CHAPTER I

INTRODUCTION

I.1. BACKGROUND OF THE STUDY

Currently in Indonesia, it has been estimated that about 85 million hectares are under shifting cultivation, practised by some 20 million people (Dove, 1988). The shifting cultivation areas are mainly outside of Java, such as Kalimantan, Sumatra, Sulawesi and Irian Jaya. In Java, shifting cultivation was practised in mountain regions in the nineteenth century, but is now found only in the west of the island, such as in Baduy area of Banten, West Java (Figure 1). Shifting cultivation in Baduy has long been practised by traditional people.

The Baduy people live in two areas, the inner Baduy (Baduy dalam) and the outer Baduy (Baduy luar). The general description of the Baduy area is presented in Table 1.

In practising shifting cultivation, the Baduy possess some wisdoms concerning soil conservation practices and means of living which are harmonious to the environment. Accordingly, the productivity and sustainability of their shifting cultivation was maintained until recently. At the current time, the shifting cultivation of the Baduy society has undergone many changes. For example, the fallow period

Table 1. A general description of Baduy area

LOCATION	
Watershed	:Ciujung upper watershed
Village	:Kanekes
Subdistrict	:Leuwidamar
District	:Lebak
Residence	:Banten
Province	:West Java
ELEVATION	
Baduy area	:200-450 above sea level
STATUS OF LAND	
Status of Baduy area	:Land owned by Baduy Tribe
RAINFALL	
Average rainfall	:3,084-4,000 mm/year
AREA	
Total area of Baduy	:5,102 ha
Hamlet of inner Baduy	:3 hamlets
Hamlet of outer Baduy	:37 hamlets
LAND USE SYSTEMS	
Settlement area	:25 ha
Permanent forest land	:2,492 ha
Agricultural land	:709 ha
Fallow agricultural land	:1,876 ha
CULTURE AND TRADITION	
Inner Baduy (Baduy dalam)	:More traditional
Outer Baduy	:Less traditional
RELIGION	
All people	:Original Sundanese
POPULATION	
Total population	:1888=1476;1985=4600 people
Inner Baduy's population	:8 per cent of the total
Outer Baduy's population	:92 per cent of the total
SUBSISTENCE	
The main source of subsistence	:Shifting cultivation

of traditional shifting cultivation has been decreased. According to their traditional law (adat), the fallow period of shifting cultivation has to be an odd number i.e, 3, 5, 7, 9, or 11 years, etc. Due to increased population, mainly in outer Baduy area, the fallow period is currently less than 5 years thereby decreasing land productivity.

In the past, some cash cropping is traditionally forbidden, particularly coffee and clove, but with decreasing productivity of their shifting cultivation, there have been more people in outer Baduy who decide to plant those crops. Besides, the people of outer Baduy have also increased the cultivation of upland rice in non Baduy areas by renting some land or share cropping in those areas. These strategies of the outer Baduy people serve to maintain fallow period and productivity of shifting cultivation in their own area. Increasing population and government restrictions on shifting cultivation in non Baduy area has made non Baduy farm land and thus migration out of outer Baduy limited. These situations will have effects on the population density and land productivity in outer Baduy.

Given these changes, a study on increased population on land productivity and community food supply seems necessary. This study will focus mainly on the outer Baduy society because the changes of population, environmental as well as socio-economic conditions are very rapid. In inner Baduy,

