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THE IMPACT ASSESSMENT OF TOURISM DEVELOPMENT
ON AGRICULTURAL LAND USE

A Case Study of the Impact on Traditional
Village Land use Patterns in Bali



by

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ABSTRACT

The impact of tourism development on traditional village land use patterns, as perceived and evaluated by villagers, should be considered in evaluating the desirability of particular development programs or projects for regions such as Bali. The preservation of Balinese culture is accepted as an essential goal by virtually everyone in Indonesia, especially in Bali, but inevitably there is a continuing debate over the negative and positive impacts of the intrusion of massive tourism development on that culture.

Tourism development cannot occur in Bali without the loss of some agricultural land, some changes in traditional village land use patterns, and some decline of Balinese culture. There will always be conflict between traditional systems and modernization in the process of economic growth. The problems of preserving traditional cultural values and managing the pressures of modernization should be clearly formulated, based primarily on the society's perception and evaluation of the impact of growth on its goal preferences.

Planners must refine their understanding of community interests in order to analyze and evaluate the impact of a given program or project on a given society, communicate with the proponents and opponents, understand their objectives, and measure the community's perceptions and evaluations of the impacts.

The impact of tourism development is discussed in relation to the loss of agricultural land, the change in traditional village land-use patterns and the decline of traditional Balinese culture.

In order to achieve the major goals, continued growth of the region and maintainance of its cultural values, those cultural values which depend upon agricultural activities must first be identified. Specifically, it is assumed that there are strong relationships between agricultural land-use, traditional village land-use patterns, and Balinese culture. Because tourism development in Bali relies heavily upon the Balinese culture to attract the tourists, it is assumed that tourism development directly or indirectly alters traditional village land-use patterns, especially agricultural land-use. The effect of continued uncontrolled tourism will be a decline in agricultural land-use and a change in traditional village land-use patterns, directly affecting Balinese culture. This would then reduce the appeal of Bali as a tourist attraction.

The hypothesis of the study is that those villagers who are in the areas most affected by tourism development will have less traditional attitudes towards the retention of traditional land-use than those who are in isolated areas. Knowledge of these local community attitudes is an important factor in helping to mediate and plan to avoid the conflict between tourism development and traditional systems. This is particularly the case in the Balinese example, where a

strong communal system is at the root of the culture.

To clarify the above assumptions and to test this hypothesis, the study was organized in four stages: a review of the literature dealing with Bali, a comparative examination of village land use changes from 1969 to 1979, a questionnaire adaptation of the Delphi technique to measure the consensus of the villagers' perception and evaluation of tourism impact, and finally the statistical analysis.

Indices of the level of villagers' perceptions and evaluations of the tourism development impact and future regional growth orientation which aggregated the consensus preferences were constructed from the data analysis. The weighting system was obtained by using a scaling device to determine the greatest preference for the quality in question. A significant community preference was shown to exist, from which it was concluded that the hypothesis was untrue.

The implication of these findings is that input about goal preferences of the society is absolutely necessary. However, public involvement in the planning process depends on the willingness of the government. The Delphi technique was successful in eliciting information about how society perceives and evaluated changes caused by tourism development.

There was general agreement among respondents in terms of how they perceived and evaluated changes to traditional

village land use, and how these changes affect Balinese culture. A consensus of opinion also existed about the socio-economic impact of tourism, and about options for future development.

Further study is needed to reconsider the tested hypothesis and to improve the validity and significance of the results on villager perceptions and evaluations.

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PART I

THE THESIS BACKGROUND

CHAPTER 1

INTRODUCTION

1.1 THE PURPOSE OF THE THESIS

The impact upon a community of any proposed development should be a primary consideration in deciding whether the changes are desirable. This thesis proposes to identify and assess the impact of tourism development on traditional village land use patterns which are an important aspect of Balinese Culture. Traditional land use, in particular agricultural land use, is closely associated with traditional Balinese culture. Changes to land use patterns, therefore, may result in erosion of cultural values.

It is possible to objectively trace changes in village land use over time, using available documentation about agricultural productivity, housing, and other items. To evaluate the impact of these changes on the lives and cultural values of the people in the villages, a more subjective approach was necessary, key people being chosen from each village to speak for the others there.

Land use changes over time can be compared with increasing local tourist development to gauge the impact of the tourism on the traditional patterns of land use. The

subjective evaluations of the key villagers about changes to their way of life can then be examined to determine the stability of Balinese cultural values under the onslaught of tourism development.

The conclusions drawn will be important input into planning for future development, not only because of concerns for Balinese culture for its own sake, but also because that culture is a significant factor in the attractiveness of Bali as a tourist destination.

Thus the ultimate purpose of this thesis is to estimate the most desirable level of agricultural land use changes, and the best location and accommodation of tourist development in Bali in the future. While this study cannot be considered a comprehensive social and environmental impact analysis, it does attempt to make some contribution toward a critical aspect of these.

The objectives of the work are:

- a) to develop an effective impact assessment method to be used in evaluating a given tourist program or project
- b) to generate information about the impact of tourism development upon Balinese village patterns
- c) to demonstrate the application of the Delphi technique for gathering information to determine what community leaders and members perceive to be the impacts of tourism development on traditional village land use patterns

- d) to secure from community leaders and members their evaluations of the impacts resulting from changes in land use brought about by tourist development
- e) to determine whether the evaluation of community leaders and members supports the hypothesis on which the study is based
- f) to generate some conclusion that may be useful in developing policy recommendations for future development in regions of Bali
- g) to develop recommendations for study of impact assessment in similar situations.

1.2 THESIS FOCUS AND STATEMENT OF PROBLEMS

The failure of governments and private developers to make prior social impact assessments of projects is a major problem. There are also great difficulties in developing countries, including Indonesia, in designing measures of social impact, especially when dealing with the less tangible effects.

Uncertainties about values are compounded by imperfect information in both economic and social appraisal. Most of the economic appraisals are based on external factors such as world market prices, and are rarely applicable to local markets with their shadow prices. Social cost-benefit analyses are based on generating the maximum project output: gross national income, gross regional product, etc.

Rarely considered are the equitable distribution and the value of the benefit to members of the society, and ultimately its beneficial or adverse impacts upon their culture.

This study represents only one part of a plan evaluation process within the social impact assessment process, aimed at determining the preferences of the affected community. The results will be useful for similar studies, which investigate the effects of development projects on a given region and its society--in particular, studies which emphasize the residents' perceptions and evaluations of the impacts.

Maintaining the Balinese culture is generally accepted as an essential goal, but inevitably there is a continuing debate over the negative and positive impact of the intrusion of massive tourism development on it. This thesis will examine the relationships among loss of agricultural land, changes to Balinese traditional village land use patterns, decline of Balinese culture, and the development of tourism. The Balinese villagers are the people who experience the impact of changes to traditional village land use, changes caused either directly or indirectly by tourism development. The present state of knowledge concerning the impact of tourism development in Bali is very confused, and generally emphasizes the negative aspects, a position often based on emotional opinion rather than careful field research.

This study attempts a balanced assessment, investigating the actual changes in land use resulting from tourism development, villagers' perceptions of these changes, and their evaluations of policy recommendations developed on the basis of their perceptions.

Non-agricultural developments located in traditional agricultural areas have changed the old patterns of agricultural land use, and resulted in loss of prime agricultural land. In the last decade, tourism development has been a major cause of village land use changes in Bali. This study therefore analyzes the impact of tourism on agricultural land use within a comprehensive analysis of related socio-economic and environmental design aspects. As stated earlier, the purpose is to provide information to be used in evaluating the desirability of particular programs or projects for regions such as Bali.

Population is high and increasing rapidly in Bali. Job opportunities are limited, and there is thus high unemployment and low per capita income. There is limited arable land, but what exists is highly productive. Land use in the villages follows unique traditional patterns, which are closely related to the Balinese culture, and it is partly this unique culture which makes Bali the most attractive tourist destination in Indonesia. All of these interrelated factors will be considered in determining the effects of shifts from agricultural to non-agricultural land use.

1.3 ASSUMPTIONS AND RESEARCH HYPOTHESIS

The design of this research was guided by five assumptions:

- a) The level of agricultural activity is determined by the amount of land available for agriculture.
- b) There is a strong relationship between agricultural activities and traditional Balinese village land use patterns.
- c) There is a strong relationship between agricultural land use and the traditional Balinese culture.
- d) There is a strong relationship between development of tourism and native culture; i.e. Balinese culture is an important feature in attracting visitors to Bali.
- e) Tourism development directly or indirectly alters traditional village land use patterns, especially agricultural land use. The effect of continued uncontrolled tourism will be a decline in agricultural land use and a change in traditional village land use patterns, directly affecting Balinese culture, and thereby reducing Bali's attractiveness to tourists.

Related to the above assumptions, a hypothesis of the study is formalized as follows:

That those villagers who are in the areas most affected by tourism development will have less traditional attitudes towards the retention of traditional land use than those who are in the isolated areas.

Knowledge of these local community attitudes is an important factor in helping to mediate and plan to avoid conflict between tourism development and traditional systems. This is particularly the case in the Balinese example, where a strong communal system is at the root of the culture.

Clarification of the above assumptions and testing this hypothesis will help to achieve the objectives of this study.

CHAPTER 2

BALI ISLAND AS A CASE STUDY

To assess the impact of a project or number of projects on communities there must be a base for designing the investigation. Knowledge about the study area, about the project(s), and about the regional problems and project impacts is very important as a basis for designing and selecting the methods used. This chapter describes the site, physical features and socio-economic profile of the study area; the current role and the trend of tourism development in Bali; and the identification of regional problems and tourism impacts.

2.1 DESCRIPTION OF THE STUDY AREA

2.1.1 Geography and Political Organization

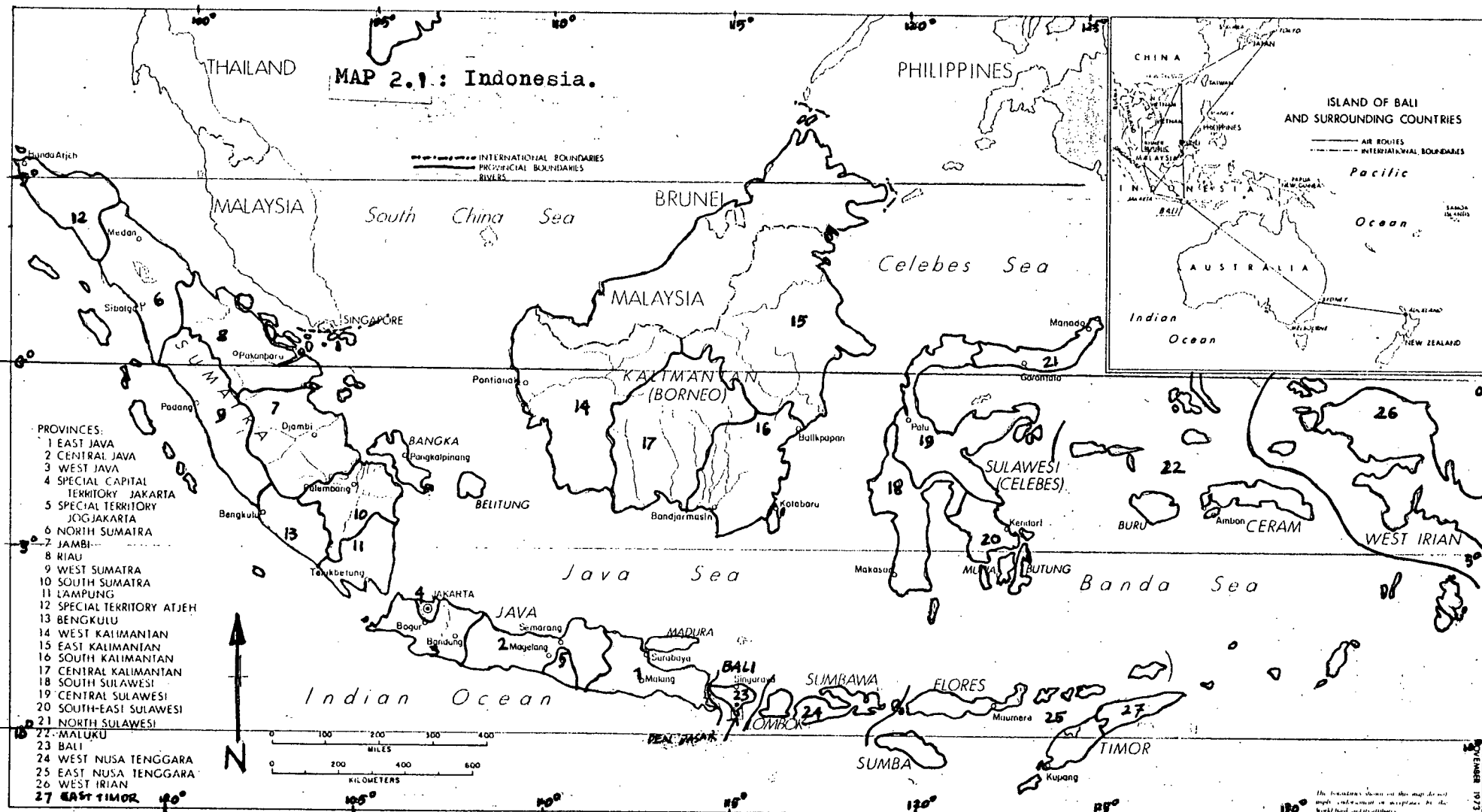
The island of Bali lies immediately to the east of Java. It extends in an east-west direction for 150 km, lying between longitudes $114^{\circ}25'$ East and $115^{\circ}43'$ East. In a north-south direction it extends for 90 km between latitudes $8^{\circ}03'$ South and $8^{\circ}51'$ South. Bali is a small island with an area of about $5,630 \text{ km}^2$; it represents only 0.3% of the total area of Indonesia. The greater part of the island is mountainous terrain and it is extremely fertile. Most of the land is under cultivation.

The weather in Bali is always warm and humid, but the

heat is tempered by sea breezes and cool air from the mountains. There are no hot and cold seasons, the maximum daily temperature approximating 28°C in the south and 32°C in the north. There is a distinct dry season extending from May to November, when the southeast monsoon prevails, and a distinct wet season from November to May, when the northwest monsoon prevails. The average annual rainfall in the north (at Singaraja) is about 1125 mm, and in the south (at Denpasar) 2255 mm.

Bali is one of twenty-seven provinces in Indonesia (see Map 2.1). The Province of Bali is administratively similar to other provinces in Indonesia, being divided into eight districts: the regencies of Badung, Gianyar, Tabanan, Klungkung, Bangli, Karangasem, Jembrana and Buleleng. Each regency has a capital city. Denpasar is the capital city of the Regency of Badung, and the capital city of Bali Province. Within each regency, there are sub-districts (kecamatan) containing small kecamatan towns, and official and traditional villages. Smallest in the hierarchy of communal organization are the hamlets (banjars). In Bali there are 8 capital cities, 50 kecamatan towns, 564 official villages and 1,470 traditional villages (see Table 2.1 and Map 2.2).

The western section of the island, the district of Jembrana, is a long narrow arid promontory; it rises some 1300 m above sea level. The western uplands lead to the



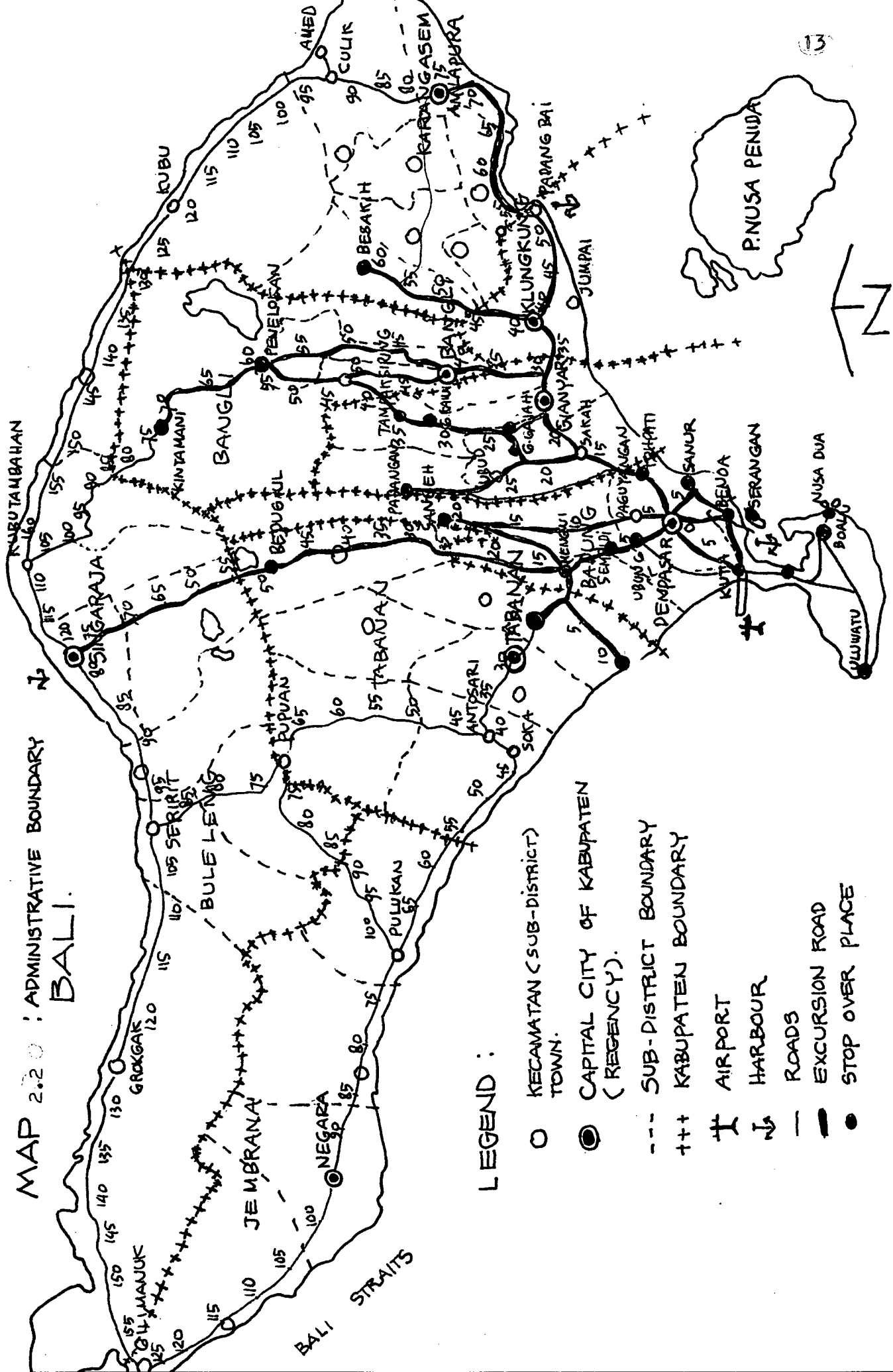
Sources : Document of International Bank for Reconstruction and Development, IDA, 1974.

TABLE 2.1: Numbers of Districts, Sub-districts, Official Villages, and Traditional Villages in the Province of Bali.

District/ Regency (Kabupaten)	Sub- district	Official Village	Traditional Village	Total Area (ha)	Capital City
1. Badung	7	51	146	54,253	Denpasar
2. Jembrana	4	49	41	84,181	Negara
3. Buleleng	9	145	100	132,085	Singaraja
4. Tabanan	8	99	354	86,306	Tabanan
5. Klungkung	4	56	217	31,546	Klungkung
6. Gianyar	7	51	269	36,835	Gianyar
7. Bangli	4	69	192	52,093	Bangli
8. Karangasem	8	44	151	86,172	Amlapura
Bali	51	564	1470	563,286	

Sources : Bali Regional Plan Concept 1977-2000, Bappeda, p.44 and The map of Regency of Badung.

MAP 2.20 : ADMINISTRATIVE BOUNDARY
BALI.



LEGEND :

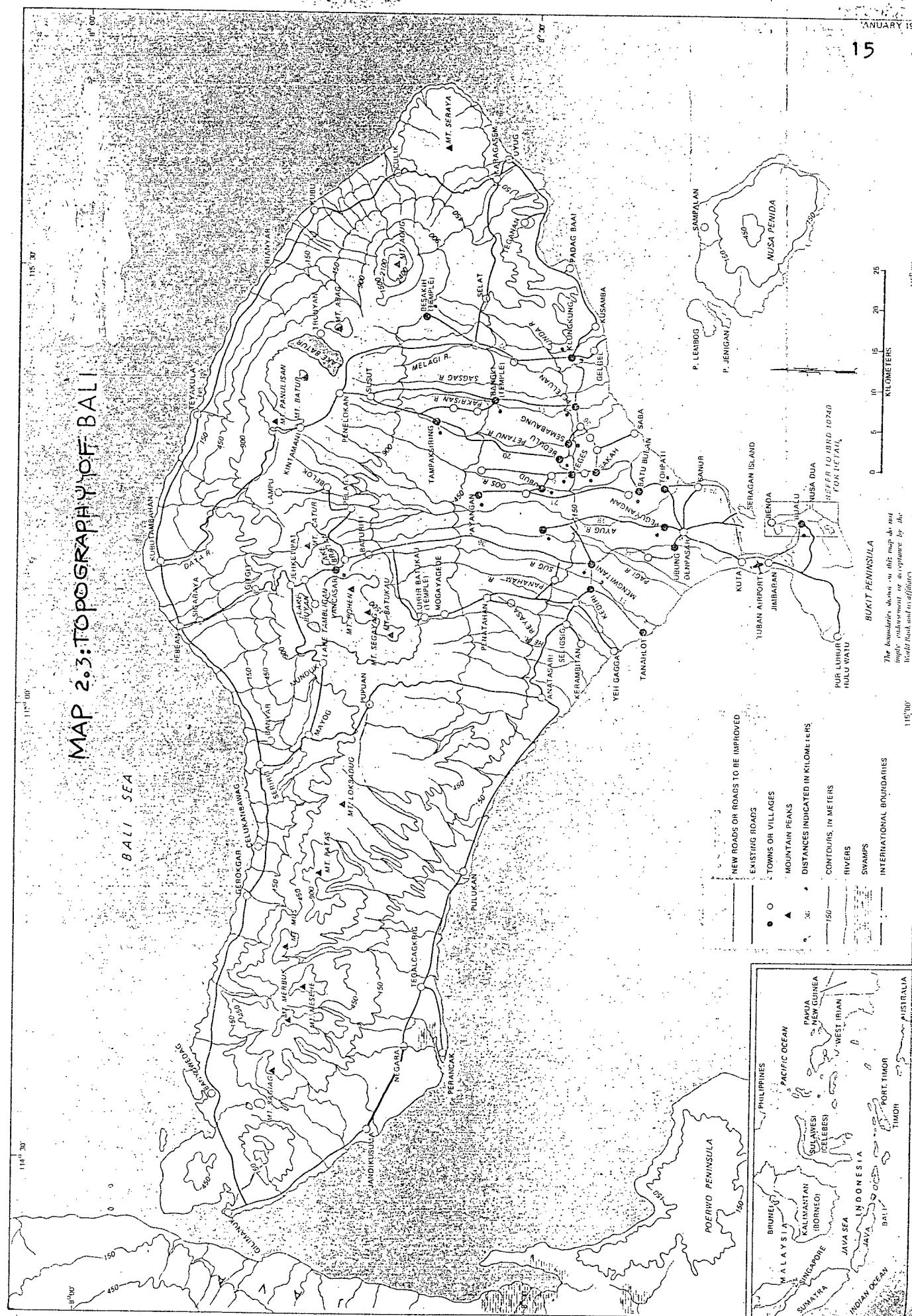
- KECAMATAN (SUB-DISTRICT) TOWN.
- CAPITAL CITY OF KABUPATEN (REGENCY).
- SUB-DISTRICT BOUNDARY
- +++ KABUPATEN BOUNDARY
- ✈ AIRPORT
- ⚓ HARBOUR
- ROADS
- - - EXCURSION ROAD
- STOP OVER PLACE

forested central highlands, which culminate in the volcanic peak of Mt. Batukau at an elevation of 2500 m. The central highlands include the districts of Tabanan, Badung and Gianyar, and are separated from the eastern highlands by a 1300 m saddle. The eastern highlands, including the districts of Klungkung, Bangli, and Karangasem, culminate in the majestic volcanic cone of Mt. Agung or Bali Peak, 3,100 m high. North of the highlands, the district of Buleleng consists of a narrow coastal lowland fringe of occupied and arable land. The southern lowland district of Badung is crossed by many streams and rivers which arise high up on the mountain slopes and cut deeply into the soft volcanic rock.

Steep sided and narrow, terraced for rice growing, green and verdant, these river valleys are of great beauty. At the extreme south of the island at an elevation of 250 m is the Bukit Peninsula (see Map 2.3).

