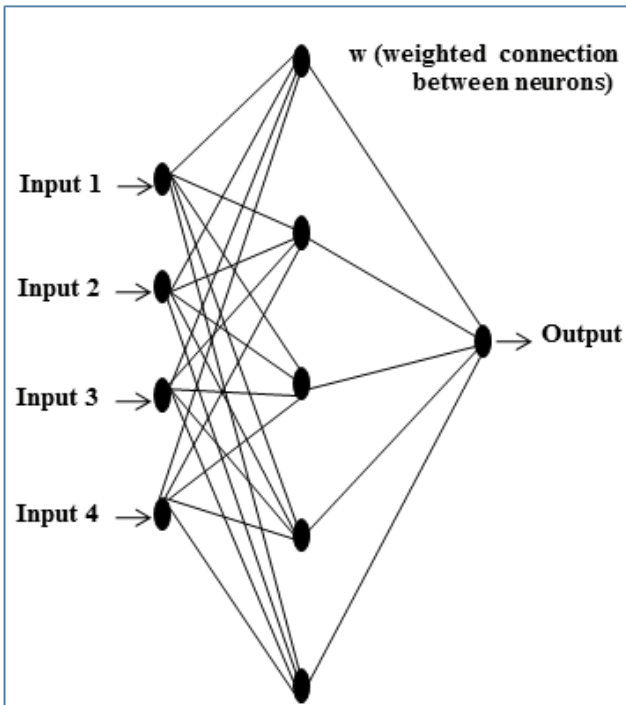
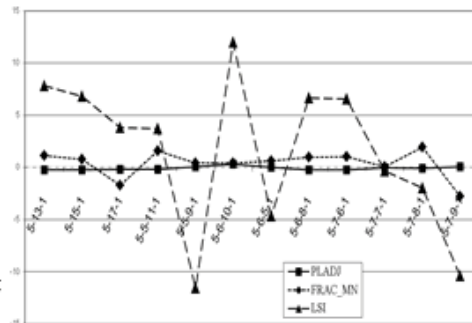


URBAN SPATIAL GROWTH MODELING



Input Layer Hidden Layer Output Layer

Feed forward MLP ANN architecture



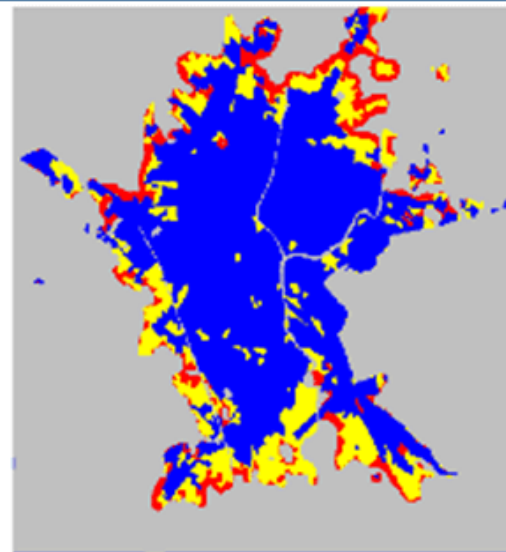
Spatial Metrics (2008)

For each metric, percentage difference from the that of the actual scenario was calculated for 2008 and plotted in line graph.

$$\left[\frac{SM_s - SM_r}{SM_r} \right] * 100$$

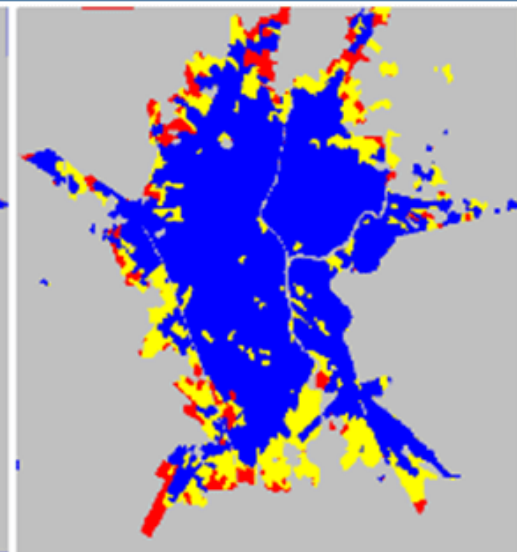
SM_s : Spatial metrics calculated from simulated map
 SM_r : Spatial metrics calculated from actual map

- Use of Levenberg-Marquardt version of Back propagation algorithm in ANN delivered better results as compared to traditional BP algorithm.
- ANN based urban growth zonation maps may provide a valuable inputs to urban planning authorities for regulating urban growth



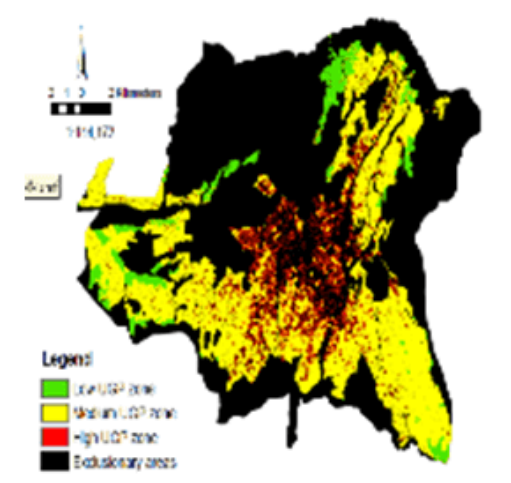
Simulated Development for 2001

1993 1998 2001



Actual Development for 2001

Calibrated Results of MCC-CA Model



ANN Based Urban Growth Zonation Map