CHAPTER I

INTRODUCTION

Background Information

Tourism industries are rapidly expanding all over the country. In Asia Pacific, coastal tourism development has the same characteristic namely, they don't have management plan. These are the cause of many environmental problem (Smith, 1994). In Thailand tourism is the largest foreign exchange earnings and thus plays a key role in the country's overall economic growth. Furthermore tourism has good potential to aid in Thailand development efforts. A major tourist draw is the coastal resort. Since 1982, tourism has generated the highest income when compared to other export goods such as rice in our country (Thailand Institute of Scientific and Technological Research : TISTR, 1985). Since the number of foreign tourists in Thailand has been increasing very rapidly, seaside resorts are also expanding. Many new resorts are now developing in alarming rates and styles. There are more buildings coming up, therefore, the pressure on the natural environment has been arisen.

Impact of tourism development on the coastal resources and coastal area are 2 major, namely, land use change and environmental degradation, which has the detail as follows.

1. The degradation of water quality, it is caused by discharging of wastewater from hotels, resorts and other seaside buildings in coastal water such as Pattaya (Smith, 1994).

2. Beach erosion from seaside building construction more close or on the beach.

3. Coral reef degradation, caused by activities of tourists such as walk on the reef flat, anchor damage, reef collection and trade (Sudara, 1989).

4. Coastal area has changed to seaside building and resorts for tourists.

5. Solid waste has been increased from tourist activities and it is the problem about disposal site (Suphapodock and Dobias, 1988).

The study area is one of the most popular tourism place in Thailand, and the tourism growth has been increasing very rapidly.

This study was done by using Landsat Thematic Mapper (TM) satellite data which can presently provide a good spatial resolution enough to detect such change. This is useful for image interpretation for a much range of application particularly for coastal zone monitoring. Because Thematic Mapper has 7 spectral bands covering blue, green, red, very near infrared(VNIR) and two short wave infrared (SWIR) with 30 m resolution and a thermal infrared with 120 m resolution. The satellite cycle was repeated at the same area every 16 days. These advantage help increase the accuracy and the detection can be done accordingly.

Remote sensing appropriate to study land use change because :

1. Remote sensing is the instrumentation that possible to observe the environment with the electromagnetic radiation outside the visible part of the electromagnetic spectrum.

2. It produces measurable physical data about the earth surface.

3. It can record data in the image form of a large area in very short time.

4. It can monitor environmental or global change because the satellite passes over the same area at the certain time.

5. Satellite data, particularly LANDSAT powerful to study land use because it saves cost and time include high accuracy to 80% and decrease field work to 50-70% (Phue, 1992).

Objectives

1. To study land use change at Ko Samui, Changwat Surat-thani from tourism impact using remote sensing techniques.

2. To evaluate tourism impact on coastal environment at Ko Samui, Changwat Surat-thani.

Project Frame Work

The study area

Ko Samui, Changwat Surat-thani is the island that having tourism impact problem and it is the example in this study. Ko Samui located at latitude 9° 30″ N and longitude 100° E. The distance from the mainland is about 20 km., covering 247 square kilometer area (Figure 1.1). Geographical of the island : the middle is the granite mountain cover the area about 53.77% of the total island and an others part are the low land 5.28%, the up land 33% and the long beach 7.95%. The long and beautiful beaches as such, Lamai, Chawaeng, Bo Phut/Phra Yai, Mae Nam, Thong Yang and Ban Na Thon, these are the highly potential and attractive for tourism development. Furthermore, Ko Samui has coral reef around the island. These are the key factors of tourism expansion. Tourism demand has greatly increased and led to a correspondingly high increase in beach development. Since 1972, Ko Samui has tourism development plan. The result of this plan generated many infrastructures like the highway and ferry travel. Recently, this island has the domestic airport that makes tourism business grow very fast. Therefore, tourism is the cause of land use change, example from agricultural to tourism business and services (Uthairangsi, 1986). There are many constructions include hotels and bungalows on the beach.

Tourism at Ko Samui has been developed very fast. Increasing of tourist volume generates the widespread of tourism, while natural environment has been destroyed. It has caused the lost of natural value beach and many pollution. This is the negative impact to environment and ecosystem, and difficult to recover. Because the island is the isolate terrestrial ecosystem that has no relationship with other ecosystem.

