

C  
9/10/22  
BAN

am

**A STUDY OF URBAN DEVELOPMENT IN CITY OF GALLE USING  
GIS AND REMOTE SENSING**

A PROJECT REPORT PRESENTED BY

**ASELA BANDARA**

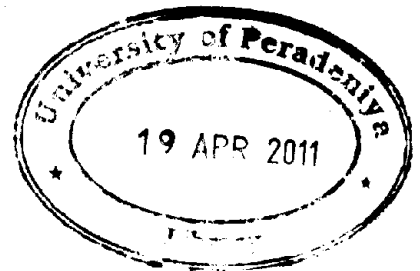
to the Board of Study in Earth Sciences of the  
**POSTGRADUATE INSTITUTE OF SCIENCE**

*in partial fulfilment of the requirements  
for the award of the degree of*

**MASTER OF SCIENCE IN GIS AND REMOTE SENSING**

of the

**University of Peradeniya,  
Sri Lanka  
2010**



**641585**

# **A STUDY OF URBAN DEVELOPMENT IN CITY OF GALLE USING GIS AND REMOTE SENSING**

**S.M.D.A. Bandara**  
Postgraduate Institute of Science  
University of Peradeniya  
Peradeniya  
Sri Lanka

## **ABSTRACT**

Understanding of spatiotemporal behavior of urban growth will foster the sustainable development strategies and minimize the future disaster risk on human environment. This requires accurate information bases and robust analytical technologies.

Remote sensing and GIS are useful tools for the formulation, implementation and monitoring of urban growth within the context of a sustainable development strategy. The combined approach of remote sensing, and GIS is facilitating powerful, and may prove a productive new direction for the improved understanding, representation and modeling of the spatiotemporal forms due to the process of urbanization. So this Study explores the integrated application of earth observation and geospatial science to the analysis and modeling of urban growth that have been experienced in last fifty years in Galle, Sri Lanka.

Galle is the largest city in southern Sri Lanka, which is a port city with a harbor nestled with commercial, residential and fisheries land uses. Despite the slight economic damage incurred by 2004 tsunami, Galle shows no signs of slowing down and likely continues unabated into the next two decades with its urban sprawl. In the repercussion of tsunami, Galle has been identified as one of the most vulnerable coastal city for future coastal disasters.

Rapid urbanization is taking place and pushing up the demand for various lands uses mainly residential, commercial, industrial etc. Indeed land is the essential component in this process as in all urban growth. This growth has been associated with increasing pressure on land for human settlements and related urban activities.

This study focused on quantitative analysis of urbanization. The result indicate that there has a 229% increment of urban cover since 1956 to 2001 in the Galle city with annual growth rate of 5%. Built up landuse class has the largest share of the area in the all the time spam. As 71% area of the study area was built up in the 1956 and 89% area of the study area was built up in 2001. The area covered by transportation and infrastructure is approximately constant after 1982 because all most all the infrastructure and transportation facilities have been developed until 1982.