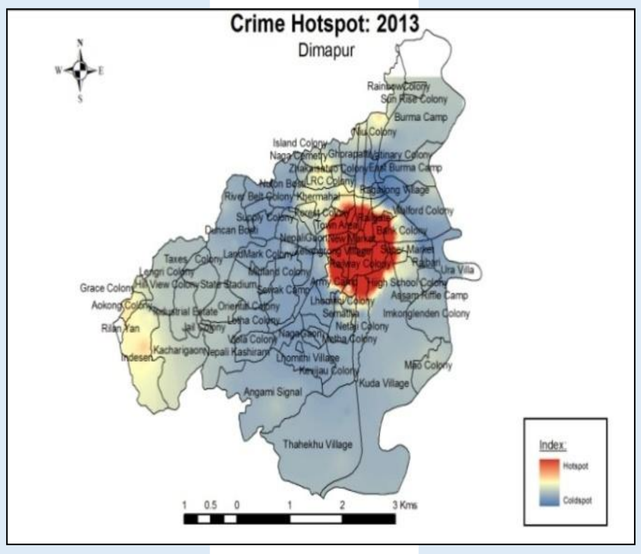

Figure 4: Crime Hotspot: 2013

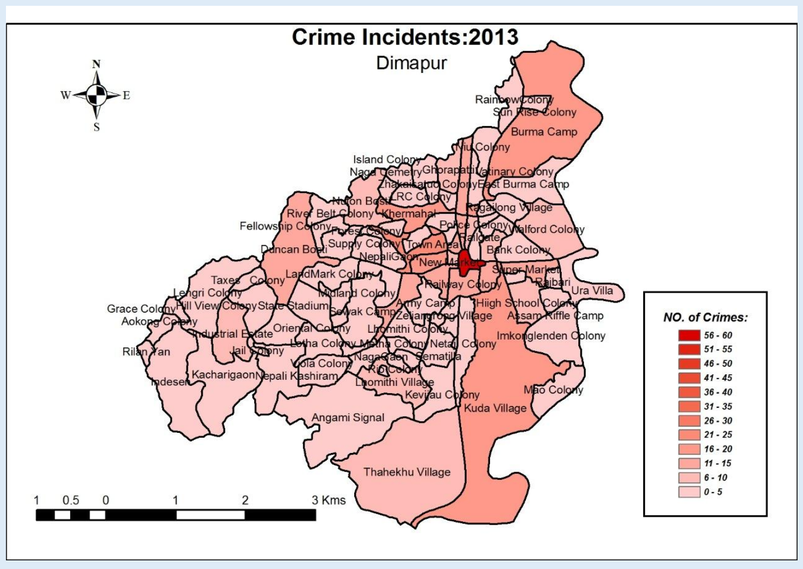

Figure 5: Crime incidents: 2013

The spatial aspect of different type of crimes was taken up, and theft cases were the most common, especially the automobile theft and among the automobiles the most common items stolen are the motor bikes. Figure 6 shows the location of the incidents of theft in the year 2013. The study area is divided into grids of 100 meters each and it shows the number of incidents which took place within the grid.

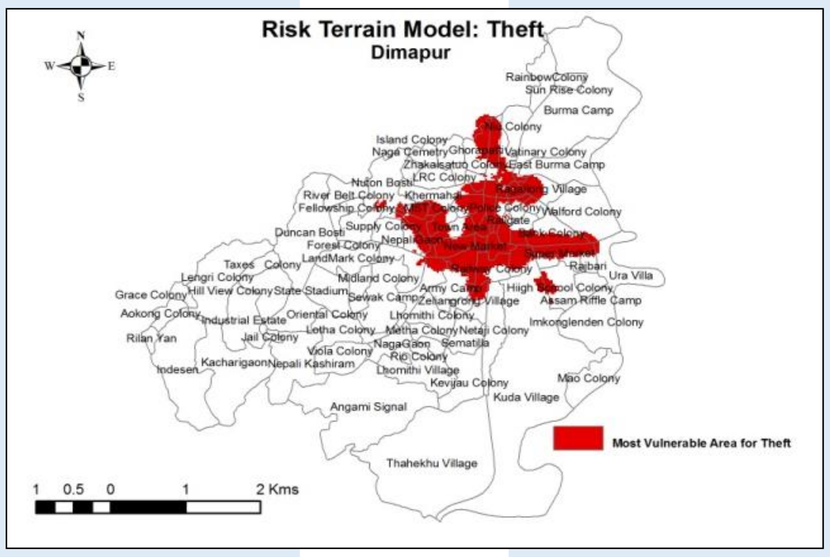

Figure 7: Risk Terrain Model: Theft

HOTSPOT OF CRIMES

Hotspot analysis was carried out in order to get a bigger picture of the statistically significant areas of Crimes in Dimapur. The hotspot of crime for the year 2013 is given in Figure 4 where the red colour represents the hotspot of crime and the blue areas are the coldspot of crime. The areas falling under the Hotspot of crime are mostly the commercial areas of Dimapur like the Hongkong market, the super market area, the New Market Area, Marwari Patti, City Tower area, Railway station etc. and the study of the last 5 years shows almost the same trend.

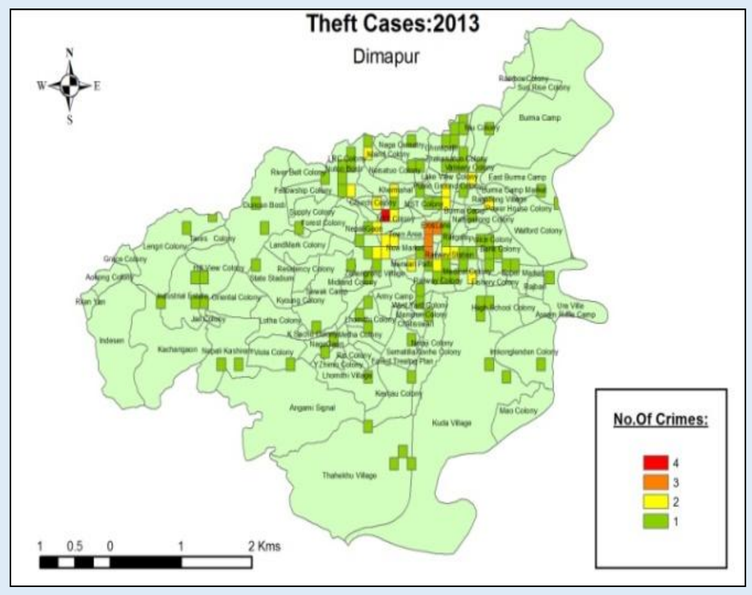

Figure 6: Location of reported Theft Cases: 2013

Risk terrain modelling (RTM) is an approach to risk assessment in which separate map layers representing the influence and intensity of a crime risk factor at every place throughout a geography is created in a geographic information system (GIS). one such RTM was created (Figure 7) for the theft cases taking into consideration the different factors which influences such type of crime to take place in a particular area. In the given figure the red areas shows the most risky area for theft.

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