The flora and fauna of Bali are typically Javanese and typically tropical. The forests contain many species of trees, none of commercial importance so far as wood is concerned. However, the trees do serve as shade for coffee and other crops, and are used for fuels and crafts. Important among the many species of palm are the cocunut palm, which supplies cooking oil, and copra; the Palmyra or lontar palm, the dried leaves of which are used for making books, and for lamaks for festival decorations;

MAP 2.3: TOPOGRAPHY OF BALI



The boundaries shown on this map do not imply endorsement or acceptance by the World Bank and its affiliates.

the sagopalm whose sap makes toddy and whose fibre (ijuk) makes thatch; and the thorny slak palm which produces a pleasantly flavoured nut. Deer, pig, birds, cattle, monkeys and snakes are numerous. The farm water buffalo is seen in Southern Bali. Ploughing and preparation of the rice terraces is done mainly with cattle (Blackwood, 1970, pp 3-4).

The natural environment of the island, particularly its topography, is a basic factor in its religious organization, which in turn is responsible for the land use arrangements on the villages.

2.1.2 Balinese Culture and Population

This section will attempt to describe Balinese traditional attitudes towards land use which are one aspect of Balinese culture, and the effect of economic change on these attitudes. The phrase "traditional attitudes" refers to certain Balinese religious beliefs and rites, manifested in both physical and socio-economic terms. First of all there is a strong preference for maintaining agricultural land use. The remaining land is occupied according to a very specific pattern--the siting of the temple and the layout of the housing is set by this pattern. Secondly, there is a high regard for indigenous Balinese architecture, and for the natural environment in all its beauty. Thirdly, the preferred lifestyle is agricultural and communal in nature, with village cooperation and religious festivals emphasized.

Fourthly, the traditional agricultural systems such as subak are accepted, with the twin aims of agriculture being subsistence and providing agricultural products for religious festivals.

In contrast, non-traditional attitudes place emphasis on non-agricultural land use such as tourism and its associated developments: modern transportation and modern architecture unrelated to the Balinese setting. This often leads to the adoption of foreign culture and modern technology in Bali (such as modern irrigation methods).

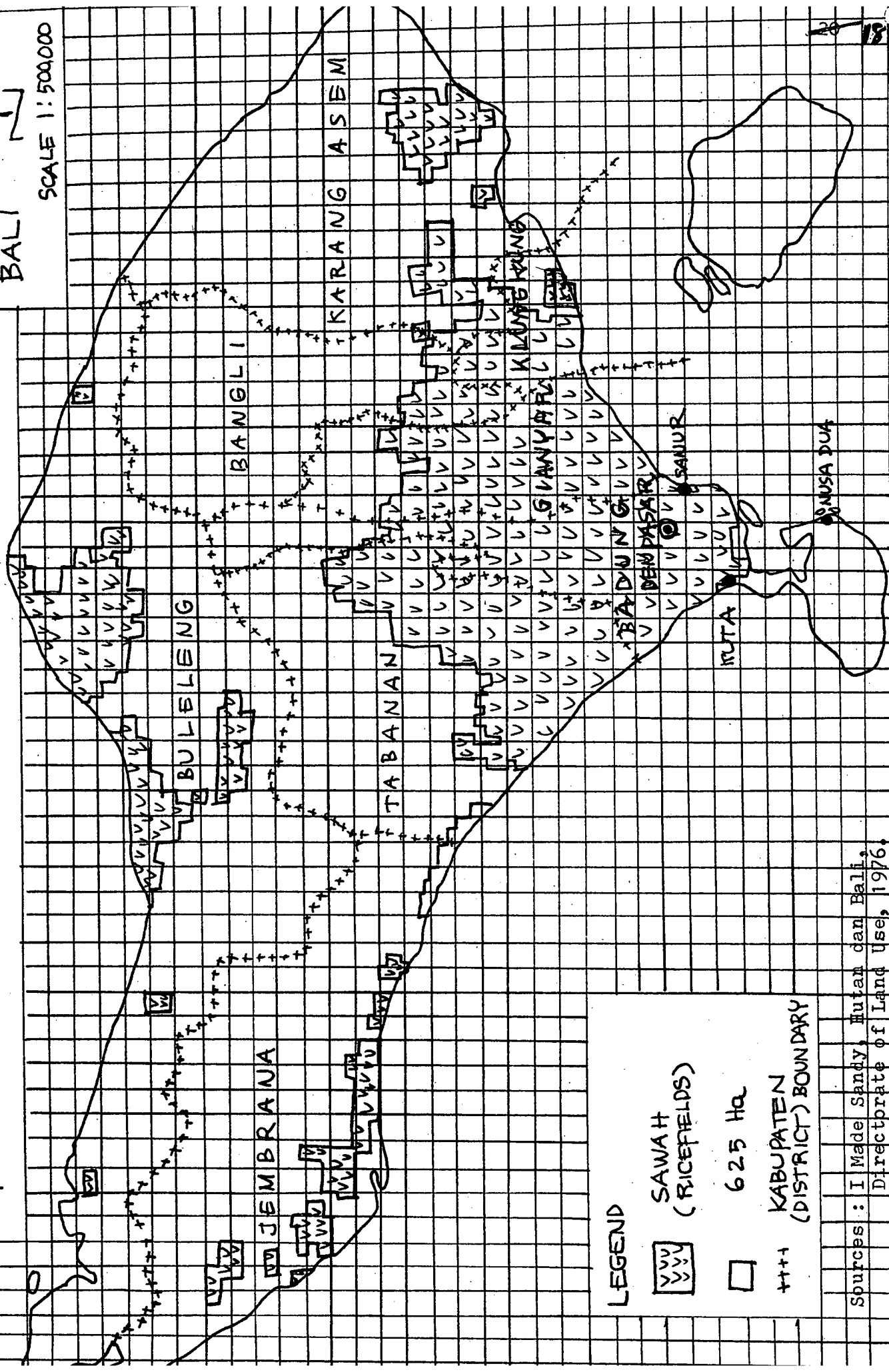
Bali is designated as a province due to the uniqueness of its religious structure: over 95% of the residents are Hindu. This region is completely different from other ethnic groups in the other islands of Indonesia, where the majority are Muslim or Christian (Missin, 1972, p. 123) (see Appendix, Map B.1).

Their religious beliefs influence all aspects of life for the Balinese, including agricultural activities and land use patterns in the villages. Village life both molds their character and reflects their culture. The very spirit of Bali emanates from the thousands of village communities that have been established, especially in the main fertile agricultural area in the southern lowlands (see Map 2.4). This concentrated population in a fertile area well suited to traditional practices has resulted in the maintenance of strong traditional cultural values in this southern lowlands area.

SCALE 1: 500,000

BALI

SCALE 1: 500,000



Sources :	I Made Sandy, Mutan dan Bali, Directorate of Land Use, 1976.
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The mountains are regarded by the Balinese as holy, being the home of the Gods and the sources of well being and fertility. The Gunung Agung (Mt. Agung) is regarded as the navel of the World, the home of Siwa and other important gods. To the Balinese it bears the same significance as Kaliasa and Meru do to the Hindus of India. On the other hand the sea, which is lower even than the land, represents everything evil to the Balinese--a view reinforced by the presence in it of harmful and unpleasant creatures such as sharks, sea snakes, and various fish. In consequence the Balinese have little maritime tendency and look to the land and to the mountains rather than to the sea for their support and well being. Bali is regarded as the entire world, floating in the ocean, supported by the mythical turtle and entwined snakes, a combination which appears in many rituals, sculptures and shrines (Covarrubias, 1937; 1970, p. 5).

Throughout history, the Balinese village has been an independent economic and social unit ruled by a council of villagers, with voting powers and equal rights for all, and ownership of land restricted by village regulations. The land is communally cultivated to maintain village festivals, and even the ground on which the houses stand is village property that can be reclaimed if the tenant abuses his privileges. In addition to the formal government appointed leader, there exists an elected traditional village leader, who is the top decision

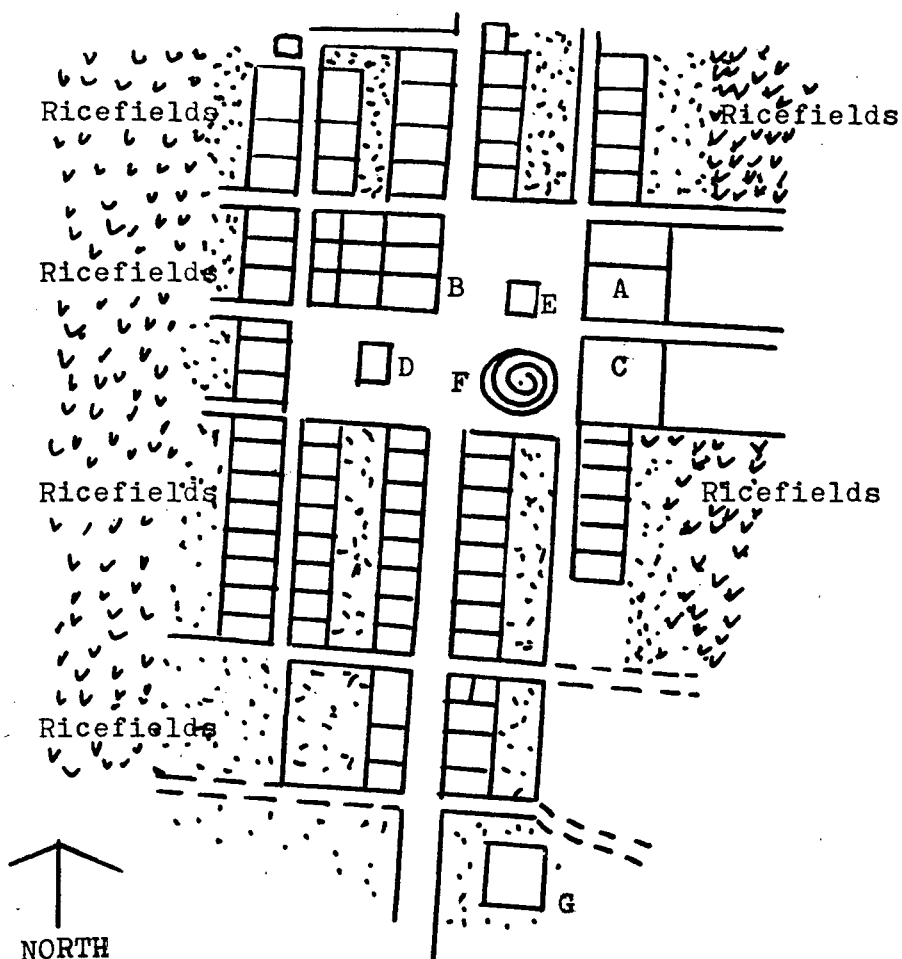
maker at the community level. This communal system is manifested in the organization of village land, which is structured in the traditional village land use patterns (see Figures 2.1 and 2.2) (Covarrubias, 1937, p. 43; Blackwood, 1970, p. 15; University of Udayana Research Report, 1973).

A typical morning for a Balinese villager is spent in his sawah (ricefield) attending to his crop; afternoons he spends in careful, exacting work on a painting or carving of high quality and sensitivity. Then, in the evenings, he may dance or play in the village orchestra. Art seems to be ingrained in the population and they have a natural aptitude for it.

Bali is the second most heavily populated island after Java. Java and Bali among the 3000 islands of Indonesia have the most severe population pressures. Indonesia at 125 million in 1971 is the world's most populous nation.

In 1971 the population of Bali was 2,120,338, and with the rate of increase at 2.03%, it was over 2.5 million in 1979. The average population density of Bali is around 400 persons per Km². (see Table 2.2). This high density is becoming a serious problem due to the decline of the man/land ratio, in 1979 less than 1 Ha per farm household. The problem is becoming more crucial due to the high rate of unemployment and limited development opportunities available in Bali. Only a small proportion of the population of Bali live on the northern lowlands, the vast majority inhabiting the very much larger

FIGURE 2.1: TYPICAL BALINESE TRADITIONAL VILLAGE
LAND USE PATTERNS.

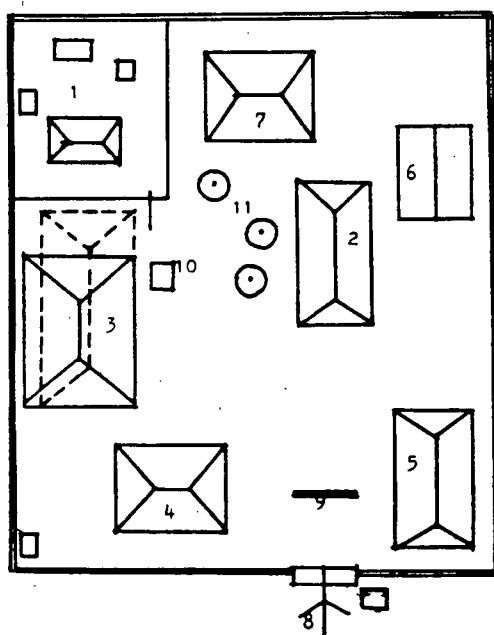
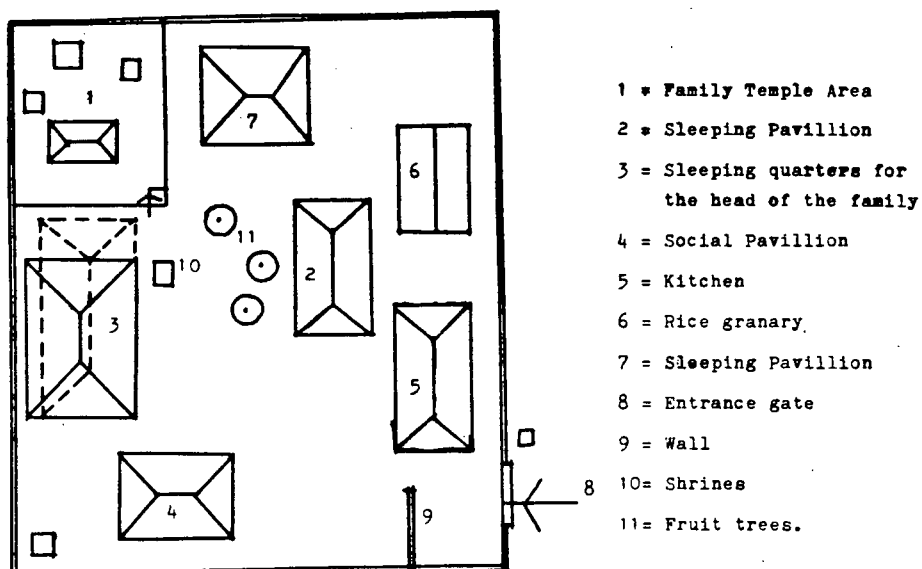


LEGEND :

- A. The Village Temple
- B. Hall of Assembly
- C. Market
- D. The Large Shed for Cockfight
- E. The Hang Wood Alarm

- F. Waringin Tree (Banyan)
- G. Village Cemetery.
- House
- Gardens
- Ricefields

FIGURE 2.2.: BALINESE TRADITIONAL HOUSING LAY-OUT



Scale 1 : 300

Sources : Fields Survey 1979,
 Sir Robert Blackwood, 1970,
 Miguel Covarrubias, 1937.

TABLE 2.2 : Population Growth and Density, Bali, 1954 - 1974

District/ Regency (Kabupaten)	Area in Km ²	Population ('000)					Density per Km ²				% Increase in Density	
		1954	1961	1969	1971	1974	1954	1961	1969	1971	1974	⁷⁴ / ₅₄
Badung	542	255.3	310.6	370.2	400.4	414.1	471	573	683	738	820	74
Jembrana	842	97.6	129.5	155.0	172.0	177.8	116	153	184	204	209	80
Buleleng	1,320	258.7	323.1	390.9	403.3	420.0	196	244	296	305	319	63
Tabanan	863	238.6	273.6	316.8	328.1	354.8	280	317	367	385	421	50
Klungkung	315	107.0	127.9	134.1	139.3	143.2	339	406	425	442	445	31
Gianyar	368	211.7	232.6	262.5	271.6	284.3	575	632	713	738	799	39
Bangli	521	116.6	124.0	133.5	138.3	147.5	223	238	256	265	283	27
Karangasem	861	231.3	261.3	257.1	267.3	178.9	269	303	299	310	332	23
B A L I	5,632	1,517.0	1,783.0	2,020.1	2,120.0	2,220.6	269	316	358	377	401	49

Sources: Ruth Daroesman, taken from 1954, Monografi Pulau Bali, I Gusti Gde Raka, Pusat Djawatan Pertanian Rakyat, Djakarta 1954, p.10; Population Census 1961 and 1971; Bappeda, Bali Regional Plan Concept for 1977-2000.

area of low land to the south of the central and eastern highlands. The population density in this southern region ranges from 700 - 1000 persons per sq. km². Almost 90% of the population lives in the rural area; only 10% are in the urban area (Bali regional Plan 1977 - 2000).

The influence of tourism on Balinese society is most conspicuous in the rapid growth of hotel-building and land transactions which the great inflow of tourists has generated. Bali already has, as part of its life and society, legal arrangements regarding individual and communal ownership of land.

The traditional land rights which are still in living practice are as follows: (Francillon, 1975, p. 736).

1. Temple (pura) land: can be termed temple property.
All its products are intended for the needs of the temple.
2. Village (desa) land: over which the village community has sole rights. It is primarily used for village communal buildings and for allotments to the villagers for their use. The holders of such land owe the community a contribution in labour as required. This is also true of the village site itself. It is dry land, not primarily meant for cultivation, and so not irrigated.

However, with the intrusion of commercialization of village land, this traditional regulation is disrupted.

The simple fact is that the Balinese culture as expressed in the way of life of the people, is not and never has been static. Bali is a living dynamic society which has for hundreds of years adapted with remarkable flexibility to the forces of

change. However, the problem is how to ensure that the benefits of tourism reach the Balinese and still regulate the industry to make as little cultural impact as possible. For this purpose then it is really important to know what is the Balinese perception and evaluation of the effects of tourism development, to protect their way of life, religion and customs in the face of this influx as best they can.

Up to the present time, the extent of environmental changes resulting from tourism per se has not been very great. The primary areas of concern are the loss of agricultural land and the changes of traditional village land use patterns, related to the uncontrolled development of hotel accommodation --- in terms of both location, design, and the lag of public investment in basic infrastructure such as roads, water sewerage systems, electricity etc., which disrupt the traditional village land use patterns (traditional irrigation system or subak, village lay-out, housing lay-out, streets patterns etc). From an economic point of view, subak is the most important of all the autonomous organizations operating the agricultural land within or among the Balinese villages. If this organization is disrupted undoubtedly the villagers' way of life will change drastically.

2.1.3 Economic Profile

The problems facing Bali are still considerable, especially related to population pressures, limited land for agricultural expansion, and limited growth potential of all the other non-traditional sectors except tourism. Its population is growing at a rate of 2.03% per year; per capita income is low; unemployment and under-employment among the better educated adults is high; and about 55% of the gross domestic product and 70% of

employment is still generated by agriculture.

Bali's economy may be described as a traditional system based on agriculture. About 90% of the people live in rural areas where village life is characterized by cooperative associations resulting from a strong orientation to non-economic activities -- religion, dance, and ritual. Both output and employment are predominantly agricultural. A relative breakdown by sector of total output and employment for 1968-69 is shown in Table 2.3

TABLE 2.3: Employment and Sector of Activity in Bali, 1971

Sector	% of Population Employed	% of GDP
Agriculture	67.0	55
Light Industry & handicrafts	6.0	9
Commerce	8.5	14
Services and other	18.5	22
	<hr/> 100	<hr/> 100

Source: Sceto Consultants Report, 1971, Vol. 5, p. 10.

With very few exceptions Bali's only "industry" is agriculture, and agricultural products are almost exclusively rice, cash crops such as coffee and copra and cattle. Hence, the major economic potential in Bali lies in agriculture and tourism. The other activities such as handicrafts have developed out of those major activities.

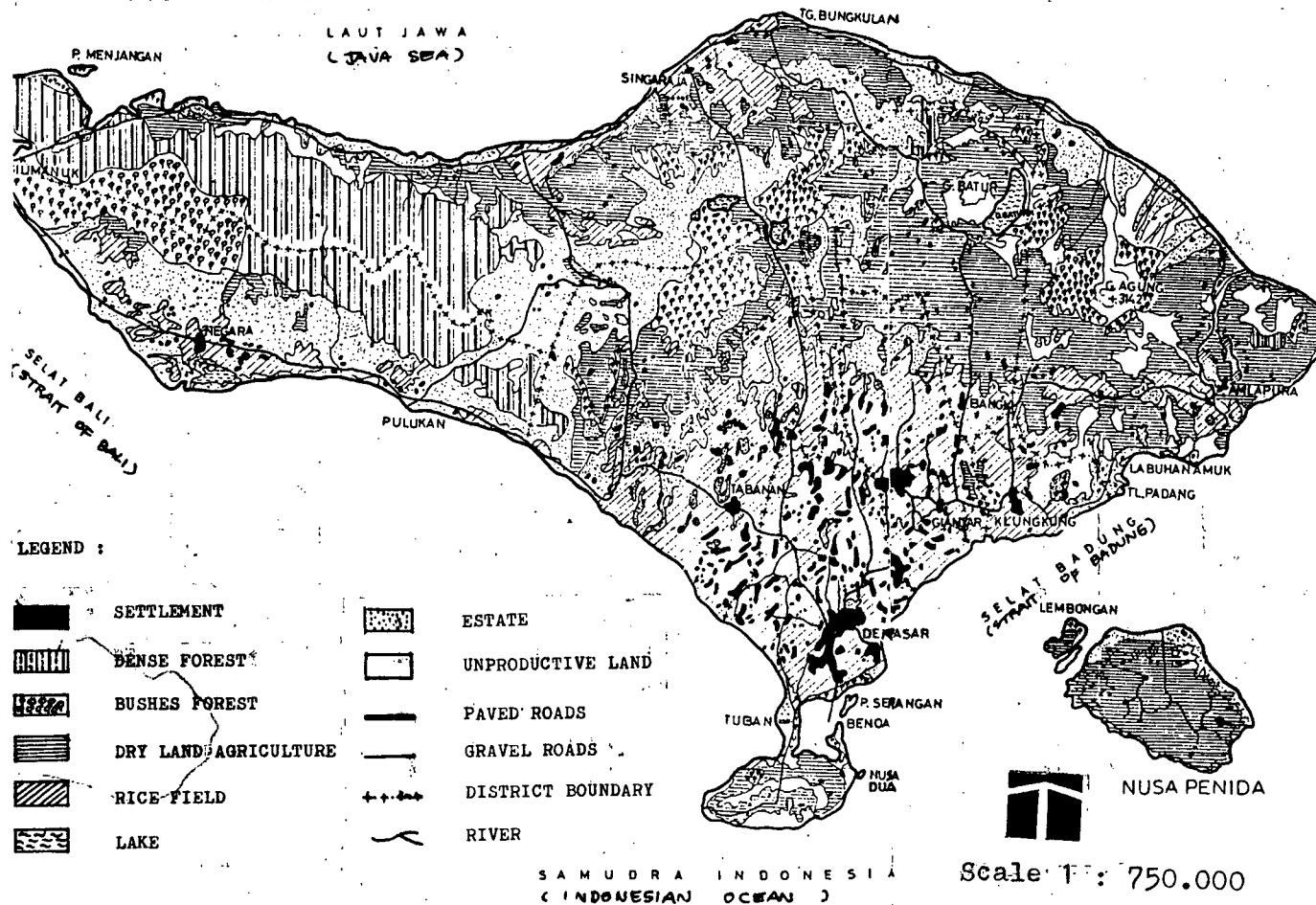
The whole Balinese landscape is dominated by the rice terraces, which extend up the faces of steep slopes in the deeply cut lowland valleys, and ascend the hills and mountains in an endless succession of steps until they can go no higher. The Balinese are able to cultivate two successive crops of

rice each year, as well as an intermediate crop, which provides a natural rotation and nitrogen enrichment. The Balinese system of irrigation is of ancient origin and has been developed, modified and improved over many centuries. Since river water is common property and since any one unit of the irrigation system may serve a number of villagers, or a number of villages, or even a whole district, the development and operation of the system requires a community cooperation. This has led to the establishment of subaks, which are, in effect, cooperative agricultural societies in the nature of local water boards. The subaks are composed of all members owning sawah (rice fields) in a common irrigation area, who are compelled to join. Meetings are negerally held in a temple compound located in the rice fields, which belongs to the subak and is dedicated to agricultural deities (Sir Robert Blacwood, 1970, p. 72). All the work of the cooperative is designed to ensure an equitable distribution of available ricelands, and is carried on in a spirit of complete and harmonious communal unity.

