Site Suitability for Ecotourism using GIS & AHP: A Case Study of Surat Thani Province, Thailand

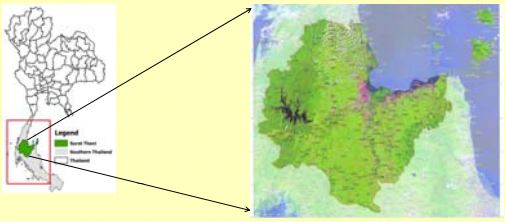
Khwanruthai Bunruamkaew

Division of Spatial Information Science, Graduate School of Life and Environmental Sciences, University of Tsukuba
Email: krt_b@hotmail.com

1.INTRODUCTION

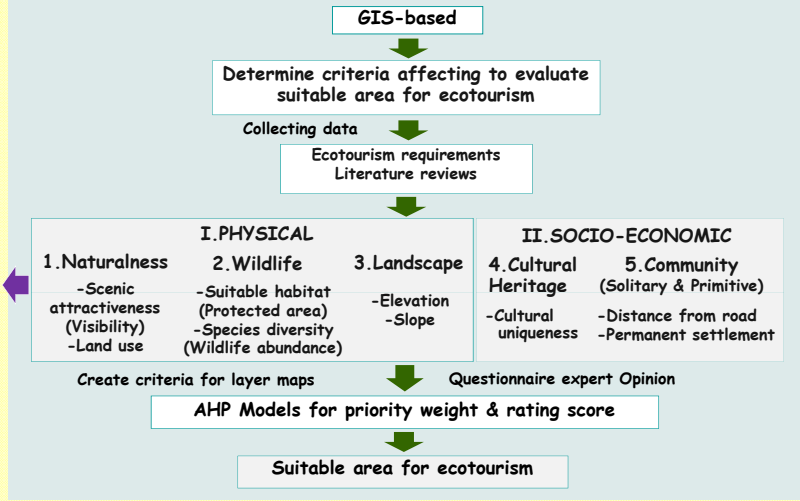
Early ecotourism destinations in Thailand have suffered extensive impacts as a result of increased numbers of tourists. The experiences of ecotourism practices in Thailand show some successes but also show how the mismanagement of the ecotourism development process could lead to confusion. It is imperative that only some areas are suitable for ecotourism to be developed and ensure that ecotourism criteria are matched with the basic resource characteristics of the area.

Surat Thani Province is located in southern Thailand (see map), which 49% of the provincial area is mountainous with high mountain ranges along the north and south of the area. There are some important attributes should be considered in order to develop the successful ecotourism in Surat Thani Province. For instance, it should largely free from urban settlements with untouched landscape, a rich vegetation cover, considerable wildlife, traditional indigenous population, and recreational tourist attractions. Therefore, sustainable management of ecotourism in this area is very important to Thailand's long-term commitment to sustainable development. In this research, the AHP and GIS were effectively used for identification of the potential ecotourism sites.