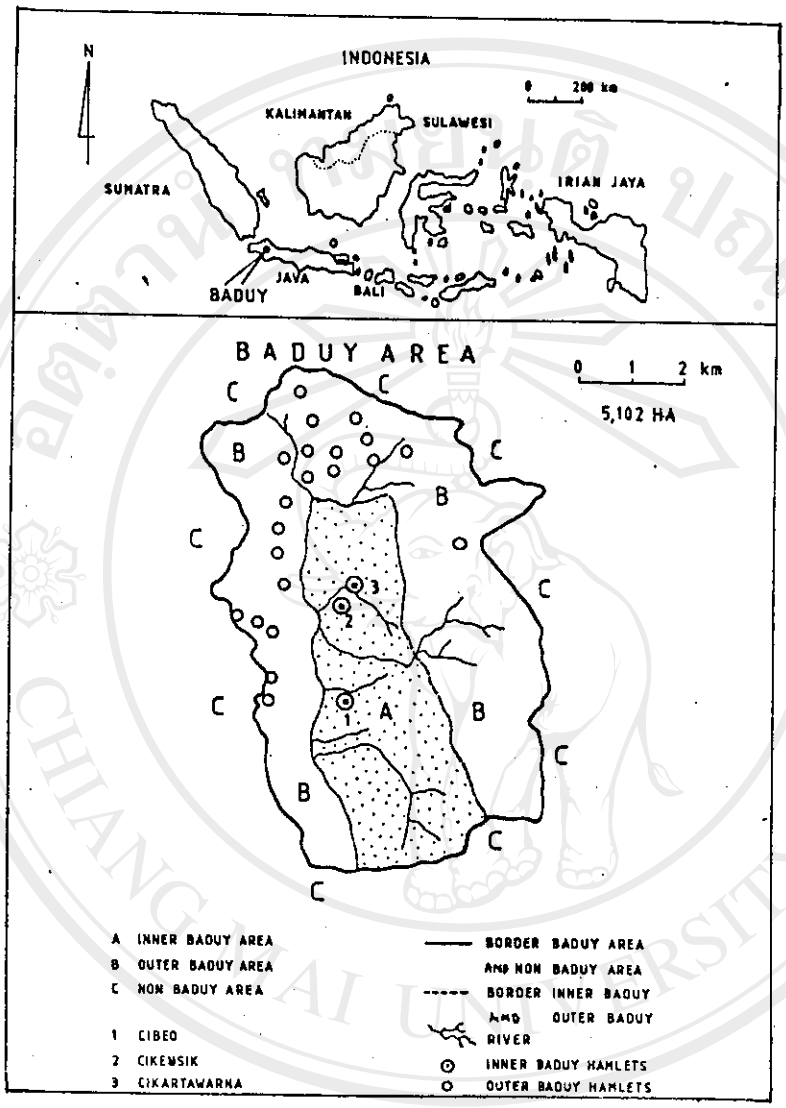

Figure 1. Map of Baduy village, West Java, Indonesia.

traditional wisdom are still in force to help in land and forest conservation.

I.2. RATIONALE OF THE STUDY

The Baduy people heavily depend on shifting cultivation for subsistence. They grow rice in the uplands every year based on their calendar. The cropping calendar and calendar of social events are often closely interlinked. There are also some traditional wisdoms for conservation of land and forest such as the zonation of land use system (Iskandar, 1985). However, the harmonious interactions between the people and their environment have been changed due to increasing population pressure on land. Therefore, the shifting cultivation in Baduy, particularly outer Baduy, is beset by a number of problems, such as forest destruction and soil erosion.

Several researchers of tropical agriculture argue that as long as population density is not critical and fallow periods are long enough to restore soil fertility, shifting cultivation is the ideal solution for agriculture in the humid tropics. However, where it is not properly practiced or when, as result of population pressure and various reasons for intensification of production, fallow periods become drastically reduced, the system will tend to break down, with much erosion and loss of soil fertility and

productivity (Christanty, 1986). Therefore, population pressure is an important determinant of a farming system, especially in shifting cultivation systems (Beets, 1982).

The sustainability of the Baduy society can be consequently threatened given high population pressure, particularly if no constructive possible alternatives have been done. Accordingly the study to understand the shifting cultivation systems in relation to environmental and demographic limitations in Baduy is important.

I.3. OBJECTIVES OF THE STUDY

The major objective of this study is to examine the relationship between population dynamics of Baduy society and the sustainability of their shifting cultivation systems. This will be analyzed by a simulation model with the following proposed specific objectives:

1) To construct a simulation model of shifting cultivation in the Baduy society using available data;

2) Using the constructed simulation model, to examine the effects of changes in shifting cultivation production systems on forest area and agricultural land productivity in Baduy society;

3) To identify the relationships between land productivity, crop production and food resources, food consumption and household income in Baduy society using the constructed simulation model; and

4) To evaluate alternative policies toward sustainable shifting cultivation in Baduy society.