Total agricultural land in Bali is about 390,000 ha; 100,000 ha of which is irrigated, with another 110,000 in plantation, 65,000 in coconuts, 25,000 in coffee and 90,000 in dry crops (see Map 2.5). About 70% of the plots are less than 1 ha, with actual owners working 73% of the plots. In addition to farming, there is some livestock production -- cattle, hogs and poultry. Until very recently fishing has been relatively unimportant.

If past trends continue, agricultural output may be expected to increase roughly in proportion to the increase.

MAP 2.5: LAND USE OF BALI, 1971



Sources : Bali Provincial Planning Board, Bali Regional Plan Concept 1977-2000, 1977.

in population (Sceto, 1971, vol.5, p. 10). Continued expansion of agricultural output on Bali, however, will have to be based primarily on higher value crops and improved physical input: seeds, fertilizer, water, etc. (see Table 2.4), rather than on greater labor utilization, which is already relatively high. This is particularly true given very limited scope for increasing the amount of land under cultivation. Under these circumstances, rural unemployment is likely to increase over the long term, unless of course nonagricultural sectors develop in rural areas or significant numbers of people choose to migrate to urban centers or other less populated islands.

Obviously, rural-urban migration would only contribute to the existing level of urban unemployment which has already become somewhat of a problem in towns such as Denpasar. What is needed is a rapid expansion of non-agricultural sectors capable of absorbing both urban and rural unemployed. However, an important aspect of this problem is that the traditional activities will presumably become less important. In addition massive out-migration must be carefully considered, taking into account central government policy and the wishes of individual Balinese.

There is, at present little extractive or heavy industry in Bali (see Table 2.5). Existing light industry involves import substitution and the processing of basic agricultural products. The most important in terms of employment is the

TABLE 2.4 : Production of Principal Agricultural Crops, Bali

	1965-69 Average	1969	1970	1971
	(000 tons)			
Padi sawah	489.1	536.6	523.5	625.8*
Padi gogo	19.8	18.1	12.4	10.8*
Maize	48.7	51.2	59.1	60.8*
Cassava	185.0	168.2	215.1	221.6
Sweet potatoes	251.6	202.6	205.3	230.1
Peanuts	5.9	6.2	8.5	6.5
Soybeans	8.3	9.5	8.2	7.5
	(tons)			
Coffee		7,090	7,438	6,468
Tobacco				0.4
Kapok		53	23	50
Cotton		73	16	n.a.
Cloves		2	2	5
Pepper		4	6	8

Source: Laporan Tahunan op.cit.

*Laporan Penelitian II A, Daftar II gives 11,747 tons for maize, 8,951 tons for padi gogo, and 476,273 tons for padi sawah.

TABLE 2.5 : Manufacturing Industries in Bali and each District, 1970

District/ Regency (Kabupaten)	Number of estab- lishments	Power (HP)	Number Employed	Nature of Industry
1. Badung	41	5,409	2,406	Ricemills and Textile
2. Jembrana	1	48	119	Rubber remilling
3. Buleleng	17	575	303	Mixed
4. Tabanan	26	620	1,337	Mostly ricemills
5. Klungkung	2	-	278	Kretek cigarette
6. Gianyar	18	93	1,409	Mostly weaving
7. Bangli	2	10	32	Ricemills
8. Karangasem	-	-		
B a l i	107	6,755	5,884	

Sources : BPS, Survey of Manufacturing Industries, 1970

handicraft industry. Production is oriented to satisfying the needs of a tradition-bound economy: building materials (such as bricks), weaving, pottery, basket making, iron and silver works, wood and stone sculpture, roof thatching etc. At this time this type of industry is developing in response to the demands of tourism.

While large scale industrial development is unlikely to occur in the near future, there appear to be good prospects for the expansion of food processing and other light industrial production. Increases in construction will depend largely on the level of investment in infrastructure and tourist hotels, and on the general expansion of industrial and commercial activity and housing.

With limited growth prospects for most other non-agricultural sectors in the near future, and with a likely decline in the labor absorption capacity of agricultural expansion, tourism development may have a significant impact in terms of the development of both non-traditional employment opportunities and a growing market for local goods and services. This prospect clearly merits significant attention in government plans for regional development in Bali. However, the impact on the Balinese culture of uncontrolled development is still in question.

Per capita income in Bali has been estimated at US \$50-70 in 1971, and US \$150-170 in 1977, slightly above the national

per capita income of around US \$150 per year. The higher per capita income in Bali compared to all Indonesia is due to self sufficiency in rice, and to income created by tourism.

Bali is in a relatively good position to develop its tourism industry as a means of improving the economic base for its population. However, since Bali has such a strong unique traditional culture tourism also has negative effects.

Monetary indicators are not an adequate measure of the Balinese standard of living, since much economic activity is based not on money transactions, but rather on cooperative effort and the sharing of income in kind.

Thus, in considering tourist development, since land conservation is of great importance and most economic activity is based on cooperative effort rooted in Balinese culture, it is important to identify the detrimental effects of tourism with regard to these sensitive issues.

2.2 TOURISM IN BALI

2.2.1 Bali Regional Development and the Objectives of Tourism Development

The objectives of regional development in Bali as stated in the national five year development plan (Indonesian National Planning Board, 1974) and in the Bali regional plan 1977-2000 (Bali Provincial Planning Board, 1977), are as follows:

- a. To solve the problems of population pressure by balancing urban and rural development, encouraging family planning and other associated projects.
- b. To improve agricultural production, both food crops and exported cash crops.
- c. To improve tourism development and its associated supported programs and projects.
- d. To improve the transmigration program and the creation of employment.
- e. To preserve and to restore the Balinese culture.

Specifically, the objectives of tourism development in Bali, as stated in the Bali Tourism Master Plan 1971 (SCETO Report 1971), are as follows:

- a. To provide foreign exchange earnings which can be used to raise the material standard of living of significant numbers of local inhabitants, and to generate regional development.
- b. To create jobs -- tourism development is expected to have a significant impact in terms of both the development of non-traditional employment opportunities and the development of a growing market for local goods and services.
- c. To improve the distribution of income and employment.
- d. To develop cultural tourism, emphasizing Balinese culture, scenic beauty and way of life.

- e. To preserve and to revive the Balinese culture, which is important and valuable not only to the Balinese but also for attracting tourists.

Specific policies related to the above objectives are: 1) to regulate control of hotel development in Bali, in order to ensure the protection of the environment; 2) to monitor and regulate the social and cultural impact of tourism growth, with particular reference to the numbers of tourists and the tour routes and schedules, as well as the development of a "cultural awareness" program for incoming visitors.

It is clear from this that the government is trying hard to reinforce positive impacts of tourism development, and eliminate negative effects. However, the achievement of all these objectives is still in question. The issue of conflicts between traditional and non-traditional values remains a continuing debate.

Hence, as one of the objective of this study is to generate information about the impact of tourism development on the village community, the results will be useful as input, to monitor and regulate the social and culture impact of tourism growth in Bali as a whole.

With respect to hotel development, the government has only recently put into effect a limitation on the number of hotels of an international standard that can be constructed.

New regulations concerning Balinese architectural designs, zoning regulations and height restrictions have been recently instituted. The other development controls for the island, as a whole, have been formulated in connection with the Bali Tourism Master Plan (IBRD, 1974, p. 7, Annex XII). Specific policies on loss or preservation of agricultural land are not yet formulated. Hotels are concentrated in three main areas: Sanur, Kuta and Denpasar. Such a concentration is a desirable characteristic of tourism development. This location is primarily the result of historical factors relating to the availability of good beach sites, proximity to the airport at Tuban, and easy access to tourists attractions. Unfortunately, however, this development was largely unplanned and haphazard, with decisions about location, building design, and the provision of basic infrastructure such as roads disrupting the existing traditional village land-use patterns and ricefields. Fertile ricefields have been turned into scorched parking lots, garage stations, hotels, roads, etc; irrigation waters have been used for hotel swimming pools and traditional irrigation/canals cut by hotel development and roads.

All of these physical changes either directly or indirectly will affect the traditional values --- traditional village land-use patterns, agricultural activities etc --- changes hard to quantify, except through the evaluation of the villagers.

To prevent further haphazard development, which threatens to destroy Bali's cultural and environmental assets the government has recommended that future hotel development be concentrated at Nusa Dua. Unlike Sanur and Kuta, where hotel facilities infringe on existing villages and rice fields, Nusa Dua is isolated on a dry, sparsely settled peninsula (Bukit) on the southern end of the island, separated from the most densely settled and agriculturally richest parts of Bali. As stated already, this policy will not be effective if the associated development outside the area remains uncontrolled. There is evidence that much hotel development in the outside region is built up illegally.

2.2.2 Why Tourists come to Bali

The primary attractions of Bali for the foreign visitor may be grouped into two broad classifications: cultural attractions and natural or scenic attractions. Under the former category fall the diverse and unique art forms: music, dance, painting and sculptures, as well as a variety of religious influences which are deeply ingrained in the way of life of the Balinese and are expressed in Hindu-Balinese temples, festivals, and handicraft items. Included among the natural and scenic attractions are rugged volcanic peaks, dense tropical forest, lush, green terraced rice paddies and white sand beaches flanked by groves of palm

trees and washed by blue green waters which conceal coral reefs and tropical sea life of great beauty (Appraisal of the Bali Tourism Project, 1974, Annex XII, p. 1).

Bali has a long standing image among foreigners as a most exotic South Pacific island, possessing great natural beauty and unique cultural attractions. The combination of cultural, scenic and beach tourism has a strong appeal to wide segments of the tourism market. One of the ways in which Bali is unique and thus so attractive to tourists is the extent to which its economic and social life is the expression of its culture and religion. Research at the University of Udayana identified Balinese culture as the most impressive attraction to tourists about Bali (see table 2.6).

2.2.3 The Role of Tourism in Bali's Economy

The tourism industry was recognized in the National First Five Year Plan (1969-1974) as a sector which can contribute significantly to Indonesia's development through increased foreign exchange earnings, employment and income generation and regional development. Bali, Java and Sumatra were given first priority for tourism development.

As has been stated, the economy of Bali is based on traditional agriculture. In the absence of valuable mineral deposits, other economic activity is limited to the handicraft industry and other agricultural industry which

TABLE 2.6 : TOURIST' RANKING OF THE MOST IMPRESSIVE ASPECTS IN BALI

Number of respondents, by nationality and highest ranked aspect or combination of aspects

Nationality	Numbers ranking each aspect and combination of aspects								Total
	Culture (C)	Scenery (S)	Hospitality (H)	Something else	C&S	C&H	S&H	C&S&H	
U.S.A	4	2	-	1	1	-	-	5	13
Dutch	2	1	-	1	1	-	-	1	6
German	2	-	-	-	1	-	-	-	3
Australian	13	3	3	1	2	-	1	10	33
Swedish	-	-	1	-	-	-	-	1	2
Belgian	-	-	-	-	-	1	-	-	1
Japanese	1	-	-	-	-	1	-	-	2
Norwegian	1	-	-	-	-	-	-	-	1
Swiss	1	-	-	-	-	1	-	2	4
Canadian	-	-	-	2	-	1	-	-	3
British	-	-	-	1	-	-	-	-	1
French	1	-	-	-	-	-	2	-	3
New Zealand	-	-	-	-	-	-	-	1	1
	25	6	4	6	5	4	3	20	73
	35%	8%	5%	8%	7%	5%	4%	28%	100%

Sources: University of Udayana, Research Report, 1973, p.26.

satisfies the needs of a tradition-bound society and, increasingly, the demands of tourists. With little further expansion of agricultural land possible, and with the size of farms decreasing, employment problems are likely to worsen, particularly among educated adult seeking either traditional or modern sector jobs. In these circumstances, tourism likely has high developmental priority for the island.

Foreign exchange receipts from tourism in Bali (converted from rupiahs at 410 per dollar) are estimated to have risen from \$2 million in 1969 to \$4.1 in 1970, to \$4.4 in 1971, and to nearly \$9 million in 1973. The value of exports to both the domestic and the foreign markets grew from \$2.2 million in 1969 to \$6 million in 1973 (Francillon, 1975, p.729; Daroesman, 1973, p.49). These figures indicate the rapid growth and the important role of tourism in the Bali economy since the new airport was opened in 1969.

The allocation of public funds in the First Five Year Plan focusing on communication projects has been closely accompanied by a parallel inflow of tourists, income in foreign currency, and private investments. An increasing share of private investments has been allocated to the hotel sector (Francillon, 1975, p.729).

A survey carried out by Udayana University indicated that incomes for those in the tourist services industry

were five times greater than incomes in farming. According to employment figures for 1971, 22% of the employed population was in the service industries, as compared to the all-Indonesia average of 10%.

The Tourism Master Plan estimates that indirect employment generated by tourism will be in a ratio of 3 : 1 to direct employment. It has been assumed that 75% of the employment was generated in Badung Regency (SCETO, 1971). This would mean that less than 5% of the labor force in the other seven regencies can be absorbed into the tourist industry. However, a careful study to confirm those estimates is needed to measure the income and employment multiplier effects of tourism, especially the distribution of the effect into the village communities.

2.2.4 Tourism Development Trend

Visitors to Bali can be distinguished according to their objectives, nationality, and age, and all tourists may be classified in a time perspective. Before construction of the International airport between 1963 and 1969 there were no large hotels and only a few small ones; probably the only tourists were a small number of prewar-style travellers, scholars and artists. The Bali Beach Hotel opened at Sanur in 1966. In 1966 only about 2,150 visitors came to Bali. After the airport was made accessible in

1969 to large capacity jets, the inflow of foreign visitors rose steadily from 5,000 in 1968 to 10,000 in 1969, and to 240,000 in 1977 (see Figure 2.3).

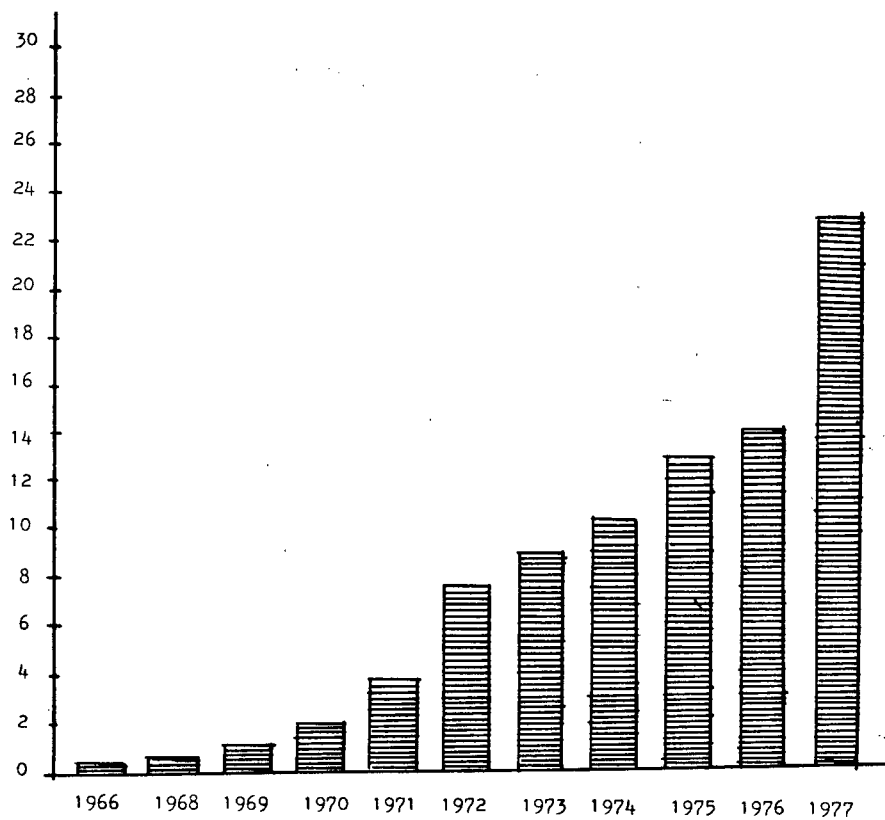
These data show that tourists arrivals in Bali have grown at a rate of about 27% per year since 1969. It is estimated that by 1983 tourist visitors to Bali will be around 540,000. This projection considered the impact of energy prices, in that after 1977 the growth rate used was only 14%. (I.B.R.D. 1974, 1, Annex XII). Besides the foreign visitors, of course, the domestic tourists (inter-islands visitors) are also increasing, from 32,285 in 1961 to 86,067 in 1969 and to 220,000 in 1972. The annual average growth rate is around 52%. Including these domestic tourists, it is estimated that during the 1980's tourists visiting Bali in a year will total more than one million.

In light of these projected tourist flows, the possibility of serious deleterious effects on the cultural and environmental assets of Bali may be expected to increase correspondingly.

Related to the rapid growth of visitors since 1969, tourist facilities (hotels, cottages, homestays/motels, bungalows, restaurants, artshops), tourist services and transportation and communication networks have also grown very rapidly. The expansion of the city of Denpasar may be attributed not only to its being a Provincial and a

FIGURE 2.3: TOTAL FOREIGN TOURISTS IN BALI

(x 10,000 tourists)



Sources : Gerald Francillon, p. 724, 1975; University of Udayana Report, p. 10, 1973; Ruth Daroesman, p. 49, 1973; and Bappeda Bali Regional Plan Concept 1977-2000, p.28; and IBRD, p. 17, 1974.

Regency capital, but also to the fact that Badung Regency is the centre of tourism.

Between 1969 and 1974, the number of hotels increased from 500 to 3000. Because all these hotels are located in Sanur, Kuta, and Denpasar, and because new construction is planned only in Nusa Dua, all areas within the Regency of Badung, this Regency receives most of the income from tourism. In spite of government efforts to redistribute this income through taxation, most regions still do not receive equal benefits to those of Badung. (Ruth Daroesman, 1973, p.55) (see Table A2 and A3 for details).

Thus the distribution of benefits from tourism into the regions in Bali, and especially to the villagers, is still in question. In addition, this massive expansion of tourism is likely to place great strain on Balinese culture and social life.

For the time being, in an attempt to reap the benefits without inflicting serious damage on Balinese culture, it was decided that tourism should be "contained" in a concentrated resort area (Nusa Dua), and its intrusion into the rest of the island limited. However, this concentration policy does not seem successful either in terms of physical, social or economic impact. There is a trend towards increased associated development (such as roads, artshops, restaurants, stopover places, and other tourist attractions) outside the resort area (see Tables A.4, A.5, and A.6

for details). Most of this development is still uncontrolled, and it is using fertile agricultural land as well as changing traditional village land use patterns. This situation raises doubts about the real benefits of tourism for the villagers.

Indonesian economists have often been accused of being one-sided, overstressing the economic aspects of the development effort and neglecting the socio-cultural aspects as other equally important facets of development. Tourism development in Bali is no exception; by over-emphasizing the economic benefits of tourism, there is a great danger that Bali will be headed toward some serious uncontrolled changes in socio-economic structure, which will damage its traditional values. There is no doubt that tourism has brought some economic blessing to Bali, but prospects for economic development must be balanced against the Balinese culture. It is to be hoped that tourism development can be managed, to control changes to socio-economic structure, so that Balinese traditional values will continue to exist with only slight adaptations.

Tourism in any country will invariably bring with it a number of potentially negative effects in terms of both cultural changes and environmental deterioration. In order to minimize the negative effects in tourism development, it is necessary to anticipate potential problems and to formulate the effects on Balinese traditional village land use patterns. Assuming that the negative effects of tourism upon

traditional village land use patterns can be controlled, it may be expected that the positive effects -- in terms of increased incomes, employment and foreign exchange earnings-- would result in an overall impact which, on balance, is beneficial to the village communities. The comparison of social costs and benefits of tourism development is important in any tradeoff between gains in increased incomes and employment and losses due to cultural and environmental change.

However, even if the negative impact of tourism is minimized, there will still be changes in the way of life of the people and in their physical setting which are extremely difficult to quantify. Therefore, certain value judgements are needed. Fair judgement should be based on evaluations by the villagers, who know what their needs are and what kinds of negative effects have already occurred in their communities.

With or without tourism development, there are of course other forces in Bali which have had a significant impact on the Balinese way of life, forces such as population expansion, urban growth, modern education and communication, etc. The evidence appears to show, however, that the impact from these factors was relatively low compared to what happened after 1969 when tourism began to develop. As the number of tourists increased from 10,000 in 1969 to 240,000 in 1977, and to an estimated 540,000 per year in 1983, the possibility

of significant effects on the culture and environment of Bali may be expected to increase.

2.3 IDENTIFICATION OF THE REGIONAL PROBLEMS AND TOURISM IMPACTS

There is no doubt that tourist development gives economic benefits to the region, even if that income is not distributed equitably. But the main issue is how to reap the benefits of economic development without damaging the characteristics which make it unique. Many studies have identified the importance of the cultural and aesthetic values for the Balinese way of life, and for its tourist attractions. Some tried to identify the impacts of tourism on Balinese culture, but none identify the impact of declining agricultural land on traditional Balinese village land use patterns.

It was explicitly recognized in the Tourism Master Plan that tourism expansion was likely to place great strain on Balinese culture and social life; it was decided to limit the impact on Balinese culture by concentrating the hotel development in one resort area (IBRD, 1974).

This policy may concentrate hotel development, but tourists will wish to visit places outside the resort area. This means uncontrolled development of excursion roads, stopover places, restaurants, and artshops, using agricultural land and changing village land use patterns, so that the concentration policy may not prevent damage to the Balinese culture.

The table of land use in Bali shows significant decline in the ricefields area around 1950, 1970 and 1973. Particularly from 1970 to 1973, it shows more significant decreases, around 75 km^2 per year, compared to 10 km^2 per year from 1950 to 1970 (see Table 2.7).

Table 2.8 shows that most districts, except Karang Asem, experienced sawah decreases from 1961 to 1970. From 1970 to 1973, most also showed significant decreases, except Klungkung, which shows a slight increase. The decreases in Buleleng and Karang Asem were caused by the volcanic eruption of Mount Agung. In Tabanan and Jembrana they were due to changes in rainfall and damage to irrigation works, which might have led to a change in land use from ricefields to dry crops. Some former sawah was also used for the expansion of urban areas there. In Badung, Gianyar and Bangli, declines were caused by such extension of urban areas, attributable to needs of the tourist industry. Since there were no drastic decreases from 1950 to 1961, and considerable decreases from 1961 to 1970 and continuously until 1973, it is assumed that tourism in 1969, has had a strong influence into the declining of agricultural land use, particularly in the district of Badung.

It is noted in the social profile that the Balinese way of life, including agricultural activities and traditional village land use patterns, reflects the Hindu

TABLE 2.7 : Land Use in Bali, around 1950, 1970 and 1973

Land Use	1950		Land Use	1970		1973	
	km ²	%		km ²	%	km ²	%
Sawah (ricefields)	964	17	Sawah (ricefields)	756	13	535	9.5
Dry land agric. and annual crops	1783	32	Dry land agric. and annual crops, and grassland	1522	27	1155	20.5
Grassland	73	..					
Estates	891	15	Estates	1284	24	1283	22.8
Forests	1237	23	Forests	810	14	1127	20.0
Other land	672	11	Non-agric. land	720	13	780	12.0
			Non-prod. land	368	7	302	5.4
			Lakes, ponds	33	..	47	..
			Other (Rivers etc.)				
TOTAL	5,632	100	TOTAL	5,632	100	5,632	100

Sources: Ruth Daroesman, taken from 1950, Monografi Pulau Bali, Op.cit.;
1970, Laporan Penelitian, op.cit.; and Bali Regional Plan Concept
1977-2000, op.cit.

TABLE 2.8 : Area of Sawah (ricefields), around 1950, 1961, 1970 and 1973

District/ Regency (Kabupaten)	Area				% of Total Area			
	1950	1961	1970	1973	1950	1961	1970	1973
		('000 ha)						
1. Badung	19.3	18.3	13.9	12.8	35	33	26	23
2. Jembrana	6.1	7.3	5.7	3.1	7	9	7	3.6
3. Buleleng	13.9	14.0	12.5	6.3	10	11	10	5
4. Tabanan	25.2	25.5	20.0	11.9	29	30	25	13.8
5. Klungkung	4.8	4.8	3.5	3.7	15	15	11	11
6. Gianyar	15.8	15.7	11.2	10.2	43	43	30	28
7. Bangli	3.2	3.3	3.3	2.9	6	6	6	5.5
8. Karangasem	8.1	8.6	5.5	2.5	10	10	6	2.9
Bali	96.4	97.5	75.6	53.5	17	17	13	9.5

Sources: Ruth Daroesman, Op.Cit. and Direktorat Agraria Dati I Bali
(Agrarian Agency of Bali Province), 1973.

religion. The decline of agricultural land use and destruction of traditional patterns will therefore bring about drastic religious changes and undoubtedly affect Balinese traditional values. These values have historical significance in the communal agricultural system, which has an important function as the basic regulator of the independent economic and social unit ruled by a council of villagers under the spirit of Hinduism. Hence, the identification of the problems caused by tourism development, related to the loss of agricultural land and changes in traditional village land use patterns, is critically important.