2.METHODOLOGY

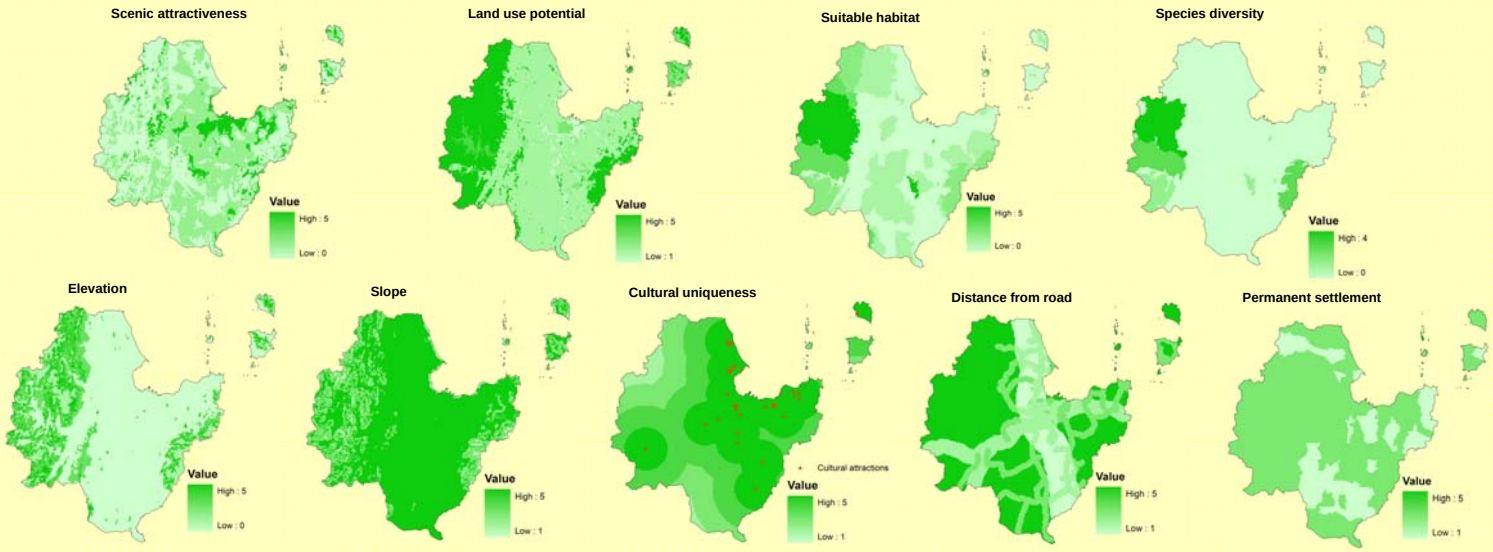
2.1 Analysis process of site suitability for ecotourism



2.2 Factor rating of land quality for ecotourism

Diagnostic factor	Unit	Factor rating				
		5	4	3	2	1
1.Scenic attractiveness (Visibility)	Range	Near range	-	Middle range	-	Far range
2.Land use potential	Class	High	-	Moderate	-	Poor
3.Suitable habitat	Class	High relative	-	Medium relative	-	Little relative
4.Species diversity	%	> 30%	20-30%	15-20 %	10-15 %	5-10 %
5.Elevation	m.	300-400	200-300	100-200	400-500	> 500
6.Slope	Degree	0-5 %	5-15 %	15-25 %	25-35 %	> 35 %
7.Cultural uniqueness	Class	Very strong	Strong	Moderate	Little	Poor
8.Distance from road	km.	Areas outside of any buffers around all roads	-	Areas within 2 km. buffer around main roads in province	Areas within 5 km. buffer around secondary highways	Areas within 10 km. buffer around main highways
9.Permanent settlement	Population Size	0	-	1-1000	1001-10000	>10000

3.RESULT *



Data layers are considered as important factors for developing ecotourism site in Surat Thani Province

Note: The areas that characterize relatively high potentiality for ecotourism are based on the greenness (values from 0 to 5).

4.CONCLUSION

The present study provides a methodological approach to assessing the suitability of ecotourism in the Surat Thani Province, Thailand. This methodology integrates five characteristics of ecotourism criteria that are naturalness, wildlife, cultural heritage, landscape and community. The evaluating process for ecotourism site was done based on 9 chosen factors which are scenic attractiveness, land use, suitable habitat, species diversity, elevation, slope, cultural uniqueness, distance from road and permanent settlement in the area. These factors were selected according to the professional opinions given. In the future work AHP technique will be used in order to calculate the detail of the factor and class weights and then GIS technology will aggregate the layer objects in order to determine the suitable areas for ecotourism.

* This research is a part of doctoral thesis. The research analysis were conducted in Division of Spatial Information Science, Graduate school of Life and Environment Sciences, University of Tsukuba.