

CHAPTER 6

CONCLUSION AND RECOMMENDATION

6.1 Conclusion of this study

Natural resources are an essential component of tourism development. Tourism development utilized resources as the primary incentive for travel to a destination. Wherever there are evidences of impact to natural resources caused by tourism development, it is usually because the inappropriate management or misuse of the basic resource e.g. ocean, mountains, lakes, streams, etc.

Land evaluation in this study used GIS and multicriteria evaluation technique as a potential site selection tool. It is appropriate tool because of its capacity for data storage and retrieval (database), data manipulation, and displaying outputs. GIS can analyze both spatial data and attribute data. This technique can identify a suitable area by considering physical and environmental factor and legal status of the study area. Further more, the output of remote sensing is a good input for GIS analysis. The GIS output can display in cartographic map that support the decision-making. Figure 6-1 shows the process of environmental analysis in GIS.

Categorical maps are commonly produced to represent complex geographical patterns. As such, it is essential that greater efforts be made to deal explicitly with the measurement of error in categorical maps. This paper describes a new approach to assess the accuracy of a thematic map based on fuzzy sets. The suitability of fuzzy sets in the map accuracy context is demonstrated by deriving a set of measure to analyze the nature, frequency, source and magnitude of errors. The approach is illustrated using a simple example, and the results obtained from it are compared with those of the traditional approach. The feasibility of the approach is further discussed using empirical data.