In order to know what the community needs, and what the people can accept in terms of impacts of tourism on their society, it is necessary to obtain a much deeper understanding of Balinese social units, associations and local groups through studies of the perceptions and evaluations of the Balinese people. This type of study would clarify just how strongly they value their traditions, and what their preferences are about degrees of tourism impact. This clarification will be valuable in evaluating impacts and making decisions about future regional development.

PART II

STUDY DESIGN AND METHODS

CHAPTER 3

THE CONCEPTUAL FRAMEWORK AND THE RATIONALE FOR
THE IMPACT ASSESSMENT STUDY3.1 THE IMPACT ASSESSMENT CONCEPT AND THE RESEARCH DESIGN

Impact assessment involves the identification, examination and evaluation of impacts associated with a given project. Comprehensive impact assessment requires a systematic, inter-disciplinary approach which will ensure integrated use of the natural and social sciences and the environmental design arts.

The purpose of impact assessment is to measure the effects of a program against the goals; it is a tool to be used in subsequent decision making about the program, and in designing future programs. Assessment involves: research design; data collection, analysis and interpretation; and the application of findings in policy recommendations (Weiss, 1972, p.4; and Finsterbusch, 1977 pp.2-24).

This study is only one component of the planning evaluation process and it is solely concerned with community preferences concerning tourism development and its impact on a village society. The research is designed to ascertain the impact of tourism development on traditional village land-use patterns by investigating community preferences, within the comprehensive context of interrelated socio-

economic and environmental aspects over time.

The study initially examines the continuing effects of tourism-development on agricultural land use which may cause major changes in Balinese traditional village land use patterns. These changes will, hypothetically, alter village socio-economic structure and culture. Whether this will have a negative or positive impact is still questionable and needs to be assessed (see Figure 3.1). Then the study focuses on the evaluation of the desirability of such changes and policies, primarily from the perspective of the villagers who directly or indirectly experience the impact of the changes.

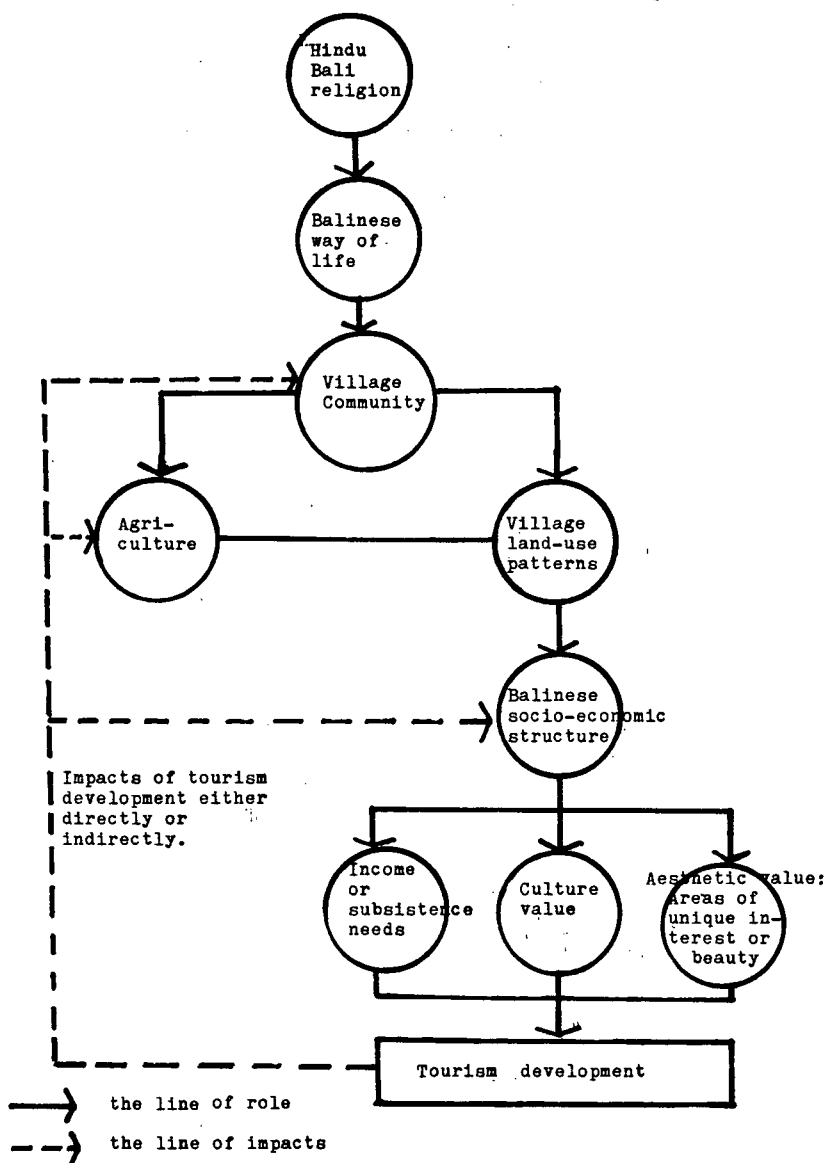
The level of impact in a given village will vary with the degree of project concentration there. One measure of this is a location quotient, the ratio of the amount of land for tourist projects in a village to the total amount used for tourist projects in a given region. Indicators of indirect impact include the distance of each village from the tourist developments, accessibility of the villages, and the number of associated village activities (tourist attractions, art shops, handicrafts, and other agro-industry that supplies the tourists need). Results of this analysis will be used to select the sample villages.

The research framework includes:

- a) a land use survey and analysis of changes to traditional village land use; and

FIGURE 3.1 : THE GENERAL SYSTEMS FRAMEWORK

(The role of Traditional Balinese Culture, in
Balinese Way of life and Tourism Development).



- b) an investigation of villager perceptions and evaluations of changes to traditional village land use as a result of the development of tourism.

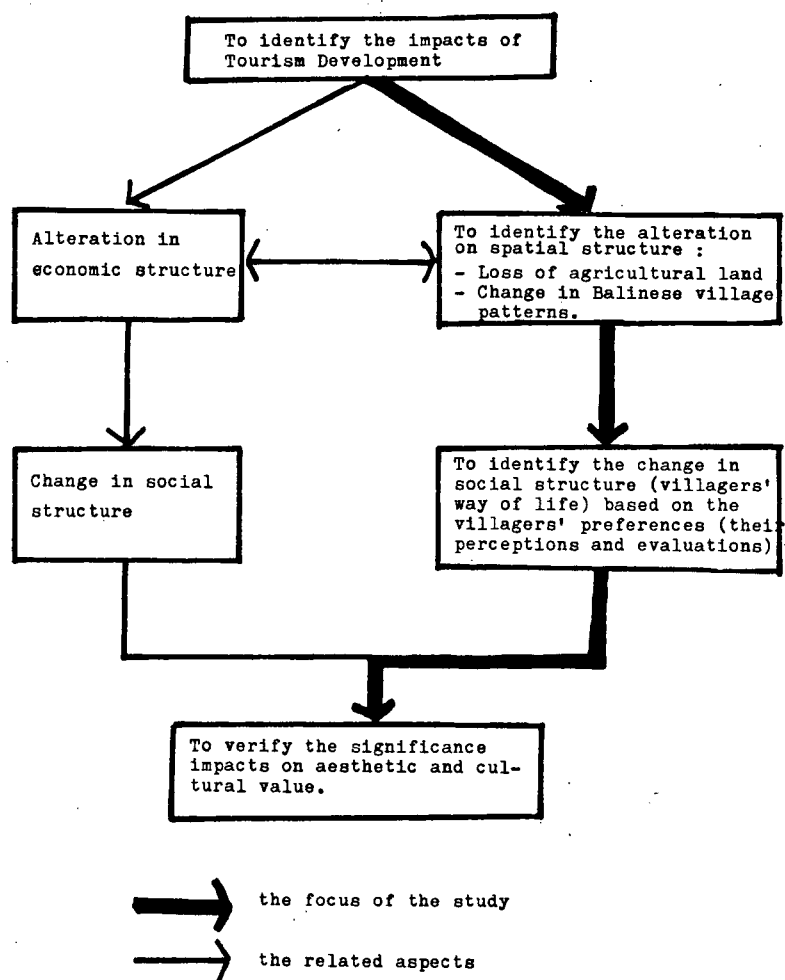
In six villages land use determined in a 1979 field survey is compared with land use over the previous ten years since 1969. Next, the Delphi approach was used to investigate the impact of tourism development on an enlarged sample of 51 traditional villages, selected from three zones of tourism impact. The variables in the questionnaires investigate villager perceptions and evaluations of tourism development and will be used to test the hypothesis (see Figure 3.2).

The surveys were conducted between June 12 and August 29, 1979.

3.2 RATIONALE FOR USING THE IMPACT ASSESSMENT TECHNIQUE, AND THE LIMITATIONS OF THE STUDY

The needs of the community should carry somewhat greater weight in developmental decisions than the wishes of the developer. Most projects will use some land. These land use changes will directly or indirectly affect lifestyles of people in the area. This impact assessment tries to determine whether the goals and objectives stated in the Bali Regional Plan, and especially in the Bali Tourism Development Plan, are being met, specifically whether changes to traditional village land use will have a positive or negative impact on the Balinese culture.

FIGURE 3.2 : THE FRAMEWORK OF THE STUDY



Tourists value the attractive environment and unique culture of Bali. This research will examine retrospectively and predictively the impact of tourism development on these attributes. The relative merits of tourism development versus agriculture need to be assessed based on villager preferences.

The point of view taken in this impact assessment is that of present day Balinese society: that is, villager attitudes, perceptions and subjective evaluations of tourism effects in their own communities.

This study first focuses on changes to village land use over time, to see whether these changes are associated with tourism developments. Secondly, villager perceptions of traditional values and land use changes are examined, as well as their preferences about retention of traditional village land use patterns and Balinese culture. Thirdly, based on villager evaluations of the impact they perceive, the study will attempt to find their preferences as to the degree of impact, with a view to making appropriate policy recommendations.

Due to research time and budget constraints, the examination of changes to village land use was limited to the study of six villages: two in tourist development areas; two in areas partly influenced by tourism; and two isolated from tourism developments. For the Delphi survey fifty-one

traditional villages were selected for analysis, again using the three classifications of impact. The period under investigation in both parts of the survey was from 1969, when large scale tourism development first intruded into Bali, to 1979, when the actual survey questionnaire was administered.

3.3 RATIONALE FOR USING THE DELPHI METHOD

As previously mentioned (in 3.1), an emphasis of the research is the examination of community attitudes and opinions about the impacts of given projects that have changed or may change village land use patterns and thereby villager lifestyles. Villager perceptions and evaluations reflect their knowledge and culture, and failure to recognize the highly complex nature of their preferences must lead inevitably to disaster (Kaufman and Thomas, 1977, p.389).

The Delphi method was used to measure villager preferences based on their perceptions of changes to land use, and their evaluations of the impacts of current and planned development. These preferences demonstrate local objectives, purposes and values (McEvoy and Dietz, 1977, p.13).

One logical way of arriving at a set of measures is to start with a list of major community objectives. Once the objectives are determined and ranked they can be used in defining appropriate impact measures.

The Delphi Method relies on the iterative procedure

by which a panel of experts is requested to provide several rounds of answers to a series of questions. The method has three distinct features: 1) anonymity; 2) controlled feedback; and 3) statistical group response (Van Gigch, 1978, pp. 432-435, Dickey and Watts, 1978, pp. 216-233). The members of the panel answer the questions without confronting each other, or even knowing each other. After each round of questions the answers are tabulated and a probability distribution of the answers is prepared. The next round the participants can evaluate the results of the preceding round. The process is continued until a clear consensus is reached. Usually no more than three rounds are necessary to reach consensus (Van Gigch, 1978).

The Delphi technique can be usefully applied only when specific possible future outcomes based on historical trends are precisely stated. This technique considers each issue in isolation. The technique of cross impact analysis of the villagers' perception and evaluation has to be used to get back to the reality of interdependence of each respondent's judgement. The nature of the Delphi technique is as follows:

- a) The Delphi technique assumes that everyone's judgement is as good as that of everyone else. The respondents do have to assume that someone else's judgement about a question is challengeable.

- b) Delphi claims to eliminate the stifling effects of status in committees through anonymity of the individual forecast. However, a deviant individual still confronts the majority forecast of anonymous experts.
- c) To ensure that everyone puts the same interpretation on a question, greatest weight is placed on very specific and preferably technical matters. This tendency can be described as relative attention to figures on ground. Participants are required to focus upon specific events and make forecasts for those events with regard to changes in context.

3.4 RATIONALE FOR SELECTING THE STUDY AREA

The first stage in any impact assessment should be to define a study area which is relevant and representative of the region potentially affected by a given project.

As the major agricultural land use and the strongest manifestation of traditional Balinese culture exist in the lowlands of Bali, and because tourism development has so far mostly affected the south coast, the impact study is concentrated and investigated the villages in those areas.

The present division of Bali into eight districts (Kabupaten) reflects the boundaries of the former eight "kingdoms". Within these districts are 564 administrative

units called official villages (desa dinas), set up by the government for data collection and dissemination of information and directions from higher levels of government. In everyday social and economic life, however, these administrative units are probably less important to the Balinese than are the traditional village units (desa adat), which have strong influences both physical and spiritual over their members. The traditional Balinese village is first of all a religious unit (Daroestan, 1973, p.29), an important consideration in the planning process.

The Regency of Badung was chosen on the basis of these considerations as the area in which tourist impact on traditional village land use patterns was to be examined.

The study comprises a field survey of land use in six selected villages to determine how it has changed over time, and the investigation of villager perceptions about land use change along with their evaluations of its impact in 51 "enlarged traditional villages", selected by cluster sampling from 146 traditional villages in the Regency of Badung (see Map 3.1). The 51 traditional villages sample could give a clearer picture of the actual impact of tourism in the three different zones of villages classifications. The results from the investigations of the enlarged sample significantly represented the degree of tourism impact in Bali.

THE LIST OF TRADITIONAL
VILLAGES SAMPLE.

63

1. Sub-District of
East Denpasar.

- 1.1 Village of Penatih
- 1.2 " Tonja
- 1.3 " Dangin Puri
- 1.4 " Sumerta
- 1.5 " Kesiman

2. Sub-District of
West Denpasar.

- 2.1 Village of Peguyangan
- 2.2 " Ubung
- 2.3 " Padangsembian
- 2.4 " Pemecutan
- 2.5 " Dauhpuri

3. Sub-District of
South Denpasar.

- 3.1 Village of Sanur
- 3.2 " Renon
- 3.3 " Panjer
- 3.4 " Sesetan
- 3.5 " Pedungan
- 3.6 " Serangan

4. Sub-District of Kuta.

- 4.1 Village of Dalung
- 4.2 " Canggu
- 4.3 " Krobokan
- 4.4 " Kuta
- 4.5 " Tuban
- 4.6 " Jimbaran
- 4.7 " Pecatu
- 4.8 " Ungasan
- 4.9 " Benoa

5. Sub-District of Mengwi.

- 5.1 Village of Sembung
- 5.2 " Baha
- 5.3 " Mengwi
- 5.4 " Penarungan
- 5.5 " Sempidi
- 5.6 " Kapal
- 5.7 " Mengwitani
- 5.8 " Buduk
- 5.9 " Munggu








6. Sub-District of Abiansema

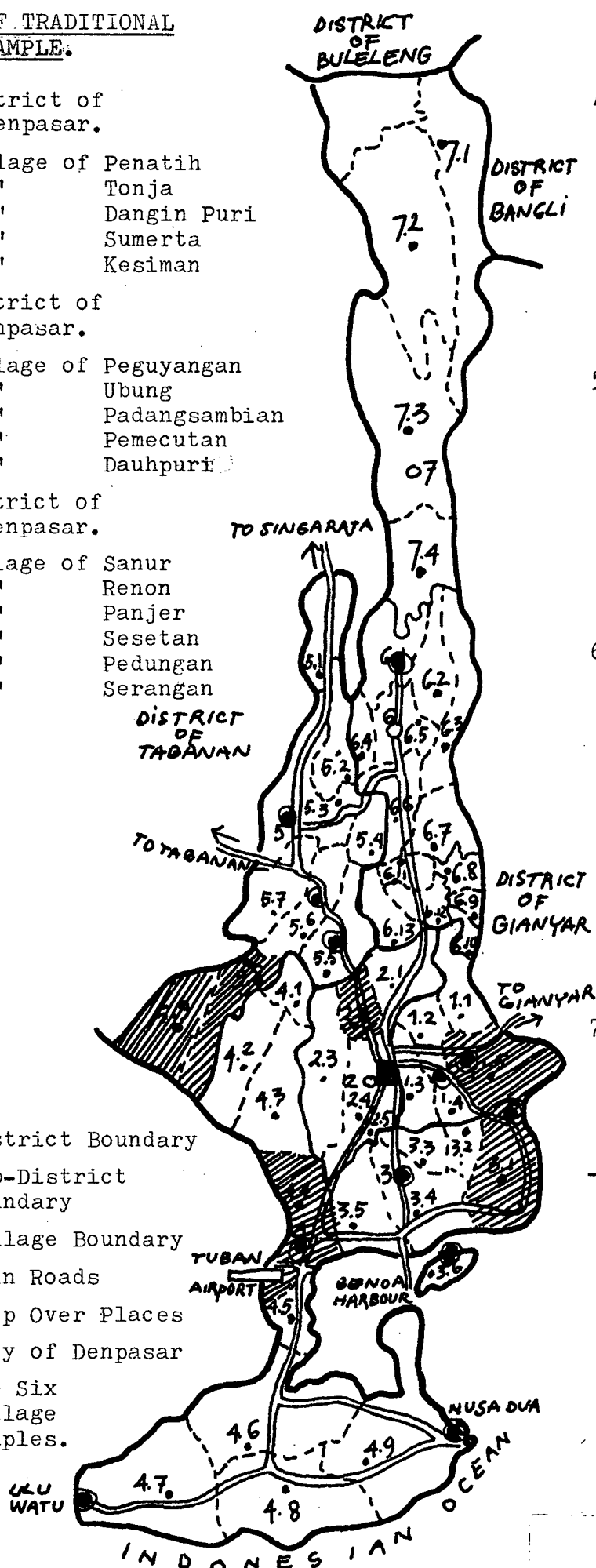
- 6.1 Village of Sangeh
- 6.2 " Taman
- 6.3 " Bongkasa
- 6.4 " Ayunan
- 6.5 " Blahkiuh
- 6.6 " Abiansema
- 6.7 " Mambal
- 6.8 " Sedang
- 6.9 " Angantaka
- 6.10 " Jagapati
- 6.11 " Sibangkaja
- 6.12 " Sibanggede
- 6.13 " Darmasaba

7. Sub-District of Petang.

- 7.1 Village of Belok
- 7.2 " Pelaga
- 7.3 " Petang
- 7.4 " Carangsari

LEGEND:

-  District Boundary
-  Sub-District Boundary
-  Village Boundary
-  Main Roads
-  Stop Over Places
-  City of Denpasar
-  The Six Village Samples.



51 Traditional Villages
Samples.



North

Scale 1 : 300,000

MAP 3.1 : DISTRICT OF BADUNG
(The Villages Sample).

A further reason for choosing the Regency of Badung as the study area is that Badung consists of 51 official villages, for which most of the statistical data are centrally registered. Since accurate data for the traditional villages in certain years was difficult to obtain, this choice made it possible to complete the surveys using this registered data from the corresponding official villages.

All villages in the sample were chosen by using the criteria that was used for selecting the six villages sample and the characteristics of the village within each zone that was identified from the investigation of the six villages sample. The discussion with local government officials in the Bali Planning Unit, the Tourism Planning Board, the Bali Provincial Planning Board, and the Regency of Badung was intended to confirm the significance of these enlarged sample.

3.5 RATIONALE FOR SELECTING THE VARIABLES TO BE INVESTIGATED

Changes in population size, composition, and density distribution produce significant social impacts in themselves, and may lead to a wide variety of changes in other components of the social system. Population changes at the village level may follow as direct and indirect consequences of a given agricultural or tourism project or policy, and will in turn influence other aspects of the overall socio-

economic system: direct and indirect employment effects, income changes, productivity, size and types of activity.

The variables investigated in the study of land use change were: type of use (agriculture, tourist developments, other non-agricultural); and site characteristics (location, distance, access, land value).

In investigating villager perceptions and evaluations, all these socio-economic aspects were explored, as well as land use, agriculture, and tourism development variables.

All variables were studied using secondary data (published materials and documentation of former research), and primary data (land use information for the 6 selected villages obtained from a field survey, and information gathered from 51 villages using the Delphi approach with a two-round questionnaire).

3.6 RATIONALE FOR SELECTING THE RESPONDENTS

Historically, the village authority controls the land and homes in the village, private and communally cultivated ricefields, grazing lands, and unproductive land. The head of the traditional village rules the village in the name of the council. He is usually elected by common approval. A good village chief is a popular and influential man. Once he has been elected, and the choice has been sanctioned by the gods, he cannot decline to hold office without severe penalty. He receives no salary, but enjoys sig-

nificant advantages such as larger shares of land and food. He manages the community, presides over meetings, and organizes all the desa festivals (Covarrubias, 1937, pp.59-60; Geertz, 1975).

From this description it is clear that the role of the traditional village leader is very important. He is likely to know a great deal about the general situation of his village, its changing character, and the relationship of culture to other activities. Hence, his perceptions of land use change and his evaluation of tourism impacts in his village are significant.

To embrace a wider range of views, two other respondents were selected from each village: someone other than a traditional village leader, who is actively engaged in farming and who will therefore feel the direct impact of agricultural land use changes; and someone between the ages of fifteen and thirty-one years, who has completed at least primary school, and who is neither a farmer nor a traditional village leader, but seeking employment in agriculture or in tourism.

Besides the specific criteria described above, the three respondents chosen from each of the 51 villages had to be knowledgeable adult Balinese residents in the village under study. Anonymity of the respondents was maintained.

CHAPTER 4

METHODS4.1 CLARIFICATION OF THE VALUE ORIENTATION

The study examines the value orientations of villagers. Differences in value orientations are demonstrated by differing perceptions of changes to traditional village land use patterns, and by differing evaluations of the impact of current and future tourism development upon agricultural land use and Balinese culture.

The frame of reference for distinguishing villager perceptions involves classification of their orientations as either positive or negative towards traditional values. An orientation favoring continued agricultural land use, maintenance of traditional land use patterns in Balinese villages, and the absence of tourism development, is deemed to be a positive orientation towards traditional cultural values. An orientation towards tourism development and/or non-agricultural activities is considered to be a negative orientation towards traditional cultural values.

Villager evaluations are distinguished according to their agreement or disagreement with statements about the impacts of current tourism development and future development policy. A value judgement is requested.

4.2 OPERATIONALIZING THE HYPOTHESIS

To test the hypothesis required a means of measuring villager perceptions of land use changes and villager evaluations of tourism impacts.

Operationalizing the value orientation for villager perceptions was a straightforward procedure, using the first round questionnaire. Statements related to Balinese culture, agricultural land use, traditional village land use patterns and changes in village land use were constructed to form the measurement scale. Respondents were asked to agree or disagree with each statement. Cumulative value scales were taken as reflecting villager perception of the values in question.

Measurement of villager evaluations, in a second round questionnaire, consisted of formulating their perceptions of changes to traditional village land use and finding out their evaluations of the impacts of current and planned tourism development. These evaluation statements were value judgements with which a respondent could indicate agreement or disagreement using a five point scale. It was considered to be of some interest and importance to verify the assumption that everyone is aware of the relatively high decline in the rate of agricultural land use and its effects on Balinese village land use patterns and culture. In order to obtain more accurate insight into what villager perceptions are of particular aspects of

impact, a distinction was made between the impacts caused by tourism development and other impacts.

Some general personal data was also gathered in both questionnaires to identify their positions, skills, village situations and interests, and thus ensure that selection criteria had been met.

4.3 SELECTION OF THE SAMPLING AREA

The six villages in the first sample were selected as follows:

- two villages that were once agricultural settlements but had become completely dominated by tourist development;
- two agricultural villages that have felt some influences of tourism;
- two agricultural villages isolated from the areas of tourist impact.

The criteria used to measure tourism impacts were:

- 1) concentration of tourist facilities;
- 2) associated tourist activities present;
- 3) distance from or access to tourist facilities and activities.

