Applications Of GIS In Tourism Planning

Presented by: Taher Al-shahari
Supervised by: Dr. Baqer Al-Ramadan
INTRODUCTION

- Tourism and IT are two of the most active motivators of the rising of the global economy

- GIS technology offers great opportunities for the development of modern tourism applications using maps
WHAT IS GIS?

A computer-based technology for analyzing and mapping characteristic measures of the earth to integrate database operations:
Applications of GIS

- Tourists flow management
- Resource use and facilities inventory
- Tourism site selection
- Sustainable tourism planning
MAIN OBJECTIVES

- Describe the use of GIS & RS in ecotourism development
- Identify land use change over the years using satellite data
- Using GIS technique to protect biodiversity
CASE STUDY

- Application of GIS in ecotourism development in Sundarbans region, Bangladesh

Area Description

- Area is approx. 139,500 hectares
- Population, approx. 3 million
- The largest mangrove forest
CASE STUDY

Sundarbans’ mangrove forest

- 200 islands
- 400 interconnected tidal rivers, creeks and canals.
Case study motivations:

- Increase deforestation
- Lose Biodiversity

**Sundarbans’ mangrove forest**

- Rich biodiversity
- Wide range of fauna
Causes of land use changes

- Climate change effects
  - Floods and cyclones

- Tourists activities
  - Watching wildlife in forest,
  - Fishing, wood cutting, honey collection, timber production
  - Enjoying various local cultural festivals

GIS is important to make guidelines for ecotourism planning and visitor management.
Recognize land use change over the last 33 years using satellite data

Investigate causes of land use changes due to
- Human activities
- Natural hazards over time
Methodology

Data collection

- Raw satellite images of Sundarbans have been collected from 1977 to 2010 for land use classification

Digital Image classification

- Image Enhancement
- Image Classification and Analysis

The purpose is to identify changes in vegetation
Results and analysis

The maximum likelihood classifier
To identify forest cover change

Land use Map 1989

Land use in 1989

- Keora and Bare Land: 25%
- Gewa: 16%
- Sundri: 11%
- Sundri and Gewa: 2%
- Pussur and Baen: 46%
Results and analysis

Land use Map 2000

Land use in 2000

- Keora and Bare Land: 24%
- Gewa: 11%
- Sundri: 9%
- Sundri and Gewa: 3%
- Pussur and Baen: 53%

CRP 514: Introduction to GIS
Results and analysis

Land use Map 2010

Land use in 2010

- Keora and Bare Land: 7%
- Gewa: 4%
- Sundri: 22%
- Sundri and Gewa: 32%
- Pussur and Baen: 35%
Results and comparisons

Maximum likelihood classification results

![Land use Change between 1989-2010](chart.png)
Results and comparisons

Normalized Differential Vegetation Index (NDVI)
Used for forest density measurements
The ultimate goal of GIS database is to produce an ecotourism map for Sundarbans, based on:

1- Administrative information map
COSTRU CTING ECOTOURISM PLANNING MAP

2- Accessibility map
3- Present land use map
3- Existing tourism facilities map

COSTRUCTING ECOTOURISM PLANNING MAP
ECOTOURISM PLANNING MAP
CONCLUSION

Tourism is a complex activity, thus, requires tools that GIS is a strong and effective tool that can aid in tourism planning and decision-making.

GIS technology can play an important role in:
- Auditing environmental conditions
- Examining suitable developments sites
- Impact assessment for tourism activities
- Visitor flow management
- Identifying conflicting.
It can be recommended that GIS can be used for monitoring tourism effects over time in an environmentally sensitive regions in KSA.
REFERENCES


Thank you