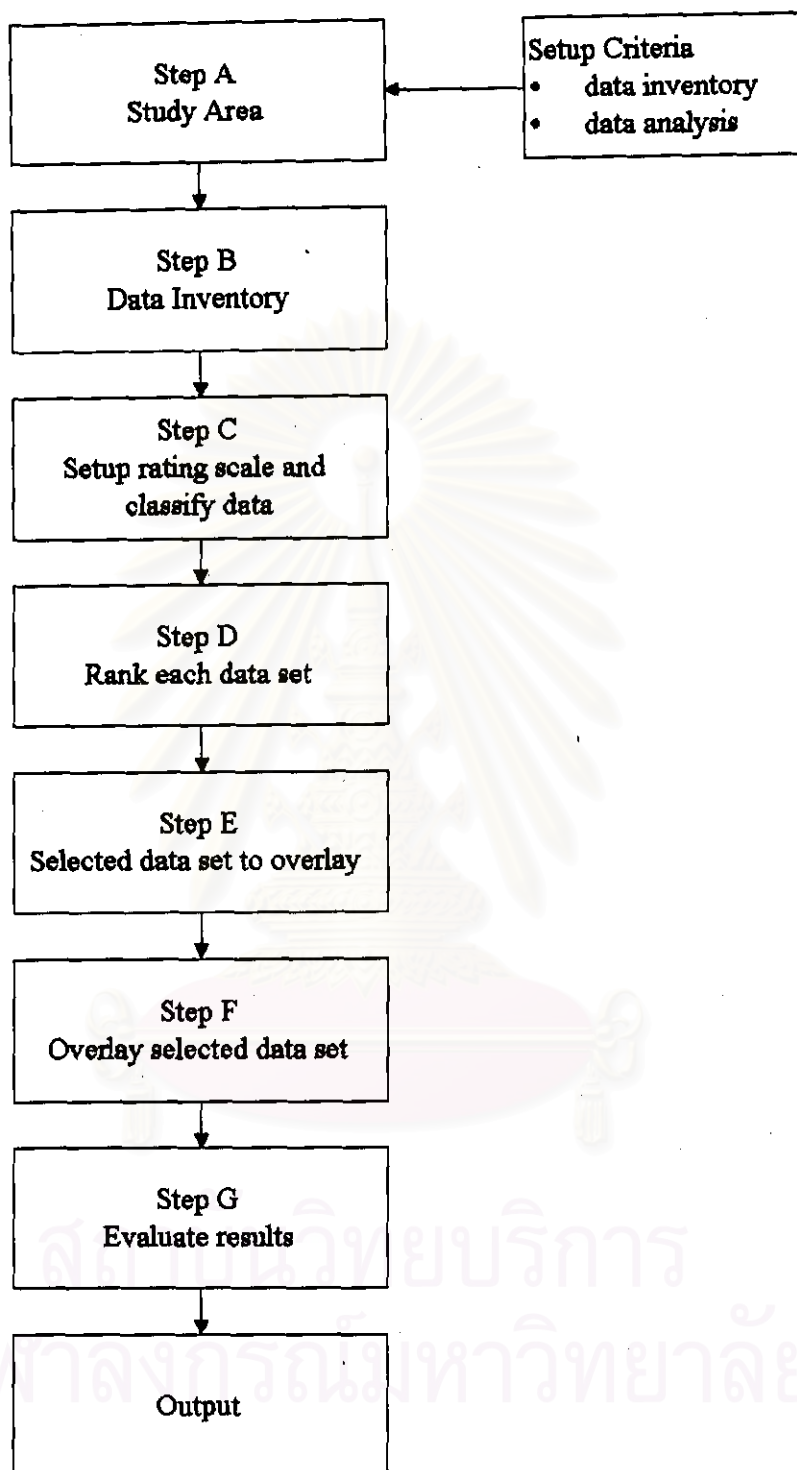


Figure 6-1 GIS process in Environmental assessment

The application of GIS in environmental analysis can apply crisp and fuzzy sets in two stages of GIS data workflow. First stage is to apply rating scale and classify data (step C), this stage will setting up data range for grouping the raw data (given from field survey, mathematical modeling, secondary data collection, etc.) to new group of suitable data for study. Selecting suitable data range will concern about distribution of original data (raw data).

If distribution of data have single mode or have single peak, selected fuzzy set to classify data will give reliable output. Because nature of fuzzy classification, using membership value to classify raw data into two groups. Different from crisp classification, raw data are completely separated into two groups which make non-reliable output data because the data located close to range boundaries are classified into different groups. In real world, situations are quite different.

The second stage of applying crisp set and fuzzy set is to apply weighting importance of factor (step D), because different expert assign different weight in same factor. Because of different experience and different field of interested.

Applying high value of weight with fuzzy logic can produce more suitable area when compare with crisp set. Crisp have sharp clear definition to delineate the boundary of itself but fuzzy haven't. When applied high value of weighting importance into crisp set, the effect of this factor will override others.

In Fuzzy set the area outside the criteria have its membership function in range between 1 and 0. When combined with other factor to produce suitable map it could potentially to promote itself because of its membership function allows itself to be able to combine with other factor.

This study has shown that the application of fuzzy logic in geographic information system as tools for increase precision for find site suitability to developed tourist accommodation area in Sukhothai province with GIS. The GIS input comes from many sources. The concept of integrating fuzzy logic in GIS in this study is not limited to site selection. Being to extract information from the GIS.

6.2 Recommendation for the further study

There are many methods to evaluate the site suitability though a GIS, MCE is the technique this study has adopted for evaluating potential area. However, further study concerning relative factor and giving real weight from expert are main criteria to concern. This study shown that the combination of fuzzy logic with geographic information system can reduce conflict when apply classification range and apply weight of environment factors.

When apply fuzzy set as a tool for classifying under uncertainty weighting criteria, future study should emphasize on the characteristic of data which be classified or assign weight. Applied miss range of classifying data gave different result, future study must, therefore, concern about setting up classification range according to the distribution or histogram of the data.

This study provides the provincial scale of suitable areas that give low environmental impact with supporting infrastructure facilities. It used arbitrarily weighting levels to evaluate effects of applying fuzzy and crisp sets.

Some important information for selecting sites for developing tourist accommodation has not been inserted either because lack of information or area of this factor is too small for evaluation at a provincial scale. Historical location is a main factor to concern because survey of historical location was limited only to Sukhothai and Sri Satchanalai historical parks.

This study used this two main historical areas to generate prohibit area for development. Since there are more historical locations in Sukhothai province, suitable areas in this study may be located on historical sites that were not in the survey. Other infrastructure supports such as sewage treatment, waste disposal, telephone, electricity, etc should be added for further study to make the consideration more comprehensive.

Studies in a larger scale are necessary for further study; because in provincial scale some information will be disappear under a small-scale data. This study provides the evaluation technique for selecting tourist accommodation, which contain

low effects for physical environments, and estimate suitable area, which have potential to develop tourist accommodation.

The concept of integrating fuzzy logic and GIS in this study is not limited to finding tourist accommodation area. Being able to extract information from the GIS. Introducing fuzzy sets to classifier allow vague idea to verified and qualitative expression to be manipulated. It is expected that this study will widen the prospective of using GIS to understand and cope with environmental problems.



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