The 51 traditional villages in the enlarged sample used to measure villager perceptions and evaluations were selected from a total of 146 in the Regency of Badung as earlier described, and were also classified into three zones of tourism impact.

4.4 ADAPTATION OF THE DELPHI APPROACH

4.4.1 Selection of informants

As described earlier, three adults from each of 51 villages were given the two round questionnaire.

4.4.2 Administration

The first of the two rounds of the questionnaire was designed to find villager perception of land use changes, based on findings from the comparison of land use changes in the six villages sampled earlier. Means and other summaries of first round responses were compiled.

The second round of the questionnaire was designed to find villager evaluations of the impact of tourism development on land use in Balinese traditional villages. This round was developed from the findings of the first round.

The results of this Delphi approach were a series of quantitative and semi-quantitative projections, and some subjective and objective data on the reasons for the projections, and on the degree of consensus behind them.

Trained Balinese interviewers who were unknown to the respondents administered the questionnaire. Use of these natives was necessary to overcome language barriers and translation problems.

4.4.3 The Questionnaire

English translations of the questionnaires are attached to this thesis as Appendices C1 and C2. The original versions as they were administered to respondents were in Indonesian; blank copies are on file in the University of British Columbia School of Community and Regional Planning, where they are available to readers with knowledge of the Indonesian language.

The questionnaires were designed for two different purposes: to ascertain villager perceptions of land use changes; and to learn their evaluations of these shifts. The questionnaire for each respondent in each traditional village sampled was similar in format and contents, with the exception of specific personal data. Slightly more information about their positions and interests was requested of the second and third types of respondents than of the village leaders. Mainly closed questions were asked, although some open-ended questions were included to ensure total coverage of important response areas. Each respondent was told that opinions expressed would be confidential and used only for purposes of the study.

The first round questionnaire contained thirty-three questions which cover personal data about the respondent, and his perceptions about the location and condition of his village, socio-economic, agricultural and land use

variables, and tourism development variables.

The second round questionnaire contained seventeen questions covering the respondent's evaluation of the impact of tourism development, agricultural land preservation policy, preservation of Balinese traditional village land use patterns and culture, population policy, and future tourism development policy.

4.5 ANALYSIS OF THE FINDINGS

Analysis of the findings was focused on ascertaining the most suitable level of impact on village society. The retrospective and predictive analysis was used to test the thesis hypothesis. The tested hypothesis in turn can be used as a basic evaluation of the impact of a given project in a given region. This kind of information is useful in deciding the appropriate future developmental policy for a given society, as a part of evaluation process. The analysis consisted of four elements:

- 1) Analysis of changes in traditional village land use 1969-1979 focused on agricultural land use and the proportion of tourist facilities in six villages.
- 2) Analysis of villages perceptions of village land use change examined the extent of land use change: villager value preferences towards traditional practices, changes in agricultural land use, traditional village patterns, Balinese culture, and

tourist development.

- 3) Analysis of the villager evaluation of the impact of tourism development on traditional village land use patterns looked at villager judgement about these impacts, about the tradeoffs between agriculture and traditional culture value, and about tourism development in the foreseeable future.
- 4) Analysis of the tested hypothesis, will result in its rejection or confirmation. This tested hypothesis can be developed for use in recommendations about future development in a given region, and to improve the impact assessment process using a similar methodology.

PART III

DISCUSSION OF THE RESULTS, CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 5

DISCUSSION OF THE RESULTS

This chapter describes the results of a survey and analysis of land use changes in six villages, and villager perceptions and evaluations regarding tourism development and its impact in fifty-one villages in the Regency of Badung.

As earlier mentioned, the survey is part of a broad-based investigation to assess the impact of tourism development upon land use, settlement patterns and socio-economic structure, and thereby upon Balinese culture and environment.

5.1 LAND USE CHANGES CAUSED BY TOURISM DEVELOPMENT IN SIX BALINESE VILLAGES, 1969-1979

5.1.1 Indicators to Measure Traditional Village Land Use Changes

The methodology described in this thesis uses quality of agricultural land use, Balinese traditional village settlement patterns, and the tourist development indicators to examine the actual and predicted impacts of tourism development. The purpose of developing these indicators is to measure in a standardised way changes in Balinese traditional village land use, and changes in traditional values in three different

zones of impact: strong, partial and isolated.

The indicators used to measure changing agricultural land use adapted from Ben-chieh Liu are as shown in Table 5.1.

Table 5.1
INDICATORS OF AGRICULTURAL LAND USE

Item	Units	Indicator of Agricultural Land Use
Area of cultivated land	proportion of total village land	higher proportion
Farm size	mean ha	over 1.0 ha
Agricultural products	mean ton/ha	higher (over 2 ton/ha)
Agricultural fertility	mean of first class agricultural soils	higher mean
Number of farmers	proportions of total village population	higher proportion
Land value	Rupiah/100 m ² /year	Less than Rp. 100,000/100 m ² (less than doubled)

Source : Ben-chieh Liu, 1977, pp. 188-195.

Lower proportions or lower means indicated that there is little agricultural land or that the amount of land used for agriculture has decreased.

The indicators used to measure Balinese traditional village settlement patterns are given in Table 5.2

TABLE 5.2

INDICATORS OF STRONG BALINESE TRADITIONAL VILLAGE SETTLEMENT PATTERNS

Item	Units	Indicator of strong traditional patterns
Ethnic composition in the village	proportion of native Balinese to total village population	higher proportion (above 90%)
Education attainment	proportion of lower level of education	higher proportion
Farming activities	proportion of non-formal activities	higher proportion
Degree of urbanization	proportion of non-agricultural sectors	lower proportion
Traditional village Land Use patterns	proportion of traditional use to total village land use.	higher proportion
Housing type	proportion of traditional housing type	higher proportion
Family size	average household size	above 5 persons
Level of income	mean of percapita income	less than \$20/month
Land tenure and lot property	proportion of village property and heritage land.	higher proportion
Communal life	degree of participation	higher degree
Public facilities and infra-structure	mean of facilities and development	higher mean
Agriculture as a desirable activity in the village	degree of desirability	higher degree

Source: Ibid Ben-chieh Liu, 1977.

Lower proportions or lower means indicate weak or poor traditional village settlement patterns, and thus also indicate existence of traditional village land use.

The indicators used to measure the existence and impacts of tourism development are given in table 5.3

TABLE 5.3

INDICATORS OF THE EXISTENCE OF TOURISM DEVELOPMENT AND IMPACTS
IN THE VILLAGE

Item	Units	Indicator of tourism existence and impacts
Tourist development	ratio of tourist development in the village land use	higher ratio
Number of hotels	ratio of hotel numbers	higher ratio
Number of restaurants	ratio of restaurant numbers	higher ratio
Number of tourist services	ratio of number of tourist services	higher ratio
Number of tourist attractions	ratio of number of tourist attractions	higher ratio
Number of artshops	ratio of artshops number	higher ratio
Number of associated developments: transportation facilities, water supply, electrical supply, recreational facilities	ratio of development	higher ratio
Number of tourism employees	ratio of employee	higher ratio
Level of income	mean of percapita income	higher ratio
Number of tourists	mean of visitors	higher ratio
Land value	rupiah/100 m ² /year	higher (more than 500%)

Source: Ibid Ben-chieh Liu, 1977.

Lower ratios indicate that there is little or no evidence of tourism development and its impacts.

All of these indicators are used in both parts of the survey.

5.1.2 Comparison of Land Use Changes in Six Villages

Based on the reconnaissance survey, earlier reports, and the advice of knowledgeable personnel in the Bali Planning Unit, a six village sample within the Regency of Badung was chosen, consisting of two villages in the strong impact areas (Sanur and Kuta); two villages in the area of partial impact (Kesiman and Ubung); and two villages in the isolated areas (Munggu and Buduk).

The strong impact villages are within the tourist resort areas or within a radius of less than 2 km from any of the established tourist development centres.

The partial impact villages are areas which have few tourist developments and which are mostly within a radius greater than 2 km but less than 5 km from any tourist development centre; also included are areas outside of this radius which are becoming tourist stopover places (scenic areas, tourist attractions, artshop areas, etc.), and areas along the tourist excursion roads which are thus partly influenced by the development of tourism.

The isolated impact villages are areas isolated from the influence of tourism development, which are more than 5 km from any tourist development centre, or those with no direct access to any tourist center; or areas which have no stopover places and are isolated from the tourist excursion roads.

The six-village sample was chosen to give the broadest possible view of changes in traditional village land use and settlement patterns, in terms of effects upon agriculture, housing, and cultural life.

It was found that prior to 1969 land use in most villages was predominantly agricultural, averaging above 75% of total land. After 1969 agricultural land use in the strong and partial impact villages declined drastically, from an average of 90% in Sanur and Kuta to 70% and 75%; and from a 75% average in Kesiman and Ubung to 60% and 55%. However, in the isolated villages of Buduk and Munggu, the decline was smaller, with agricultural land use remaining above 75% (see Appendix Tables A7, A8 and A9).

Before 1969, most of these changes in agricultural land use were the result of population growth and its effects, such as new housing, schools, industry, roads, health facilities, etc. After 1969, agricultural land use changes in the strong impact villages were mainly due to tourist development. In the partial impact villages tourism was only partially the cause, with housing and other types of development also responsible for the changes. However, housing growth and other development in these zones was also influenced by tourism, especially after 1969 when the full impact of the new airport had been felt, and after the 1974 Pacific Area Travel Association (PATA) conference in Bali. Population has increased accordingly in these villages

(see Appendix Table A10). Agricultural land use changes in the isolated villages were fewer and were affected only by housing and other non-tourist developments resulting from population growth.

These findings are summarized in Table 5.4 which shows that the loss of agricultural land in the strong impact villages from 1961 to 1969 was mostly affected by housing and other types of development, and less than 1% by tourist development. However, from 1969 to 1979 losses of land increased by 14% in Sanur and 12% in Kuta. In the partial impact villages of Kesiman and Ubung, there was almost no loss of agricultural land because of tourist development before 1969, but after 1969 agricultural land decreased by 11% in Kesiman and 22% in Ubung. By contrast in the isolated villages of Buduk and Munggu, there was no loss of agricultural land because of tourist development either before or after 1969, and the loss of agricultural land because of housing and other types of development is relatively low compared to the two other zones of tourist impact, where population was higher.

These facts prove that after 1969, the massive tourist development had a significant and direct impact upon the loss of agricultural land, especially ricefields as compared to dry land. With increasing tourism it is likely that more agricultural land will be used for tourist development.

TABLE 5.4. : The Summary Evaluation of the Village
Land-use Changes in the Six Villages Sample.

Year and Land-use changes.		% Total area			1961-1969 Change		1969 - 1979 Change	
Villages		1961	1969	1979	%	Ha	%	Ha
Strong Impact								
Sanur	Cultivated	91 %	81 %	69 %	-10 %	- 87	- 14 %	- 110
	Rice	59 %	50 %	44 %	-15 %	- 79	- 13 %	- 59
	Other	32 %	31 %	25 %	- 3 %	- 8	- 18 %	- 51
	Community	9 %	18 %	26 %	+108 %	+ 87	+ 46 %	+ 77
	House & Religious	n.a	16 %	21 %	n.a	n.a	+ 31 %	+ 46
	Other	n.a	2 %	5 %	n.a	n.a	+194 %	+ 31
	Tourism	.	1 %	5 %	+150 %	.	+367 %	+ 33
	Total area	100 %	100 %	100 %	0 %	0	0 %	0
	= 935.467 Ha							
Kuta	Cultivated	93 %	88 %	77 %	- 5 %	- 46	- 12 %	- 99
	Rice	53 %	54 %	50 %	+ 2 %	+ 9	- 7 %	- 35
	Other	40 %	34 %	27 %	-15 %	- 55	- 21 %	- 64
	Community	7 %	12 %	17 %	+70 %	+ 46	+ 41 %	+ 45
	House & Religious	n.a	8 %	10 %	n.a	n.a	+ 25 %	+ 19
	Other	n.a	4 %	7 %	n.a	n.a	+ 79 %	+ 26
	Tourism	.	.	6 %	+100 %	.	+1800 %	+ 54
	Total area	100 %	100 %	100 %	0 %	0	0 %	0
	= 912.73 Ha							
Partial Impact								
Kesiman	Cultivated	80 %	76 %	67 %	- 5 %	- 43	- 11 %	- 97
	Rice	69 %	67 %	61 %	- 2 %	- 18	- 8 %	- 62
	Other	11 %	9 %	6 %	-20 %	- 25	- 36 %	- 36
	Community	20 %	24 %	31 %	+19 %	+ 43	+ 27 %	+ 72
	House & Religious	16 %	20 %	25 %	+22 %	+ 40	+ 26 %	+ 58
	Other	4 %	4 %	6 %	+ 7 %	+ 3	+ 31 %	+ 14
	Tourism	.	.	2 %	+25 %	.	+1106 %	+ 25
	Total area	100 %	100 %	100 %	0 %	0	0 %	0
	= 1109 Ha							
Ubung	Cultivated	75 %	71 %	55 %	- 5 %	- 23	- 22 %	- 95
	Rice	56 %	54 %	43 %	- 3 %	- 11	- 21 %	- 69
	Other	19 %	17 %	12 %	-11 %	- 12	- 26 %	- 26
	Community	25 %	29 %	45 %	+15 %	+ 23	+ 54 %	+ 94
	House & religious	16 %	18 %	25 %	+12 %	+ 12	+ 34 %	+ 37
	Other	9 %	11 %	20 %	+20 %	+ 11	+ 88 %	+ 57
	Tourism	0	0	0	0 %	0	+100 %	+ 1
	Total area	100 %	100 %	100 %	0 %	0	0 %	0
	= 600 Ha							

... Continued

		% Total Area			1961 - 1969 Change		1969 - 1979 Change	
		1961	1969	1979	%	Ha	%	Ha
<u>Isolated Impact</u>								
Buduk	Cultivated	84 %	83 %	76 %	- 2 %	- 12	- 9 %	- 69
	Rice	61 %	61 %	59 %	- 1 %	- 3	- 2 %	- 13
	Other	23 %	22 %	17 %	- 4 %	- 9	-26 %	- 56
	Community	16 %	17 %	24 %	+ 8 %	+ 12	+43 %	+ 69
	House & Religious	14 %	15 %	21 %	+ 7 %	+ 9	+42 %	+ 60
	Other	2 %	2 %	3 %	+19 %	+ 3	+47 %	+ 9
	Total area = 950.98 Ha	100 %	100 %	100 %	0 %	0	0 %	0
Munggu	Cultivated	89 %	87 %	83 %	- 3 %	- 28	- 4 %	- 35
	Rice	78 %	77 %	77 %	- 1 %	- 11	*	- 3
	Other	11 %	10 %	6 %	-15 %	- 17	-33 %	- 32
	Community	11 %	13 %	17 %	+25 %	+ 28	+25 %	+ 35
	House & Religious	6 %	7 %	10 %	+14 %	+ 9	+39 %	+ 29
	Other	5 %	6 %	7 %	+40 %	+ 19	+ 9 %	+ 6
	Total area = 1037 Ha	100 %	100 %	100 %	0 %	0	0 %	0

Sources : Appendix Table A.7 , A.8 and A.9

Notes : n.a = data not available

* = less than 0.5 % or 0.5 Ha

Sums of subcategories may differ slightly from totals
because of rounding.

The changes in agricultural land use in a given site will indirectly also affect other agricultural land due to possible disruption of the whole traditional irrigation system. Hence, since the traditional Balinese village land use patterns and communal life with its culture depends strongly on agriculture, the existence of those changes will affect either directly and indirectly village land use patterns and socio-economic structure of the villages, as is shown clearly in the strong and partial zones of tourist impact. This did not happen in the isolated villages.

In the strong impact villages dramatic changes occurred in the traditional land use patterns: changes in the traditional environment; in the natural landscape; and in the architectural characteristics of existing buildings. In the partial impact villages, some slight changes appeared in the land use patterns, but only in the areas of housing and agricultural land. In the isolated villages, the land use patterns essentially retained their traditional character.

The changes to traditional village land use patterns in the three zones of tourist development impact parallel the changes in villager socio-economic structure: population distribution; ethnic distribution; educational level; occupations; distribution of the labour force. Such socio-economic changes, therefore, can be predicted from the

changes in the proportion of land devoted to agriculture. Such land use change, therefore, assumes major significance.

5.1.3 Characteristics of Changes to Traditional Village Land Use in Three Zones of Tourism Impact

Based on changes to traditional land use in the six villages, characteristics of the villages within each different zone of tourism impact can be identified.

a) Strong Impact Villages

In this sector, land use patterns are no longer characterized by agriculture. Non-agricultural activities have strongly intruded. The village settlement patterns and housing types are a mixture of traditional, transitional and modern. Socio-economic structures are heterogenous, the population being a mixture of native Balinese, Chinese, and others (see Table 5.5). Religions include Hindu, Bali, Moslem, Christian and others. Sixty percent of the labour force is engaged in agricultural activities. (see Table 5.6). Land values are markedly higher in these strong impact areas compared to other zones. Population density, income level, and educational level are further indicators of tourism's impact. The population density highest in the strong impact zone (see Appendix Table A10), as are the villager incomes. Educational level, while not a directly related factor, is also slightly higher here, with more

TABLE 5.5: The Distribution of Villager Ethnic Origin in the Six Villages Sample in 1978.

	Indonesian Citizen				Foreigners				Total	
	Native		Non-native (Chinese Ethnicity)		Chinese		Dutch		Village Popula- tion	%
	Persons	%	Persons	%	Persons	%	Persons	%		
<u>Strong Impact</u>										
Sanur	12,507	99.11	50	0.40	44	0.35	18	0.14	12,619	100
Kuta	10,583	98.45	134	1.25	32	0.30	0	0	10,749	100
<u>Partial Impact</u>										
Kesiman	11,960	99.79	14	0.12	11	0.09	0	0	11,985	100
Ubung	4,709	99.37	26	0.55	4	0.08	0	0	4,739	100
<u>Isolated</u>										
Buduk	7,685	100	0	0	0	0	0	0	7,685	100
Munggu	8,732	100	0	0	0	0	0	0	8,732	100

Sources : Statistic Reports, Population of Badung 1977, Statistic Agency
The Regency of Badung, November 1978.

TABLE 5.6 : The Distribution of Labour by Occupation
in the Six Villages Sample 1976.

Villages	Strong Impact				Partial Impact				Isolated Impact			
	Sanur		Kuta		Kasiman		Ubung		Buduk		Munggu	
	Number of Persons	% of Employed Population	Number of Persons	% of Employed Population	Number of Persons	% of Employed Population	Number of Persons	% of Employed Population	Number of Persons	% of Employed Population	Number of Persons	% of Employed Population
1. Employed	6,333	100	4,160	100	4,317	100	1,944	100	3,921	100	5,513	100
a. Agricultural sector	4,187	66.11	2,505	60.21	2,813	65.16	852	43.83	3,500	89.26	4,859	88.14
b. Industry	22	0.35	000	00	8	0.19	300	15.43	000	00	000	00
c. Trade	984	15.54	482	11.59	415	9.61	169	8.69	120	3.06	289	5.24
d. Government service	735	11.61	109	2.62	170	3.94	131	6.74	193	4.92	119	2.16
e. Handicrafts	219	3.45	000	00	350	8.10	102	5.25	000	00	000	00
f. Other	186	2.94	1,064	25.58	561	13.00	390	20.06	108	2.76	246	4.46
2. Not Employed	5,157		6,434		7,590		2,622		3,782		3,138	
Total Population	11,490		10,594		11,907		4,566		7,703		8,651	

Sources: Rural Development Agency of Badung Regency (PMD) Data

Tabulation 1976.

villagers having attended high school and university (see Table 5.7).

b) Partial Impact Villages

In these villages, tourism development and its associated activities have not significantly affected village land use patterns and village life. Land use is still predominantly agricultural. The changes that have occurred are the result of housing growth as well as of tourism, as the effects of tourism spread out from the areas of strong impact. The settlement patterns and housing characteristics are a mixture of traditional and transitional. Socio-economic structures are homogeneous. Native Balinese dominate the population, along with some Chinese (see Table 5.5). Religious differences are slight. As in the area of strong impact, 60% of the population is employed in the agricultural sector (see Table 5.6). Land values have changed somewhat less than in the strong impact villages, but much more than in the isolated villages. Population density is lower than in the strong impact zone, slightly higher than in the isolated zone (see Appendix Table A10). Villager income level is similar to that of the strong impact areas, but higher than in the isolated villages. Educational level is close to that in the strong impact zone, with more villagers having attended high school and university than in the isolated areas (see Table 5.7).

TABLE 5.7 : The Educational Level in the Six Villages Sample in 1976

Educational Level Villages	Uneducated		Primary School		High School		University		Total Population	
	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%
<u>Strong Impact</u>										
Sanur	5,132	44.7	4,505	39.2	1,780	15.5	73	0.6	11,490	100
Kuta	2,958	27.9	7,140	67.4	464	4.4	32	0.3	10,594	100
<u>Partial Impact</u>										
Kesiman	5,099	42.8	5,912	49.7	820	6.9	76	0.6	11,907	100
Ubung	1,386	30.4	2,539	55.6	630	13.8	11	0.2	4,566	100
<u>Isolated Impact</u>										
Buduk	4,155	53.9	3,125	40.6	423	5.5	0	0	7,703	100
Munggu	3,789	43.8	4,373	50.6	469	5.4	20	0.2	8,651	100

Source : PMD (Rural Development Agency) of Badung Regency Data Tabulation 1976.

c) The Isolated Villages.

Tourist development and its associated activities do not exist in these remote areas, even though there are some potential tourist attractions. The land use patterns are dominated by agriculture. Losses of agricultural land are the result of housing development due to population increase alone. The settlement patterns and housing remain traditional. Socio-economic structures are homogenous, the population consisting purely of native Balinese. There is a slight mixture of religions. Job opportunities are predominantly generated by the agriculture sector, which employs 80% of the labour force (see Table 5.6). Changes in land value are lower than in the other two regions, and land transactions have been few. Population density is the lowest of the three zones (see Appendix A10), as are average income levels, and educational levels (see Table 5.7).

All of these characteristics were used to develop the first round questionnaire, and to select and classify the 51 villages in the enlarged sample as to tourism impact. This classification was re-evaluated on the basis of the results of the first round questionnaire.

5.2 VILLAGERS' PERCEPTION AND EVALUATION OF LAND USE CHANGE AND TOURISM IMPACT

5.2.1 Significance of Villager Response

As mentioned earlier, villager perceptions and evalua-

tions of changes to land use and of the impact of tourism development were investigated in 51 selected traditional villages within the Regency of Badung by interviewing 3 respondents from each of these villages. The sample was selected from 146 traditional villages and represents about 35% of the universe (Regency of Badung), and about 3.5% of the 1470 traditional villages in Bali.

The three villagers chosen (village head, farmer, and another educated adult) were selected by the interviewer in each village based on criteria earlier described; their selection was verified through personal information gathered in the first round questionnaire. In general, the data shows that respondents met the selection criteria.

The detailed questionnaires appear in the Appendix C.1 page 163. Tables A.11, A.12 and A.13 in the Appendix summarize the data collected.

The significant findings for each villager type follow below:

a) The Village Heads (see Table A.11)

These respondents perceived their villages in a very similar way to that of the researcher, in terms of tourism impact. The villages they saw as being strongly impacted all were within 2 km of the tourism centres, and all the villages they saw as isolated were outside a radius of 5 km from these centres. Sixty-nine percent of the villages they saw as suffering medium impact fell within radius of

2 and 5 km away.

According to these village leaders, the existence of tourist development and its impacts can be correlated with the percentage of incidence of the following phenomena: non-agricultural use of land; non-traditional land use patterns; non-native Balinese resident in the village; non-traditional housing patterns and housing types; private land tenure, and changes in land value. The strong impact villages have the highest incidence, and the isolated villages the lowest. Other identifying characteristics are the major activity of the village, higher incomes of the residents, and certain characteristics of the villagers.

Existence of traditional village land use and traditional cultural values was linked by the village heads with high percentages of agricultural activities and land use, native Balinese residents, traditional village patterns and housing types, and village land tenure, with little or no change in land values, and with an absence of tourist development. The isolated villages had the most traditional village land-use and traditional values, and the strong impact villages the least.

b) Village Farmers (see Table A.12)

The farmers identified tourism development or its impacts as occurring in areas with a higher percentage of other major activities, a mixture of agricultural and non-agricultural land use in the village, a system of private

land tenure, a better level of income, the existence of modern and transitional types of housing and village land use patterns, and increases in land value from 1969 to 1979. For all of these items the strong impact villages have the highest percentage value and the isolated villages the lowest.