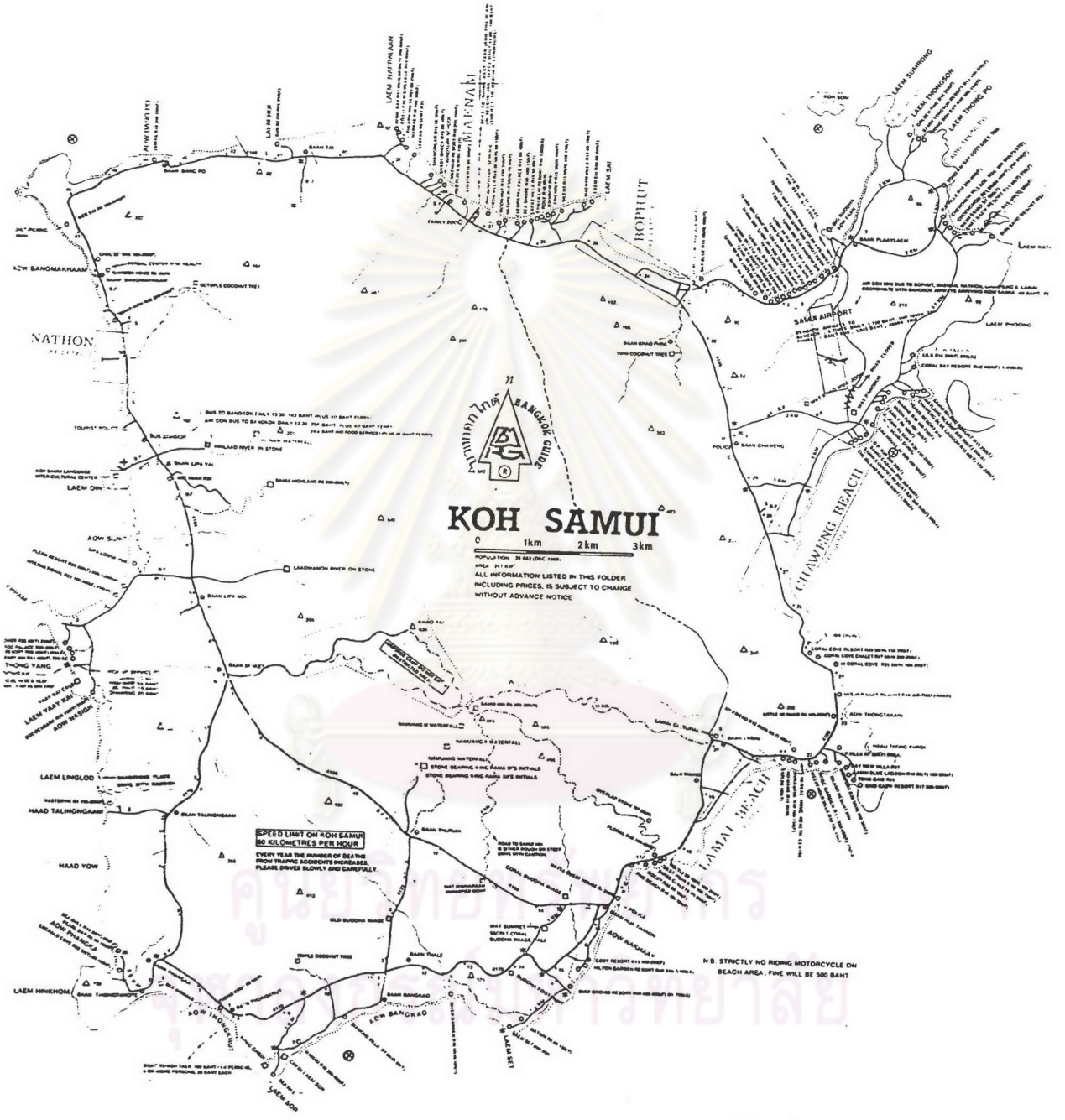

Figure 1.1 Ko Samui map

Scope of work

1. Land use change detection used remote sensing technique. Data used was LANDSAT 5 satellite image that has Thematic Mapper as a sensor. Satellite data can be classified by microBRIAN software.

2. Environmental impact evaluation used geographic information system (GIS) technique. The factors for consideration are beach distance, road distance, slope gradients and legal status. This procedure use IDRISI software for the analysis.

Anticipated Benefits

1 This study is the application of existing satellite data for study tourism impact in physical part.

2 The result is useful for fundamental of tourism management in the other places.

3 This study is the scientific result for tourism impact.