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# Landuse /Landcover pattern of River Front along the city of Patna (India)

**Shankar Dayal and D.S.Pattanaik**

*Department of Geology, Utkal University, India*

*Email: shankard656@gmail.com*

## Abstract

Patna (85002'E 25038'N-85016E 25033'N), the capital of Bihar (India) is one of the most ancient cities of India and is flourishing with administrative, commercial and educational activities. The city had been rulers for 1000 years, like Ajatshatru, Chandragupta Maurya, Ashok, Gupta, Pala, Shershah Suri, and Azimush-Shan grandson of Mughal emperor Aurangzeb who renamed it Azeemabad. The city is surrounded by three rivers River Ganga which is fringing the northern boundary of the city, river Son which is 35km west of Patna city and river Punpun which is flowing south of city. The town has grown in linear manner along the southern bank of river Ganga for about 25 km in East-west direction with an average width of 3.5km in North- South direction. Patna Urban area is located on the Right bank of the river Ganga with a mean elevation of 154ft (47m) above mean sea level.

Sequential changes in Landuse/Landcover of River Front along the city of Patna had been studied from Landsat TM digital satellite data of pre monsoon (April) 1975, 1988, 1999 and 2010 on GIS platform. The exploratory analyses tasseled cap transformation and normalized difference vegetation index (NDVI) were generated. The land use/land cover pattern of the River front along the city of Patna had witnessed positive growth and negative growth. The positive growth mean that there is increase in area of factors responsible for LULC whereas negative growth means there is decrease in factor responsible for LULC. The increasing and decreasing factors had contributed to city growth along the River Front. The river Ganga which was flowing along the city of Patna has shifted northward and vast area along the city is occupied by Sandbars. These Sandbars are occupied by Settlement and Agricultural land. The city is growing in hapharzd manner and virtually occupied the flood plains of River Ganga .The Agricultural land and surface water are fast receding from main city. Therefore, during the last 35 years river front has changed many folds.