Farmers saw the existence of traditional village land use and traditional cultural values as being identified with a higher percentage of agricultural activities, the non-existence of tourist development, the dominance of agriculture in land use, traditional housing types and village land use pattern, private land tenure by heritage, and less change in land value or no change at all. The isolated impact villages had the strongest traditional village land use and traditional cultural values and the strong impact villages the weakest. However, there are indications that in all villages there still exist strong traditional values. For example, more than 70% of respondents chose agriculture as the most desirable activity, and 75% preferred to stay in their communal life rather than transmigrate.

c) Educated Adult (see Table A.13)

These respondents saw the existence of tourist development or its impacts as being identified with a higher percentage value of other major activities, a mixture of

agricultural and non-agricultural land use in the village, the purchase of private property, a better level of income, the selection of non-agricultural activities as most desirable, the existence of modern and transitional types of housing and village land use patterns, and changes in land value between 1969 and 1979. For all of these items, the strong impact villages had the highest percentage value and the isolated villages the lowest.

The responses of these people identified the existence of traditional village land use and traditional culture with a higher percentage of agricultural activities, the non-existence of tourist development, the dominance of agricultural land use, the existence of traditional housing types and village land use patterns, the selection of agricultural activities as most desirable, the existence of private land tenure by heritage, and less change in land value or no change at all. The isolated impact villages had the strongest traditional village land use and cultural values, and the strong impact villages had the weakest. However, as did the other respondents, the educated adults in the three zones of impact still showed strong indications of the existence of traditional values--for example, the selection of agricultural activities as most desirable still remained strong, 12.5% in the strong and partial impact zones, and 33% in the isolated zone.

In addition, 80% of the educated adult showed no desire to transmigrate, due to their love for and strong ties to their traditional cultural values and their communal lives.

From the questionnaire evidence it can be concluded that tourist development and its impacts are very evident in what the researcher initially defined as areas of strong and partial impact, and much less evident in the villages defined as isolated. The traditional village land use patterns and cultural values still strongly exist in these isolated villages, but are weaker in the strong and partial impact zones.

An important conclusion derived from the questionnaire responses is the respondents in general met the criteria set for them, and therefore information collected from them can be taken as valid representation of the perceptions and evaluations of each of the three villager groups (traditional leader, farmer, and educated adult).

A second important conclusion reached from this part of the questionnaire is that the classification by the researcher of the 51 villages into the three zones of impact agreed with the perceptions of the villagers to a large extent.

5.2.2 Classification of the 51 Traditional Village into Three Different zones of Tourism Impact

The 51 village sample was classified into three zones of tourism impact based partially on the characteristics

of the 6 villages initially investigated. However, this classification was intended as tentative only, subject to review after administration of the first round questionnaire. (For which the classification was not particularly important). However, for interpretation of both first and second round questionnaire results, the validity of the classification had to be confirmed.

The 51 traditional villages sample (shown in Map 3.1) was classified into 8 strong impact villages, 16 partial impact villages, and 27 isolated villages. Appendix Table A.14 gives the detailed classification of the villages.

5.2.3 The Perceptions of the Villagers

In this section, villager perceptions were requested concerning changes to village land use, the existence of tourism development and associated activities, the impacts of this development, and the strength of traditional cultural values in the three zones.

Results are discussed below. The actual questionnaire appears in its English translation in Appendix C.1. A value of 1 was assigned to responses which indicated the existence of traditional cultural values. A value of -1 was assigned to responses which indicated the existence of changes to village land use, or the existence of tourism development and its impacts. A value of 0 was assigned to neutral responses.

The responses of the villagers, and the weightings assigned to these, are shown in Appendix Tables A.15, A.16 and A.17. Table 5.8 summarizes these perceptions, and the consensus of opinion with regard to each item is presented below.

1. Villager Perceptions of Communal Life

This item assumed participation in community discussions to be a manifestation of the existence of communal life. On average the respondents indicated that communal life in the isolated villages was slightly stronger than in the partial impact villages, and that it was quite weakened in the strong impact villages.

2. Perceptions of Traditional Village Land Use Patterns

This item inquired about the convenience of the village environment as a place to live, related to the existence of traditional village land use patterns. In summary, villager perception was that these patterns existed in the isolated villages slightly more strongly than in the partial impact zones, and far more strongly than in the areas of strong impact.

3. Traditional Cultural Values

Respondents were asked to select the most suitable type of development for the village (agriculture, tourism, or other), as a reflection of the traditional value orientation of the respondent and of the community in general. The results indicated that traditional values are strong in isolated and partially impacted villages, and slight in strongly

TABLE 5.8 : Summary of the villagers' perception.

Items (X_1)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	$\bar{X} = \frac{\sum X_1}{17}$
<u>Traditional Village Leaders</u>																		
Strong Impact	0.500	-0.500	-0.500	-0.750	1.000	1.000	0.875	1.000	0.500	0.625	0.750	1.000	-0.125	-0.250	0.375	-0.125	0.500	0.346
Partial Impact	0.875	0.938	0.375	-0.438	1.000	1.000	0.563	0.938	0.125	0.563	0.188	0.063	-0.313	-0.313	0.250	0.000	0.063	0.346
Isolated Impact	0.630	0.889	0.815	-0.111	1.000	0.963	0.630	0.630	-0.074	0.296	0.000	-0.333	-0.407	-0.296	0.000	-0.889	0.296	0.238
<u>Farmers</u>																		
Strong Impact	-0.625	0.875	0.750	0.375	0.875	0.875	0.000	0.625	0.375	0.375	-0.125	0.750	0.250	-0.500	0.875	-1.000	0.125	0.287
Partial Impact	-0.250	0.813	0.563	-0.313	0.875	0.938	0.250	0.813	-0.125	0.563	0.063	0.313	0.250	-0.375	0.750	-0.813	0.000	0.254
Isolated Impact	-0.111	0.889	1.000	0.938	0.963	0.889	-0.185	0.444	-0.444	0.259	-0.296	0.000	-0.444	-0.296	0.815	-0.926	0.000	0.153
<u>Educated Adults</u>																		
Strong Impact	-0.250	0.000	0.500	-0.125	1.000	0.875	0.125	0.750	0.500	0.750	0.250	-0.750	0.500	-0.500	1.000	-0.750	0.125	0.384
Partial Impact	-0.375	0.875	0.125	-0.563	0.938	0.938	0.125	0.750	-0.063	0.375	0.313	0.500	0.313	-0.188	0.875	-0.875	0.125	0.246
Isolated Impact	-0.259	0.926	0.852	0.000	0.889	0.852	-0.222	0.704	-0.444	0.519	-0.037	-0.148	-0.556	-0.481	0.778	-0.963	0.000	0.142
<u>Villagers' Perception (Averages)</u>																		
Strong Impact	-0.125	0.125	0.250	-0.167	0.958	0.917	0.333	0.792	0.458	0.583	0.292	0.833	0.208	-0.417	0.750	-0.625	0.250	0.319
Partial Impact	0.083	0.875	0.354	-0.438	0.938	0.959	0.302	0.834	-0.021	0.500	0.188	0.292	-0.083	-0.292	0.625	-0.563	0.063	0.282
Isolated Impact	0.087	0.901	0.889	-0.025	0.951	0.901	0.074	0.593	-0.321	0.358	-0.111	-0.160	-0.469	-0.358	0.531	-0.926	0.099	0.178

Sources: Table A.15, A.16 and A.17.

impacted areas.

4. The Role of Agriculture in Supporting Village Life

On average the villagers perceived agriculture as playing a moderately weak role in the partial impact villages, and a slightly weak role in the strong impact villages, in the isolated villages the response was almost neutral.

5. Relationships among Agricultural Activities, Balinese Religion, Culture, and Traditional Land Use Patterns

The villagers saw strong relationships in most villages.

6. The Importance of these Relationships

There was a strong consensus that these relationships must be maintained if Balinese traditional culture is to survive.

7. Disruption of Irrigation in Relation to Land Use Patterns

The perception here was that disruption of traditional irrigation patterns had a slight effect upon traditional village land use patterns.

8. Culture as Tourist Attraction and as a Way of Life

Villagers believed strongly that Balinese traditional culture was a vital part of daily life in Bali, and that it served as a major attraction to tourists, although less so in the more isolated areas.

9. Tourism Impacts on Agricultural Land and Irrigation

The development of tourism was seen by the villagers

as impacting on agricultural land and traditional irrigation systems moderately in the strong impact villages, slightly in the partial impact villages and very little in the isolated villages.

10. Tourism Impacts on Balinese Culture

Most of the villagers perceived a moderate effect of tourism development on Balinese culture.

11. The Benefits of Tourism on Village Socio-Economic Structures

The development of tourism in the villages experiencing strong and partial impacts was seen to be of slight socio-economic benefit. Almost no socio-economic benefits were perceived in the isolated villages.

12. The Existence of Tourist Development, and Its use of Agricultural Land

Most villagers indicated that tourism development was very apparent and was using agricultural land in the strongly impacted villages. There was seen to be slight development and use of land in the partially impacted villages and almost none in the isolated ones.

13. Tourism Development and Land Use Changes

Villagers in the areas affected by tourism development saw slight changes in traditional patterns of land use; those in the isolated villages saw none.

14. The Negative Effects of Tourism

Villagers saw little or no negative effects on themselves resulting from the development of tourism.

15. The Effect of Uncontrolled Change on Culture and Environment

Most villagers felt that Balinese culture and village environment would be strongly affected if uncontrolled loss of agricultural land resulted in changes to agricultural land use and traditional settlement patterns.

16. Community Discussion of These Issues

There appeared to be little or no community discussion of agricultural land use, traditional patterns, and culture.

17. Other Comments about Tourism Development and Its Impacts

The responses to this question indicated some slight support for the preservation of traditional values.

The General Consensus

It can be concluded therefore, that Balinese villagers perceive the existence of traditional cultural values, of traditional land use patterns, and of some impact on these by tourism developments. The degree of perceived impact varies with village location and characteristic. The villagers describe moderate impact in the strong and partial impact villages and slight impact in the isolated villages.

The second round questionnaire, investigating villager evaluations of policy statements, was based on these first-round results.

5.2.4 The Villagers' Evaluations

This phase of the investigation attempted to determine villager attitudes towards future policies dealing with:

- a) preservation of Balinese culture and Balinese traditional village land use patterns;
- b) population;
- c) agricultural land preservation; and
- d) tourism development.

An English translation of this second-round questionnaire appears as Appendix C.2. Positive scores were assigned to responses that indicated strong agreement (+2) or agreement (+1) with statements that supported traditional values. Negative scores were assigned to responses that indicated lack of agreement with statements that supported traditional values. The results appear in Appendix Table A.18, A.19 and A.20 and are summarized in Table 5.9. The policy statements and summaries of villager evaluations follow:

1. Villager Evaluation of Population Policy

The policy suggested to solve the problems of population increase included more intensive family planning and transmigration programs, other non-agricultural activities, and possible extension and intensification of agriculture. The villagers' evaluation of this policy in general indicated very strong support for the maintenance of traditional values, with the highest agreement in the strong impact villages and

TABLE 5.9 : Summary of the Villagers' Evaluation

Items (X _j)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	$\bar{X} = \frac{\sum X_j}{17}$
<u>Traditional Village Leaders</u>																		
Strong Impact	0.938	-0.875	0.438	0.250	0.750	0.750	0.563	0.625	1.000	0.750	0.875	0.563	0.313	0.313	0.938	0.875	0.563	0.566
Partial Impact	0.781	-0.719	0.313	0.281	0.688	0.781	0.563	0.500	0.875	0.625	0.719	0.531	0.344	0.093	0.750	0.719	0.531	0.493
Isolated Impact	0.759	-0.574	-0.185	0.296	0.741	0.630	0.611	0.593	0.667	0.611	0.593	0.519	0.037	-0.074	0.759	0.648	0.481	0.418
<u>Farmers</u>																		
Strong Impact	0.875	-0.750	0.438	0.563	0.750	0.813	0.563	0.188	0.750	0.563	0.625	0.313	0.250	0.188	0.750	0.500	0.375	0.456
Partial Impact	0.719	-0.531	0.281	0.344	0.656	0.719	0.594	0.313	0.719	0.469	0.563	0.375	0.219	0.219	0.781	0.656	0.406	0.441
Isolated Impact	0.796	-0.611	0.000	0.333	0.704	0.759	0.630	0.519	0.722	0.648	0.556	0.593	0.074	-0.093	0.648	0.667	0.519	0.439
<u>Educated Adults</u>																		
Strong Impact	0.938	-0.625	0.500	0.375	0.500	0.688	0.625	0.500	0.688	0.563	0.750	0.500	0.000	-0.063	0.750	0.563	0.438	0.452
Partial Impact	0.875	-0.625	0.156	0.188	0.625	0.531	0.313	0.563	0.719	0.563	0.563	0.531	0.125	0.031	0.500	0.688	0.406	0.397
Isolated Impact	0.778	-0.667	-0.056	0.111	0.630	0.611	0.537	0.426	0.648	0.500	0.574	0.537	0.056	-0.204	0.611	0.630	0.370	0.358
<u>Villagers' Evaluation (Averages)</u>																		
Strong Impact	0.917	-0.750	0.459	0.390	0.667	0.750	0.584	0.438	0.813	0.625	0.750	0.459	0.188	0.146	0.813	0.646	0.459	0.491
Partial Impact	0.792	-0.625	0.250	0.271	0.558	0.677	0.490	0.459	0.771	0.552	0.615	0.479	0.229	0.114	0.677	0.688	0.446	0.449
Isolated Impact	0.778	-0.617	-0.080	0.247	0.692	0.667	0.593	0.513	0.679	0.586	0.574	0.550	0.056	-0.124	0.673	0.648	0.457	0.405

Sources: Table A.18, A.19 and A.20.

the lowest in the isolated villages.

2. Evaluation of Tourism Development Policy

This statement asserted that the development of tourism was necessary in order to increase employment and per capita income. A positive score indicated disagreement with the statement and thus support for maintenance of traditional values. Responses here indicated less support for traditional values in the strong impact villages than in the two other zones of impact.

3. Development of Tourism on Agricultural Land

Disagreement with this statement was taken to indicate support for the maintenance of traditional values. Such support was more evident in the strong and partial impact villages.

4. Changes in Agricultural Land Use

Most of the villagers indicated moderate support for maintenance of traditional values (i.e. they disagreed with the policy of using agricultural land for other purposes), especially in the zone of strongest impact.

5. Controls on changes to Agricultural Land Use

Most villagers supported such a policy of controls, indicating a desire to preserve their traditional culture, with the greater degree of support in the isolated villages.

6. Preservation of Prime Agricultural Land

Strong agreement with a policy of preserving agricultural land indicated that most villagers supported traditional values, though less so in the isolated villages.

7. Traditional Irrigation Systems

Most respondents favoured maintenance of these systems, with highest agreement in the isolated villages.

8. Control of Tourism Development

In the isolated villages, residents strongly supported tourism control in order to maintain traditional culture, while there was moderate support for such a policy in the two other zones of impact.

9. Preservation of Housing and Land Use Patterns

A strong preference, more marked in the strongly impacted villages, was shown for preserving traditional housing, architecture, and land use patterns as a means of maintaining cultural values.

10. Management of Land Use Changes

To lessen the impact on traditional culture, this statement advocated laws governing land use values, transfer of ownership, and effects on irrigation. Most villagers strongly agreed with such a policy, especially in the strong impact zones, indicating a high level of support for traditional values.

11. Options for Long Term Development

Respondents were requested to evaluate three alternatives: a total shift to non-agricultural activities; a balance between tourism and agriculture; and an integrated program of transmigration, family planning and distribution of tourism to other regions. There was strong support in all villages for the second and third policies, which would best maintain traditional values.

12. Location of Tourism in Areas Unsited to Agriculture

Most respondents strongly favoured such location of tourism, which was interpreted as supporting traditional values.

13. Concentration of Tourism in Sanur, Kuta, Denpasar and Nusa Dua

There was only slight support for such a policy of concentration, with the most agreement in the partially impacted villages and the least in the isolated villages.

14. A Decentralist Policy to Balance Social and Economic Effects

Overall, villagers indicated only slight support for such a policy in the strongly and partially impacted villages, and even less support in the isolated zones.

15. Tourism Without Disruption of Traditional Village Land Use

Most respondents strongly supported a policy that would site tourism development in a way that would not interfere with traditional patterns of land use; such support was especially marked in the zone of strongest tourist impact.

16. Regulation to Preserve Traditional Land Use Patterns

A suggested policy of integrated development and law enforcement involving zoning, building, and operation permits, and regulation of land transactions, met with strong agreement among all villagers, especially in the partially impacted villages.

17. The Involvement of Local and Central Governments in Tourism Control

There was moderate support for this concept, with highest agreement in the strong impact villages and lowest in the partial impact zone.

The General Consensus

From the results of this second round questionnaire, it was concluded that there are slightly different goal preferences among the villagers in the three zones with respect to the impacts of tourism development and the maintenance of traditional values. In general, however, most respondents moderately supported policies that would maintain these values. The greatest support occurred in the villages of strongest tourist impact, and the least occurred in the isolated villages.

This and earlier research was used in examining the hypothesis.

5.3 THE HYPOTHESIS EVALUATION

5.3.1 Results Related to the Operational Hypothesis

The formal hypothesis presented in Chapter 1 of this thesis stated that villagers in the areas most affected by tourism development would be less in favour of retaining traditional land-use than those in isolated areas. This is because of the decline of agricultural activity and the increase of urban activities, particularly because of the tourist activity which offers more economically attractive employment. The consensus of villager preferences with regard to tourism impacts and the maintenance of traditional land-use values in the three zones of impact is presented in Table 5.9. These results are used to evaluate the hypothesis.

From this formulation, the hypothesis must be rejected. There is a positive relationship between the measured variables of tourism development impact and the maintenance of traditional values towards land-use.

This is not a very surprising conclusion considering that it is obvious that the greatest loss of agricultural land has occurred in the strong impact villages. Clearly the respondents living in the strongest impact area have the most negative experience of the loss of agricultural land and respond to this situation with attitudes that regret the loss of traditional land-use.

Under the impact of large scale tourism development, the advantages of maintaining such values and preventing agricultural land loss have become clear to many village residents. The villagers in the areas most affected by tourism development have the greatest opportunity to reach this conclusion, and it is these people who place the greatest value on assets they realize they are in the process of losing -- their agricultural land and their traditional culture.

From these findings, it can be concluded that tourism has different degrees of impact in the three zones, in physical, social, economic and cultural terms. These effects are greater in the strong and partial impact villages than in the isolated villages. There is some decline of the traditional values in most of the villages (reflected in the only moderate support of traditional values) due to the losses of agricultural land, and changes to traditional village land use, settlement patterns, socio-economic structure. This decline has not reached a critical point yet, because the direct and indirect impact of tourism development on traditional land use values are still limited. Once the critical point is passed, there is no doubt that traditional values will decline drastically. This will occur especially in the areas most affected by tourism development where there will exist less traditional land use values than in isolated areas. This tendency is indicated strongly by the villagers' evaluation of the given statements

in questions number 2, 5, 7, 8, 12 and 16 in the second-round questionnaire.

5.3.2 Discussion of the Results

This section is intended as an overview of the process and the results of the investigation of village land use changes, and of villager perception and evaluation of land use changes and tourism impact on the villages. It also gives an overview of the support for and opposition to those land use changes and of tourism impact in the three different zones.

Investigation of traditional village land use changes has been structured to examine all of the indicators of changes to traditional village land use and the impact of tourism development in the three different zones of impact. Such indicators can be used to compare village land use changes in the three zones of impact and to identify the characteristics of the traditional village land use changes, and therefore contribute to a clear picture of the impacts of a change in the different villages. In fact, for the three zones of tourism impact, there are different characteristics of land use changes, and of tourism impact on the village socio-economic structure and its culture. For example more agricultural land has been lost in the strong impact villages compared to the isolated villages, and this affects the villagers' per capita income and job

opportunities in the strong impact villages compared to the isolated villages. These effects are also reflected in the mixed village ethnic groups and the religious patterns in the strong impact villages compared to the isolated villages. These results of the examination may help to understand the objective changes, and they are crucial to an understanding of villager perceptions and evaluations, especially in developing the first round questionnaire and in constructing the primary classification of the 51 village sample into three zones of tourism impact.

The Delphi Method was chosen to assess villager perceptions and evaluations of traditional village land use changes and the impact of tourism development.

Villager perception of the existence of the traditional village land use changes and of the existence of tourism development impact was determined from respondents' personal information and their perceptions of their own villages. The yes or no responses to the interview questions were formulated into percentage values and value scales showing the strong or weak existence of traditional village land use changes and the existence of tourism development impacts. Assessment shown significant differences in Balinese traditional culture values, traditional village land use patterns and the impact of tourism development in the three zones. Personal information about the villagers was used to check the significance of the primary classification of the 51-village

sample. The results of the villager perception section were used to develop the policy statements that would be evaluated in the second round questionnaire.

To assess villager evaluations about preserving value related to the traditional village land use patterns, and about managing tourism development and its associated policies a questionnaire was designed to be delivered to three selected respondents from each village. The key aim in this questionnaire was to learn the extent of opposition to or support for the maintenance of traditional values. The responses to the interview questions were formulated into value scales which showed perspectively the degree of support for maintaining traditional value. Assessment of the villager evaluations shows moderate support for the maintenance of traditional values. However, there are slight differences; as to the degree of support, which is highest in the strong impact villages and lowest value in the isolated villages. This verifies that the hypothesis of this thesis is untrue. This conclusion is considered reasonable because it is consistent with the entire investigation especially if it is integrated with the results of each villagers' evaluations, perceptions, and personal information. It should also be realized that the traditional village land use patterns and agricultural values still predominantly exist in most villages, and most of the indicators of traditional culture values in most villages (such as Balinese ethnic group and Balinese religion)

are also still dominant.

All of these results are important information with implications for planning, and for similar study in the future.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 THE IMPLICATIONS OF THE RESULTS FOR PLANNING

This discussion has ranged over a variety of topics; from a hypothesis about different villager attitudes toward traditional values in the villages of the three zones of tourism impact, through discussion of changes to traditional village land use from 1969-1979 and future development and of an empirical investigation of villager perception and evaluation of tourism development impact on agricultural land use, including its effects on traditional village settlement patterns and Balinese culture.

It was suggested that the problems of preserving traditional cultural values and managing the pressure of modernization should be clearly formulated, based primarily on society's perception and evaluation of the impact of growth on its goal preferences. This work was an attempt to support this contention by developing community input. The hypothesized was rejected, because in fact the traditional values still exist to a moderate degree in the strong impact villages, more than in the isolated villages. However, a decline of the traditional values was shown to exist in fact. Most villagers understood this and strongly

avored maintaining prime agricultural land and traditional Balinese culture.

Although the data is insufficient to warrant a definitive statement, a recommendation will be offered as to the meaning of the results for planning purposes. As the accuracy and validity of statistical data in Indonesia, especially at the village level, are invariably poor, the modelling strategy of impact assessment for this thesis was kept simple. It was designed to test the operational hypothesis. To avoid greater error, it avoided inter-correlated variables, using only addition or subtraction where possible and multiplication or division only where absolutely necessary, and avoiding as far as possible the raising of variables to powers (Alonso, 1968). Hence to test the operational hypothesis several simple analyses of villager perceptions and evaluations were built which among them use all of the data. Some sort of average of these was attempted to give predictors which are far stronger than a single villager's opinion.

On the basis of the interpretation of the results derived from this work, it is maintained here that societal input into the planning process is needed, in order to know the residents' needs and/or the impact of a given project on them. This input is very important information for planning orderly development for the benefit of the society in

the future. In this case especially we are dealing with possible changes to land use that could impair the productivity of the land, which is strongly related to traditional culture values.

Land use decisions are too crucial to our total environment to leave to the motivations of various interest groups. The key relationships between our use of land and the quality of our environment, which also has socioeconomic effects, should be understood by planners, policy makers at all level of responsibility, and the community. Of all the factors that determine the quality of our environment, the most fundamental is the use we make of our land. (Redding and Parry, 1973, p.3; and McHarg, 1971, pp.103-115).

The impact assessment study focused on the effects on the Balinese culture of changes to traditional village land use patterns, i.e. agricultural land use, caused by tourism development.

Assessing these and many other issues concerning the level and nature of tourism, using direct input from the villagers, is vital if in the future tourism is not to be a disruptive force.

From the secondary data reviews and the investigation of land use changes in the six villages, personal information about villagers, villager perceptions and evaluations, it was recognized that tourism development is very attract-

ive for Bali, but that there are also social economic and environmental disadvantages.

The results show the advantages of tourism development:

- 1) tourism affects only a limited group of villagers in the strong impact villages (by generating jobs or income).
- 2) it leads to the development of new facilities such as roads, water supply, electrical supply, sewage works etc.
- 3) it increases understanding by allowing people of different cultures to meet.
- 4) it causes some preservation of the region's cultural and natural beauty for tourists.

The disadvantages of tourism are:

- 1) it increases governmental costs for importing special tourist amenities; thus the income from tourist spending "leaks out".
- 2) it is responsible for destruction of the local environment through the building of modern highrise hotels and transportation systems.
- 3) it causes pollution of the natural environment, especially of agricultural areas.
- 4) it creates friction and undermines social and cultural standards of the native Balinese.

If we compare these advantages and disadvantages of massive tourism development in Bali over the last decade, there is no doubt tourism has brought some new economic development to Bali and has even to some degree helped maintain traditional values. However, there has been an unequal distribution of those positive impacts to the villagers with more income, jobs, and new development in the strong impact villages than in the isolated villages.

This study, then, concludes that the impact of tourism development on the Balinese traditional village land use patterns in most villages is not yet critical. The primary question to be answered is for how long and at what level can these positive impacts be maintained. There are already indications of the decline of traditional values in the strong and partial impact villages compared to the isolated villages. Thus, because the relationships between traditional values and agriculture are very strong, there is need for a strong policy of agricultural land preservation before the losses become too great.

However, this policy by itself is not sufficient since the loss of agricultural land is directly caused not only by the tourist development, but also by other associated development. An integrated developmental planning policy to control effects on agricultural land use is necessary, and the involvement of the central and local government and the community in the process is needed too.

This policy should ideally include

- 1) a more effective family planning program;
- 2) distribution of tourism to the other tourist destinations in the other islands.
- 3) an education program designed to create employees not only for non-agricultural activities (i.e. tourism and government services) but also for maintaining and improving the agricultural sector.
- 4) a more intensive and attractive transmigration program in order to encourage Balinese to transmigrate.

6.2 REVIEW OF THE IMPACT ASSESSMENT STUDY

The impact assessment used in this thesis was designed in a way similar to a social impact assessment study that involves a contrast between present ambient conditions and probable or desirable future states (adapted from Vlachos and Team, 1975, p.20; and Olsen and Mervin, 1977).

It aimed at answering these five questions:

1. What goals are sought by the community?
2. What trends characterize the development and realisation of a given tourism project?
3. What broad physical and non-physical factors influence such trends?
4. What predictions can be made about probable and possible future developments?

5. What policy alternatives may produce the greatest net gains from a given project?

Thus tourism development impacts on agricultural land use have been assessed not only on the area within which social life takes place, but also on the people and organizational structures of the village community. The existence of tourism relates to, coincides with or may even conflict with values, goals, and objectives of the local as well as the larger society. This study, was limited to studying the villagers' perception and evaluation. The term impact as defined by Boothroyd (1978) implies that a casual relationship exists or might exist between the impacting thing and the impacted thing. In this study it was applied to the casual relationship between tourism and associated development, agricultural land use, traditional village settlements patterns and Balinese culture. Positive as well as negative impacts have been considered in terms of their supportive or weakening effects upon traditional values.

Impacts occur at various levels of social systems, in this case, of the village system. Three interlocking dimensions were used as part of the effort to describe the village community and provide the framework for an eventual assessment of impacts:

1. Profile of the ambient conditions of the village environment.
2. Criteria exemplified in a variety of descriptive dependent variables under the general heading of quality of life (social well-being).
3. Impacts, or the effects and consequences of alteration to an ongoing system (Balinese traditional systems), leading to a consideration of a range of alternatives for future development.

Those undertaking a social impact study for use in planning and decision-making must be fair in assigning blame or praise to impacts, so that the citizens, decision makers, and planners, can understand the true nature of the situation (Boothroyd, 1978). The Delphi Method used to obtain the villagers' perception and evaluation was part of the process seeking to understand the true nature of the situation.

On the positive side, in proceeding with this Delphi method, it was found that the villagers were eager to co-operate and participate in this study. The administration of the two-round questionnaire itself tended to make villagers aware of the problems involved in the planning process. It was found that, although this particular questionnaire was difficult, with administration by local trained interviewers, approximately 95% of the respondents were able to perform the operations. More over, by interviewing rep-

representative samples of villagers from the three impact zones considerable savings in time and cost could be realized.

On the negative side there are two types of possible error: error of measurement and error of specification (Alonso, 1968). Error of measurement could happen first because there were some limitations in the results, e.g. there was some question as to whether the respondents really understood the questions and answered them correctly, due to their limited education, the interviewer's ability to explain the statements clearly, and the time constraints. These conditions were also hard to measure because they were influenced by the diversity of human interpretation and response. Preparing a summary statement of these responses that is truly representative of them was difficult. Secondly there were problems with the second administration of the questionnaire, to the larger sample. It was extremely time consuming and there were some changes in answers over time. Thirdly, a positive value was assigned to answers which supported traditional values. This may have led to a confusion of the reality versus the utopia in the minds of the villagers. There are also doubts as to whether the respondent was ever fully aware of his own value system.

The error of specification may have occurred because the list of seventeen given statements, perceived and

evaluated by the villagers, was equally weighted without making a differential ranking of the importance of each statement in supporting preservation of traditional values.

6.3 RECOMMENDATIONS FOR COMPLEMENTARY RESEARCH

In spite of possible data specification error in assessing the impact, and low accuracy of the value measurement for assessing the villagers' preferences, the addition of the average (means of the value scales) of the villagers' perception and evaluation is largely valid. As stated by Alonso (1968), the operation of addition is relatively benign with respect to the accumulation of error. It is apparent from the experience of the impact assessment study that has been discussed that further research is still needed. This complementary research will give a better understanding of the villagers' preferences.

As the main objective of the thesis is to verify the operational hypothesis, and the heart of the analysis is to learn villager perceptions and evaluations, complementary research should emphasize these areas. The results of the Delphi approach depend strongly on the significance of the villages sample characteristics, villages sample classification into three zones of tourism impact, and the accuracy of the value scales and weighting systems given to the villagers responses to the given statements. Improvement to avoid the errors of specification and of measurement should

primarily be done within these contexts.

The significance of the villager evaluations collected in the second round questionnaire depends strongly on the results of the villager perceptions collected in the first round questionnaire. Hence, the definite classification of the villages sample into three zones of tourism impact, and the given statements designed to be perceived and to be evaluated are the areas that need assessment in proceeding with complementary research that is to improve the validity of the thesis results.

In the area of improving classification of the villages sample, using the villagers yes and no responses, the scalogram analysis developed by Guttman and his associated (Oppenheim, 1976, 143-154) can be used to test our group of items for "scalability" by seeing whether it will yield a scale with a satisfactory coefficient of reproducibility. This analysis enables us to see how far our items and villager responses to them deviate from the ideal scale patterns. Such a ranking will give more accurate results for classifying the villages into different zones of tourism impact.

In the area of improving the statements to be perceived and evaluated, the coefficient correlation could be used to see if there is a positive or negative correlation between the items and the given statement (Moroney 1976, pp.271-320). Correlations among statements can be used to improve the

selection and specification of the items and the valuation or weighting system for respondents' attitudes.

A third round questionnaire, provided the villagers are willing to participate would give more assurance of the results of the villagers' evaluation in the second round questionnaire.

Finally, because the responses could change with time depending on surrounding elements of impact assessments, a method would have to be developed that would monitor or allow for a continual updating of the general results.

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APPENDICES

APPENDIX A: TABLES A.1 TO A.20

TABLE A.1 : Numbers of Hotels in Bali 1969 - 1972

	International			Domestic		
	Hotel	Rooms	Bed	Hotel	Rooms	Bed
1969	12	557	1,131	n.a	n.a	n.a
1970	12	557	1,131	n.a	n.a	n.a
1971	13	609	1,235	183	2,498	4,490
1972	23	845	1,690	224	2,832	n.a

n.a = data not available

Sources : Tourism Agency, University of Udayana Report 1973,
p.38; Bali Planning Unit, Regional Data 1976

TABLE A.2 : Numbers of Hotel (International and Domestic)
in Bali 1971, and the distribution in each district

District/Regency (Kabupaten)	Hotels	Rooms	Beds
1. Badung	161	2,638	4,993
2. Jembrana	3	35	72
3. Buleleng	8	74	124
4. Tabanan	6	196	366
5. Klungkung	7	77	117
6. Gianyar	5	48	91
7. Bangli	2	6	14
8. Karangasem	2	33	48
 B A L I	 194	 3,107	 5,825

Sources : Bali Planning Unit, Regional Data 1976.

TABLE A.3 : Kabupaten (Regency) Receipts, Buleleng and Badung
(RP 000)

	Buleleng		Badung		
	1972/3	1973/4	1972/3	1972/3	1973/4
	Budgeted		Budgeted	Actual	Budgeted (unrevised)
a. Receipts					
Balance previous year	700	n.a.	n.a.	--	n.a.
Provincial Grant	46,869	51,822	36,000	35,900	45,000
Contribution from other kabupaten	nil	2,500	nil	nil	nil
b Tax receipts					
Ipeda	51,750	41,690	38,000	84,400	40,000
Hotel, restaurant and entertainment tax	650	2,000	130,000	198,900	137,000
c. Other taxes	2,335	6,035	6,700	} 89,724	8,151
Charges for services	22,350	27,504	26,400		44,300
Other	11,150	3,204	2,900		4,650
Total receipts	135,704	133,241	240,000	408,924	279,010

n.a = data not available

Sources: Anggaran Pendapatan dan Belanja Daerah Bidang Routine Kabupaten Badung Tahun 1973/1974: Anggaran Pendapatan dan Belanja Bidang Routine Daerah Kabupaten Buleleng Tahun 1973/1974.

TABLE A.4 : Increase in vehicles in Bali 1960 - 1975 (includes
Automobiles, trucks, buses and motor cycles)

District/ Regency	1960	1970	1971	1972	1973	1974	1975
Badung	n.a	4,418	5,560	6,763	11,215	14,651	15,792
Jembrana	n.a	649	737	570	681	1,329	1,454
Buleleng	n.a	2,276	2,483	1,539	1,875	3,415	4,588
Tabanan	n.a	1,548	1,681	1,176	1,625	2,657	2,965
Klungkung	n.a	693	736	503	647	795	883
Gianyar	n.a	756	848	610	943	1,395	1,574
Bangli	n.a	225	229	169	177	248	277
Karangasem	n.a	265	301	289	313	522	588
B A L I	4,198	10,830	12,575	11,619	17,476	25,012	28,121

n.a = data not available

Sources: SCETO Report, Volume 5, 1971; Traffic Office Bali, 1976

TABLE A.5 : NUMBERS OF ARTSHOPS FROM 1969 - 1972 IN BALI

District (Kabupaten)	1969	1970	1971	1972
Badung	28	28	35	55
Gianyar	17	17	16	36
Klungkung	4	4	4	4
Buleleng	1	1	2	2

Sources : Bali Provincial Trade Agency, University of
 Udayana Report 1973, p.39

TABLE A.6 : NUMBERS OF RESTAURANTS IN BALI 1969 - 1972

	1969	1970	1971	1972
Restaurants	n.a	n.a	10	39
small rest- aurants	n.a	n.a	64	64
Total			74	103

n.a = Data not available

Sources : Bali Trade Agency, University of Udayana Research
Report, 1973.

TABLE A.3 : Land use changes in the Strong Impact Villages
Sanur and Kuta in 1961 - 1979.

Land Use	Sanur										Kuta									
	1961		1969		1971		1975		1979		1961		1969		1971		1975		1979	
	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%
1. Agricultural Land-use	847.97	90.65	760.423	81.29	746.072	79.75	690.867	73.85	649.780	69.46	846.73	92.76	801.12	87.77	791.50	86.70	745.62	81.69	701.875	76.80
- Ricefields	550.00	58.80	470.563	50.30	469.250	50.16	450.505	48.16	412.150	44.06	481.50	52.75	490.61	53.75	484.48	53.07	480.03	52.59	454.975	49.89
- Dry-land agriculture and Others.	297.97	31.85	289.860	30.99	276.822	29.59	240.362	25.69	237.630	25.40	365.23	40.02	310.51	34.02	307.02	33.63	265.76	29.10	246.900	27.06
2. Tourist Development and its associated: Hotels, home-stays, cottages, restaurants, artshops etc.			9.189	00.98	10.935	1.17	40.130	4.29	42.500	4.54			3.00	0.33	5.56	0.60	34.14	3.74	56.625	6.20
3. Housing areas: Houses, Religious facilities, cemetery etc.	87.50	9.35	150.186	16.06	161.600	17.27	185.150	19.79	196.247	20.98	66.00	7.24	75.64	8.29	80.93	8.85	92.60	10.15	95.340	10.45
	(Total only 2+3+4)																			
4. Other non-agricultural uses: Schools, Health center, village center, roads, industry etc.			15.669	1.67	16.860	1.81	19.320	2.07	46.940	5.02			32.97	3.61	35.28	3.85	40.37	4.42	58.89	6.45
Total	935.467	100	935.467	100	935.467	100	935.467	100	935.467	100	912.73	100	912.73	100	912.73	100	912.73	100	912.73	100

Sources: Bali Land-use Maps : Directorate of Land use, 1961, 1971, and
Bali Regional Plan 1969, 1977; Agrarian Land use Maps: 1975;
B.P.R.I.P. Villages Survey 1977; and Six Villages Survey 1979.

TABLE A.8 : Land-use changes in The Partial Impact Villages;
Kesiman and Ubung in 1961 - 1979.

Land Use	Kesiman										Ubung									
	1961		1969		1971		1975		1979		1961		1969		1971		1975		1979	
	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%
1. Agricultural Land-use	884.90	79.79	841.53	75.88	813.66	73.37	785.70	70.84	744.31	67.12	448.05	74.68	425.00	70.83	412.50	68.75	353.283	58.88	329.550	54.92
- Ricefields	758.95	68.43	740.81	66.80	726.72	65.53	710.42	64.06	678.96	61.23	336.34	56.06	325.12	54.19	317.38	52.90	269.840	44.97	255.600	42.62
- Dry land agriculture and others.	125.95	11.36	100.72	9.08	86.94	7.84	75.28	6.78	65.35	5.89	111.71	18.62	99.88	16.64	95.12	15.85	83.473	13.91	73.790	12.30
2. Tourist de- velopment and its associated; Hotels, home- stays, cottages, restaurants, Artshops etc.	1.83	0.17	2.28	0.21	11.28	1.02	20.00	1.80	27.50	2.48	000	00	000	00	000	00	000	00	0.93	0.16
3. Housing Areas: Houses, Reli- gious facilities cemetary etc.	179.85	16.22	220.00	19.84	236.06	21.28	241.80	21.80	278.48	25.11	98.02	16.33	109.85	18.31	115.56	19.26	131.680	21.95	146.97	24.50
4. Other non- agricultural uses: schools, health center, village center, roads, industry etc.	42.42	3.82	45.19	4.07	48.00	4.33	50.98	5.56	58.71	5.29	53.93	8.99	65.15	10.86	71.94	11.99	115.037	19.17	122.55	20.42
TOTAL	1109	100	1109	100	1109	100	1109	100	1109	100	600	100	600	100	600	100	600	100	600	100

Sources : Bali Land-Use Maps : Directorate of Land-use, 1961, 1971 and
Bali Regional Plan 1969, 1977 ; Agrarian Land Use Maps 1975;
B.P.R.I.P. Villages Survey 1977; and Six Villages Survey 1979.

TABLE A.9 : Land use in the Isolated Villages, Buduk and Munggu in 1961 - 1979.

Land Use	Buduk										Munggu									
	1961		1969		1971		1975		1979		1961		1969		1971		1975		1979	
	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%	Area in Ha	%
1. Agricultural land-use : 800	84.13		738.48	82.91	778.45	81.86	768.47	80.81	719.58	75.67	924.50	89.15	897.00	86.50	894.58	86.27	888.88	85.72	862.37	83.16
- Ricefields	577.17	60.69	574.65	60.43	574.35	60.40	570.07	59.95	561.73	59.07	810.25	78.13	799.71	77.12	799.71	77.12	799.71	77.12	796.86	76.84
- Dry land agriculture and others.	222.83	23.43	213.83	22.48	204.10	21.46	198.40	20.86	157.85	16.60	114.25	11.02	97.29	9.38	94.87	9.15	89.17	8.60	65.51	6.32
2. Tourist development and its associated; Hotels, Homestays, cottages, restaurant, Artshops etc.	000	00	000	00	000	00	000	00	000	00	000	00	000	00	000	00	000	00	000	00
3. Housing areas : 133.76 Houses, Religious facilities, cemetery etc.	14.07		143.24	15.06	152.49	16.03	156.77	16.48	203.37	21.39	65.85	6.35	74.28	7.16	76.39	7.36	79.45	7.66	102.63	9.90
4. Other non-agricultural uses: schools, health center, village center, roads, industry etc.	16.24	1.80	18.76	1.98	20.04	2.11	25.74	2.71	28.03	2.94	46.65	4.50	65.72	6.34	66.03	6.37	68.67	6.62	71.99	6.94
TOTAL	950.98	100	950.98	100	950.98	100	950.98	100	950.98	100	1037	100	1037	100	1037	100	1037	100	1037	100

Sources: Bali Land-Use Maps: Directorate of Land-use, 1961, 1971 and Bali Regional Plan 1969, 1977; Agrarian Land Use Maps 1975; B.P.R.I.P Villages Survey 1977; and Six Villages Survey 1979.

TABLE A.10 : Population Growth and Density in the Six Villages
Sample, 1961 - 1978.

Village	Area in Km2	TOTAL POPULATION EACH YEAR							DENSITY PER Km2										Average popu- lation increase each year (%)			
		1961	1971	1974	1975	1976	1977	1978	1961	% per- year	1971	% per- year	1974	% per- year	1975	% per- year	1976	% per- year		1977	% per- year	1978
<u>Strong Impact</u>																						
Sanur	9.4	7,211	9,982	10,218	10,904	11,490	12,373	12,619	767	3.8	1,062	0.79	1,082	6.7	1,160	5.34	1,222	7.69	1,316	1.98	1,342	3.65
Kuta	9.1	6,859	9,238	9,189*	9,438	10,594	10,510	10,749	754	3.5	1,015	-0.25	1,010	2.67	1,037	12.25	1,164	-0.72	1,155	2.25	1,181	2.99
<u>Partial Impact</u>																						
Kesiman	11.1	7,939	10,391	10,500	10,650	11,907	11,978	11,985	718	3.1	936	0.53	946	1.37	969	11.89	1073	0.56	1009	0.01	1080	2.70
Ubung	6.0	3,177	4,018	4,551	4,530	4,566	4,687	4,739	529	2.6	669	6.65	758	0.66	763	-0.26	761	2.62	781	1.15	790	2.56
<u>Isolated Impact</u>																						
Buduk	9.5	5,575	7,499	7,399*	7,494	7,703	7,685	7,685	692	1.4	789	-0.63	779	1.28	789	2.79	811	-0.25	809	0.00	809	0.97
Munggu	10.3	7,188	8,321	8,236*	8,285	8,651	8,732	8,732	698	1.6	808	-0.49	800	0.50	804	4.48	840	0.95	848	0.00	848	1.23

1969 Data not available by village.

* Decline because of transmigration to Sulawesi or inter-village movement.

1969 The Opening of International Airport.

1974 PATA (Pacific Area Travel Association) Conference was held in Bali

Source : Statistic Reports, Population of Badung from 1961 to 1977,
Statistic Agency of Regency of Badung.

TABLE A.11 : The Head of Traditional Villages' Personal Information and Villages Conditions.

Items	Villages		Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage(%)	Total	Percentage(%)	Total	Percentage(%)	Total	Percentage(%)
1. Village Site and Respondent's Background Information.								
a. Distance								
<2 Km	8	100	-	-	-	-	-	-
2- 5 Km	-	-	11	68.75	-	-	-	-
>5 Km	-	-	5	31.25	27	100	-	-
b. Sex								
Male	8	100	16	100	27	100	-	-
Female	-	-	-	-	-	-	-	-
c. Age								
>50 years	9	62.50	9	56.25	19	70.37	-	-
35-50 years	3	37.50	6	37.50	6	22.22	-	-
15-35 years	-	-	1	6.25	2	7.41	-	-
d. Marital Status								
Married	8	100	16	100	27	100	-	-
Unmarried	-	-	-	-	-	-	-	-
2. The Role as a Traditional Village Leader.								
a. Length of Job								
<5 years	-	-	8	50.00	10	37.04	-	-
5- 10 years	5	62.50	4	25.00	2	7.41	-	-
>10 years	3	37.50	4	25.00	15	55.55	-	-
b. Function								
Only as a Traditional Leader	7	87.50	15	93.75	25	92.59	-	-
Also as an Official Leader	1	12.50	1	6.25	2	7.41	-	-
c. As a Villager								
<5 years	-	-	-	-	-	-	-	-
5- 10 years	-	-	1	6.25	-	-	-	-
>10 years	8	100	15	93.75	27	100	-	-
3. The Ethnicity								
a. Native Balinese	8	100	16	100	27	100	-	-
b. Non- Native Balinese	-	-	-	-	-	-	-	-

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	Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
4. The Level of Education.						
Uneducated	-	-	-	-	3	11.12
Primary School	5	62.50	10	62.50	21	77.77
High School	3	37.50	5	31.25	1	3.70
University	-	-	-	-	1	3.70
Other	-	-	1	6.25	1	3.70
5. The Village Major Activity.						
Agriculture	2	25.00	13	81.25	27	100
Mixture	4	50.00	3	18.75	-	-
Non- Agriculture	2	25.00	-	-	-	-
6. The Existence Of Tourist Devt. or Tourism Potential.						
Exist	8	100	12	75.00	-	-
No Exist	-	-	3	18.75	23	85.18
Potential	-	-	1	6.25	4	14.82
7. The Dominant Land Use and the Existence of Traditional l.u. Patterns.						
a. The Dominant Land Use						
Agriculture	2	25.00	15	93.75	27	100
Mixture Land Use	4	50.00	1	6.25	-	-
Non-Agriculture	2	25.00	-	-	-	-
b. The Existence of Traditional Village Land Use Patterns.						
Traditional Patterns	3	37.50	16	100	27	100
Mixture Patterns	5	62.50	-	-	-	-
Non- Traditional Patterns	-	-	-	-	-	-
8. The Agriculture Fertility.						
First Class Agricultural Soils	5	62.50	9	56.25	15	55.55
Second Class	3	37.50	6	37.50	10	37.04
Third Class	-	-	1	6.25	2	7.41

... continued

	Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
9. The Other Important Agriculture Production.						
Cattle	2	25.00	2	12.50	3	11.12
Poultry	2	25.00	-	-	1	3.70
Fishery	3	37.50	2	12.50	2	7.41
Mixture	1	12.50	11	68.75	2	7.41
No Other	-	-	1	12.50	19	70.37
10. The Village Population and the Labour Force.						
a. The Village Population						
Less than 5000 inh.	-	-	7	43.75	13	48.15
5000 - 10,000 inh.	3	37.50	5	31.25	13	48.15
More than 10,000 inh.	5	62.50	4	25.00	1	3.70
b. The Labour Force Structure						
Young Ages	4	50.00	2	12.50	13	48.15
Middle Ages	3	37.50	11	68.75	-	-
Old Ages	-	-	2	12.50	1	3.70
No Answer	1	12.50	1	6.25	13	48.15
11. Major Economic Sector of the Village.						
Farming	-	-	3	18.75	16	59.26
Tourism	-	-	-	-	-	-
Government Services	-	-	-	-	-	-
Trade and Industry	-	-	-	-	-	-
Mixture Activities	8	100	13	81.25	10	37.04
No Answer	-	-	-	-	1	3.70
12. The Villager Income Level per Month.						
Less Than US. \$ 20	-	-	1	6.25	8	29.62
US. \$ 20 - \$ 100	3	37.50	11	68.75	4	14.82
More Than US. \$ 100	5	62.50	4	25.00	-	-
No Answer	-	-	-	-	15	55.55
13. The Dominant Ethnic Group						
Native Balinese Less than 90 %	5	62.50	-	-	-	-
Native Balinese 90 - 99 %	3	37.50	12	75.00	4	14.82
Native Balinese 100 %	-	-	4	25.00	23	85.19

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	Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
14. The Village Type of Housing and the Village Land Use Patterns.						
a. Housing Type						
Traditional	2	25.00	3	18.75	18	66.67
Transitional	3	37.50	3	18.75	-	-
Modern	3	37.50	10	62.50	9	33.33
b. Village Land Use Patterns						
Traditional	2	25.00	12	75.00	27	100
Mixture	4	50.00	4	25.00	-	-
Non- Traditional	2	25.00	-	-	-	-
15. The Lot Property and the Land Tenure.						
a. The Lot Property						
Heritage	5	62.50	9	56.25	19	70.37
Bought	1	12.50	4	25.00	1	3.70
Rent	2	25.00	3	18.75	7	25.93
b. The Land Tenure						
Private	8	100	12	75.00	14	51.85
Village	-	-	4	25.00	13	48.15
16. The Land Value Changes from 1969-1979.						
No Changes	-	-	-	-	5	18.52
Changes Less Than 2 Times	-	-	-	-	11	40.74
Changes from 2 - 5 Times	-	-	3	18.75	6	22.22
Changes More Than 5 Times	8	100	13	81.25	-	-
Does Not Know/ No Answer	-	-	-	-	5	18.52

TABLE A.12 : The Village Farmer's Personal Information of his background and his village conditions.

Items	Villages		Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
1. Respondent's Background.								
a. Age								
> 50 Years	4	50.00	2	12.50	7	25.94		
35-50 Years	3	37.50	10	62.50	17	62.96		
15-35 Years	1	12.50	4	25.00	3	11.10		
b. Sex								
Male	8	100	16	100	27	100		
Female	-	-	-	-	-	-		
c. Marital Status								
Married	8	100	16	100	27	100		
Unmarried	-	-	-	-	-	-		
2. As a Villager.								
< 5 Years	1	12.50	-	-	-	-		
5 -10 Years	-	-	-	-	-	-		
>10 Years	7	87.50	16	100	27	100		
3. The Ethnicity.								
Native Balinese	8	100	16	100	27	100		
Non- Native Balinese	-	-	-	-	-	-		
4. The Level of Education.								
Uneducated	2	25.00	3	18.75	3	11.11		
Primary School	5	62.50	11	68.75	21	77.78		
High School	1	12.50	2	12.50	3	11.11		
University	-	-	-	-	-	-		
Other	-	-	-	-	-	-		
5. The Agriculture in the Village.								
a. The Role of Agricultural Activity								
Major Activity	7	87.50	15	93.75	27	100		
No Major Activity	1	12.50	1	6.25	-	-		
b. The Dominant Land Use								
Agriculture	4	50.00	12	75.00	27	100		
Mixture Land Use	3	37.50	2	12.50	-	-		
Non-Agriculture	1	12.50	2	12.50	-	-		

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	Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
c. The Agriculture Fertility.						
First Class Agriculture Soils	3	37.50	6	37.50	11	40.74
Second Class	4	50.00	6	37.50	15	55.56
Third Class	1	12.50	4	25.00	1	3.70
6. The Existence of Tourist Devt. or Tourism Potential.						
Exist	7	87.50	12	75.00	24	88.89
No Exist	1	12.50	4	25.00	3	11.11
Potential	-	-	-	-	-	-
7. The Household Size.						
Less Than 5 Persons	1	12.50	1	6.25	8	29.63
5 - 10 Persons	5	62.50	10	62.50	15	55.56
More Than 10 Persons	2	25.50	5	31.25	4	14.81
8. The Land Tenure.						
Private	6	75.00	11	68.75	26	96.30
Village	2	25.00	5	31.25	1	3.70
9. Type of Farming Operation and Farming Size.						
a. Farming Operation						
Family Farming	-	-	-	-	-	-
Farming Alone	8	100	10	62.50	22	77.78
Part-time/Using Other Farmer	-	-	6	37.50	5	18.52
b. Farming Size						
Less Than 1 Ha	5	62.50	9	56.25	18	66.67
More Than 1 Ha	1	12.50	5	31.25	5	18.52
No Answer	2	25.00	2	12.50	4	14.81
10. The Level of Income Per Month.						
Less Than US. \$ 20	1	12.50	4	25.00	13	48.15
US. \$ 20 - \$ 100	5	62.50	10	62.50	8	29.63
More Than US. \$ 100	1	12.50	1	6.25	-	-
No Answer	1	12.50	1	6.25	6	22.22

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	Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
11. The Other Activity Beside Farming.						
Tourism	-	-	-	-	-	-
Government Services	-	-	-	-	-	-
Trade	4	12.50	4	25.00	4	14.81
Industry	4	12.50	1	6.25	-	-
No Other	6	75.00	11	68.75	23	85.19
12. The Most Desirable Activity						
Agriculture	7	87.50	11	68.75	19	70.37
Tourism	-	-	-	-	1	3.70
Industry	-	-	1	6.25	-	-
Trade	1	12.50	3	18.75	1	3.70
Government Services	-	-	1	6.25	2	7.43
No Answer	-	-	-	-	4	14.81
13. The Desirability to Transmigrate.						
Agree	-	-	4	25.00	4	14.81
Disagree	8	100	12	75.00	20	74.07
No Answer	-	-	-	-	3	11.11
14. The Village Type of Housing and the Village Land Use Patterns.						
a. Housing Type						
Traditional	2	25.00	10	62.50	25	92.59
Transitional	4	50.00	3	18.75	-	-
Modern	2	25.00	3	18.75	2	7.44
b. Village Land Use Patterns.						
Traditional	5	62.50	16	100	27	100
Mixture	3	37.50	-	-	-	-
Non-Traditional	-	-	-	-	-	-
15. The Lot Property.						
Heritage	6	75.00	13	81.25	20	74.07
Bought	1	12.50	2	12.50	1	3.70
Rent	1	12.50	1	6.25	6	22.22

... continued

	Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
16. The Land Value Changes from 1969 to 1979.						
No Changes	-	-	-	-	-	-
Changes Less Than 2 Times	-	-	4	6.25	7	25.93
Changes from 2 - 5 Times	2	25.00	6	37.50	3	11.11
Changes More Than 5 Times	6	75.00	6	37.50	1	3.70
Does Not Know	-	-	3	18.75	15	55.56

TABLE A.13 : The Village Educated Adult' Personal Information of his background and his village Conditions.

Items	Villages		Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
1. Respondent' Background.								
a. Age								
> 50 Years	-	-	-	-	-	-	-	-
35-50 Years	-	-	-	-	-	-	1	3.70
15-35 Years	8	100	16	100	26	96.30		
b. Sex.								
Male	7	87.50	15	93.75	24	88.89		
Female	1	12.50	1	6.25	3	11.11		
c. Marital Status.								
Married	6	75.00	7	43.50	14	51.85		
Unmarried	2	25.00	9	56.25	13	48.15		
2. As a Villager.								
5 Years	1	12.50	1	6.25	-	-		
5 - 10 Years	-	-	-	-	1	3.70		
10 Years	7	87.50	15	93.75	26	96.30		
3. The Ethnicity.								
Native Balinese	8	100	16	100	27	100		
Non- Native Balinese	-	-	-	-	-	-		
4. The Level of Education.								
Uneducated	-	-	-	-	-	-		
Primary School	3	37.50	2	12.50	8	29.63		
High School	3	37.50	11	68.75	17	62.96		
University	2	25.00	2	12.50	2	7.44		
Other	-	-	1	6.25	-	-		
5. The Agriculture in the Village.								
a. The Role of Agricultural Activity								
Major Activity	2	25.00	9	56.25	23	85.19		
No Major Activity	2	25.00	4	25.00	-	-		
Mixture	4	50.00	3	18.75	4	14.81		
b. The Dominant Land Use								
Agriculture	3	37.50	11	68.75	23	85.19		
Mixture Land Use	3	37.50	1	6.25	4	14.81		
Non- Agriculture	2	25.00	3	18.75	-	-		

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	Strong Impact Villages		Partial Impact Villages		Villages	Isolated Impact Villages	
	Total	Percentage (%)	Total	Perce n	tage (%)	Total	Percentage (%)
c. The Agriculture Fertility.							
First Class Agriculture Soils	3	37.50	8	50.00		12	44.44
Second Class	2	25.00	4	25.00		12	44.44
Third Class	3	37.50	4	25.00		3	11.11
6. The Existence of Tourist Devt. or Tourism Potential.							
Exist	8	100	12	75.00		-	-
Not Exist	-	-	4	25.00		23	85.19
Potential	-	-	-	-		4	14.81
7. The Household Size.							
Less Than 5 Persons	-	-	-	-		3	11.11
5 - 10 Persons	6	75.00	8	50.00		16	59.26
More Than 10 Persons	2	25.00	8	50.00		8	29.63
8. The Land Tenure.							
Private	6	75.00	14	87.50		24	88.89
Village	2	25.00	2	12.50		3	11.11
9. Type of Farming Operation and Farming Size.							
a. Farming Operation							
Family Farming	3	37.50	9	56.25		14	51.85
Farming Alone	5	62.50	6	37.50		9	33.33
Part-time/ Using Other Farmer	-	-	1	6.25		4	14.81
b. Farming Size							
Less Than 1 Ha	6	75.00	12	75.00		18	66.67
More Than 1 Ha	2	25.00	3	18.75		9	33.33
No Answer	-	-	4	6.25		-	-
10. The Level of Income Per Month.							
Less Than US. \$ 20	1	12.50	2	12.50		7	25.93
US. \$ 20 - \$ 100	5	62.50	9	56.25		14	51.85
More Than US. \$ 100	2	25.00	-	-		3	11.11
No Job Yet	-	-	5	31.25		3	11.11

...continued

	Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
11. The Other Activity Beside Farming.						
Tourism	1	12.50	-	-	-	-
Government Services	2	25.00	1	6.25	6	22.22
Trade	2	25.00	7	43.75	8	29.63
Industry	2	25.00	2	12.50	-	-
No Other	1	12.50	6	32.50	13	48.15
12. The Most Desirable Activity						
Agriculture	1.	12.50	2	12.50	19	33.33
Tourism	3	37.50	-	-	2	7.41
Industry	1	12.50	3	18.75	1	3.70
Trade	2	25.00	2	12.50	3	11.11
Government Services	1	12.50	9	56.25	12	44.44
No Answer	-	-	-	-	-	-
13. The Desirability to Transmigrate.						
Agree	1	12.50	4	25.00	2	7.41
Disagree	7	87.50	12	75.00	25	92.59
No Answer	-	-	-	-	-	-
14. The Village type of Housing and the Village Land Use Patterns.						
a. Housing Type						
Traditional	3	37.50	5	31.25	16	59.26
Transitional	-	-	5	31.25	6	22.22
Modern	5	62.50	6	37.50	5	18.52
b. Village Land Use Patterns.						
Traditional	2	25.00	10	62.50	27	100
Mixture	6	75.00	6	37.50	-	-
Non- Traditional	-	-	-	-	-	-
15. The Lot Property.						
Heritage	7	87.50	13	81.25	24	88.89
Bought	-	-	2	12.50	-	-
Rent	1	12.50	1	6.25	3	11.11

...continued

	Strong Impact Villages		Partial Impact Villages		Isolated Impact Villages	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
16. The Land Value Changes from 1969 to 1979						
No Changes	-	-	2	12.50	7	25.93
Changes Less Than 2 Times	-	-	-	-	4	14.81
Changes from 2 - 5 Times	1	12.50	4	25.00	5	18.52
Changes More Than 5 Times	6	75.00	8	50.00	4	14.81
Does Not Know	1	12.50	2	12.50	7	25.93

TABLE. A.14: CLASSIFICATION OF THE VILLAGES SAMPLE
INTO THREE ZONES OF TOURISM IMPACT .

I. The strong impact villages:

1.	Village of Dangin Puri,	village number:	1.3
2.	" " Sumerta , "	"	: 1.4
3.	" " Pemecutan , "	"	: 2.4
4.	" " Dauh Puri , "	"	: 2.5
5.	" " Sanur , "	"	: 3.1
6.	" " Kuta , "	"	: 4.4
7.	" " Tuban , "	"	: 4.5
8.	" " Benoa/Bualu, "	"	: 4.9

II. The Partial impact Villages:

1.	Village of Penatih ,	village number :	1.1
2.	" " Tonja , "	"	: 1.2
3.	" " Kesiman , "	"	: 1.5
4.	" " Ubung , "	"	: 2.2
5.	" " Padangsembian, "	"	: 2.3
6.	" " Renon , "	"	: 3.2
7.	" " Panjer , "	"	: 3.3
8.	" " Sesetan , "	"	: 3.4
9.	" " Pedungan , "	"	: 3.5
10.	" " Serangan , "	"	: 3.6
11.	" " Jimbaran , "	"	: 4.6
12.	" " Pecatu , "	"	: 4.7
13.	" " Mengwi , "	"	: 5.3
14.	" " Sempidi , "	"	: 5.5
15.	" " Kapal , "	"	: 5.6
16.	" " Sangeh , "	"	: 6.1

III. The Isolated villages :

1.	Village of Peguyangan ,	Village number :	2.1
2.	" " Dalung , "	"	: 4.1
3.	" " Canggu , "	"	: 4.2
4.	" " Krobokan , "	"	: 4.3
5.	" " Ungasan , "	"	: 4.8
6.	" " Sembung , "	"	: 5.1
7.	" " Baha , "	"	: 5.2
8.	" " Penarungan , "	"	: 5.4
9.	" " Mengwi Tani , "	"	: 5.7
10.	" " Buduk , "	"	: 5.8
11.	" " Munggu , "	"	: 5.9
12.	" " Taman , "	"	: 6.2
13.	" " Bongkasa , "	"	: 6.3
14.	" " Ayunan , "	"	: 6.4
15.	" " Blahkiuh , "	"	: 6.5
16.	" " Abian Semal , "	"	: 6.6
17.	" " Mambal , "	"	: 6.7
18.	" " Sedang , "	"	: 6.8
19.	" " Angantaka , "	"	: 6.9
20.	" " Jagapati , "	"	: 6.10
21.	" " Sibangkaja , "	"	: 6.11
22.	" " Sibanggede , "	"	: 6.12
23.	" " Darmasaba , "	"	: 6.13
24.	" " Belok , "	"	: 7.1
25.	" " Pelaga , "	"	: 7.2
26.	" " Petang , "	"	: 7.3
27.	" " Carangsari , "	"	: 7.4

TABLE A.15 : The villagers' perception of the traditional culture value, the existence of the village land use changes, and the existence of tourism development impact, in the strong impact villages.

Items (X ₁)	Traditional Village leaders					Farmers					Educated Adults				
	-1	0	1	Total	Weighting	-1	0	1	Total	Weighting	-1	0	1	Total	Weighting
1 (17)*	2	-	6	4	0.500	5	3	-	-5	-0.625	4	2	2	-2	-0.250
2 (18)	6	-	2	-4	-0.500	-	1	7	7	0.875	4	-	4	0	0.000
3 (19)	6	-	2	-4	-0.500	1	-	7	6	0.750	2	-	6	4	0.500
4 (20)	7	-	1	-6	-0.750	2	1	5	3	0.375	4	4	3	-1	-0.125
5 (21)	-	-	8	8	1.000	-	1	7	7	0.875	-	6	8	8	1.000
6 (22)	-	-	8	8	1.000	-	1	7	7	0.875	-	1	7	7	0.875
7 (23)	-	1	7	7	0.875	2	4	2	0	0.000	2	3	3	1	0.125
8 (24)	-	-	8	8	1.000	-	3	5	5	0.625	-	2	6	6	0.750
9 (25)	1	2	5	4	0.500	1	3	4	3	0.375	1	2	5	4	0.500
10 (26)	1	1	6	5	0.625	1	3	4	3	0.375	-	2	6	6	0.750
11 (27)	1	-	7	6	0.750	4	1	3	-1	-0.125	3	4	5	2	0.250
12 (28)	-	-	8	8	1.000	1	-	7	6	0.750	1	-	7	6	0.750
13 (29)	4	1	3	-1	-0.125	3	-	5	2	0.250	2	-	6	4	0.500
14 (30)	4	2	2	-2	-0.250	4	4	-	-4	-0.500	5	2	1	-4	-0.500
15 (31)	1	3	4	3	0.375	-	1	7	7	0.875	-	-	8	8	1.000
16 (32)	4	1	3	-1	-0.125	8	-	-	-8	-1.000	7	-	1	-6	-0.750
17 (33)	-	4	4	4	0.500	-	7	1	1	0.125	1	5	2	1	0.125

The value is judged based on the following answer :

yes, don't know and no.

Assignment of a positive or negative score depends on whether the specific question supports the existence of traditional values, or the existence of tourism development impact in the investigated village.

() * The original number of the first round questionnaire.

1 : Strong indication of the existence.

0 : No value.

-1 : Weak indication of the existence.

TABLE A.16 : The villagers' perception of the traditional culture value, the existence of the village land-use changes, and the existence of tourism development impact, in the partial impact villages.

Items (X ₁)	Traditional village leaders					Farmers					Educated Adults				
	-1	0	1	Total	Weighting	-1	0	1	Total	Weighting	-1	0	1	Total	Weighting
1 (17) *	1	-	15	14	0.875	8	4	4	-4	-0.250	9	4	3	-6	-0.375
2 (18)	-	1	15	15	0.938	1	1	14	13	0.813	1	-	15	14	0.875
3 (19)	5	-	11	6	0.375	3	1	12	9	0.563	7	-	9	2	0.125
4 (20)	11	1	4	-7	-0.438	10	1	5	-5	-0.313	10	5	1	-9	-0.563
5 (21)	-	-	16	16	1.000	-	2	14	14	0.875	-	1	15	15	0.938
6 (22)	-	-	16	16	1.000	-	1	15	15	0.938	-	1	15	15	0.938
7 (23)	1	5	10	9	0.563	3	6	7	4	0.250	-5	4	7	2	0.125
8 (24)	-	1	15	15	0.938	-	3	13	13	0.813	-	4	12	12	0.750
9 (25)	5	4	7	2	0.125	7	4	5	-2	-0.125	6	5	5	-1	-0.063
10 (26)	2	3	11	9	0.563	1	5	10	9	0.563	2	6	8	6	0.375
11 (27)	5	3	8	3	0.188	5	5	6	1	0.063	4	3	9	5	0.313
12 (28)	6	3	7	1	0.063	5	1	10	5	0.313	3	2	11	8	0.500
13 (29)	9	3	4	-5	-0.313	5	2	9	4	0.250	5	1	10	5	0.313
14 (30)	9	3	4	-5	-0.313	8	6	2	-6	-0.375	7	5	4	-3	-0.188
15 (31)	4	4	8	4	0.250	1	2	13	12	0.750	-	2	14	14	0.875
16 (32)	8	-	8	0	0.000	14	1	1	-13	-0.813	15	-	1	-14	-0.875
17 (33)	4	7	5	1	0.063	-	16	-	0	0.000	-	14	2	2	0.125

The value is judged based on the following answer :

yes, don't know and no.

Assignment of a positive or negative score depends on whether the specific question supports the existence of traditional values, or the existence of tourism development impact in the investigated village.

() * The original number of the first round questionnaire.

1 : Strong indication of the existence

0 : No value

-1 : Weak indication of the existence

TABLE A.17 : The villagers' perception of the traditional culture value, the existence of the village land-use changes, and the existence of the tourism development impact, in the isolated villages.

Items (X ₁)	Traditional Village leaders					Farmers					Educated Adults				
	-1	0	1	Total	Weighting	-1	0	1	Total	Weighting	-1	0	1	Total	Weighting
1 (17)*	5	-	22	17	0.630	13	4	10	-3	-0.111	14	6	7	-7	-0.259
2 (18)	1	1	25	24	0.889	-	3	24	24	0.889	1	-	26	25	0.926
3 (19)	2	1	24	22	0.815	-	-	27	27	1.000	2	-	25	23	0.852
4 (20)	15	-	12	-3	-0.111	13	-	14	1	0.037	12	3	12	0	0.000
5 (21)	-	-	27	27	1.000	-	1	26	26	0.963	-	3	24	24	0.889
6 (22)	-	1	26	26	0.963	-	3	24	24	0.889	-	4	23	23	0.852
7 (23)	-	10	17	17	0.630	8	16	3	-5	-0.185	10	13	4	-6	-0.222
8 (24)	1	8	18	17	0.630	-	15	12	12	0.444	-	8	19	19	0.704
9 (25)	12	5	10	-2	-0.074	16	7	4	-12	-0.444	15	9	3	-12	-0.444
10 (26)	1	17	9	8	0.296	1	18	8	7	0.259	2	9	16	14	0.519
11 (27)	7	13	7	0	0.000	17	1	9	-8	-0.296	14	-	13	-1	-0.037
12 (28)	13	10	4	9	-0.333	11	5	11	0	0.000	13	5	9	-4	-0.148
13 (29)	12	14	1	-11	-0.407	17	5	5	-12	-0.444	21	-	6	-15	-0.556
14 (30)	10	15	2	-8	-0.296	9	17	1	-8	-0.296	15	10	2	-13	-0.481
15 (31)	4	19	4	0	0.000	-	5	22	22	0.815	-	6	21	21	0.778
16 (32)	24	3	-	-24	-0.889	26	-	1	-25	-0.926	26	1	-	-26	-0.963
17 (33)	-	19	8	8	0.296	-	27	-	0	0.000	1	25	1	0	0.000

The value is judged based on the following answer :

yes, don't know and no.

Assignment of a positive or negative score depends on whether the specific question supports the existence of traditional values, or the existence of tourism development impact in the investigated village.

() * The original number of the first round questionnaire.

1 : Strong indication of the existence

0 : No value

-1 : Weak indication of the existence

TABLE A.18 : The Villagers' Evaluation of the Impact of Tourism
Development and Future Development Policy, in the
Strong Impact Villages

Items (X _j)	Traditional Village Leaders							Farmers							Educated Adults						
	-2	-1	0	1	2	Total	Weighting	-2	-1	0	1	2	Total	Weighting	-2	-1	0	1	2	Total	Weighting
1	-	-	-	1	7	15	0.938	-	-	-	2	6	14	0.875	-	-	-	1	7	15	0.938
2	6	2	-	-	-	-14	-0.875	4	4	-	-	-	-12	-0.750	4	3	-	1	-	-10	-0.625
3	1	-	-	6	1	7	0.438	-	-	1	7	-	7	0.438	-	-	1	6	1	8	0.500
4	1	1	-	5	1	4	0.250	-	-	1	5	2	9	0.563	-	1	1	5	1	6	0.375
5	-	-	-	4	4	12	0.750	-	-	-	4	4	12	0.750	-	-	1	6	1	8	0.500
6	-	-	-	4	4	12	0.750	-	-	-	3	5	13	0.813	-	-	1	3	4	11	0.688
7	-	-	1	5	2	9	0.563	-	-	2	3	3	9	0.563	-	-	1	4	3	10	0.625
8	-	1	-	3	4	10	0.625	-	3	1	2	2	3	0.188	-	1	-	5	2	8	0.500
9	-	-	-	-	8	16	1.000	-	-	-	4	4	12	0.750	-	-	-	5	3	11	0.688
10	-	-	-	4	4	12	0.750	-	-	1	5	2	9	0.563	-	-	1	5	2	9	0.563
11	-	-	-	2	6	14	0.875	-	-	-	6	2	10	0.625	-	-	-	4	4	12	0.750
12	-	-	-	7	1	9	0.563	-	-	3	5	-	5	0.313	-	-	2	4	2	8	0.500
13	-	2	-	5	1	5	0.313	-	2	2	2	2	4	0.250	-	4	1	2	1	0	0.000
14	-	2	-	5	1	5	0.313	-	1	3	4	-	3	0.188	1	3	1	2	1	-1	-0.063
15	-	-	-	1	7	15	0.938	-	-	-	4	4	12	0.750	-	-	-	4	4	12	0.750
16	-	-	-	2	6	14	0.875	-	-	1	6	1	8	0.500	-	-	-	7	1	9	0.563
17	-	-	-	7	1	9	0.563	-	-	3	4	1	6	0.375	-	-	2	5	1	7	0.438

The value is judged based on the following answer :

Strongly agree

Agree

Don't Know

Disagree

Strongly disagree

2 : Strong indication of support for traditional values.

1 : Moderate indication of support for traditional values.

0 : No value

-1 : Less indication of support for traditional values.

-2 : The least indication of support for traditional values.

A positive or negative score is assigned based on whether the specific statement either supports or maintenance of traditional values.

Weighting values indicate the degree of the evaluation.

TABLE A.19 : The Villagers' Evaluation on the Impact of Tourism Development and Future Development Policy, in the Partial Impact Villages.

Items (X_j)	Traditional Village Leaders							Farmers							Educated Adults						
	-2	-1	0	1	2	Total	Weighting	-2	-1	0	1	2	Total	Weighting	-2	-1	0	1	2	Total	Weighting
1	-	-	-	7	9	25	0.781	-	-	-	9	7	23	0.719	-	-	1	2	13	28	0.875
2	9	6	-	1	-	-23	-0.719	5	9	-	2	-	-17	-0.531	7	7	1	1	-	-20	-0.625
3	1	2	-	12	1	10	0.313	-	3	1	12	-	9	0.281	2	2	2	9	1	5	0.156
4	-	4	-	11	1	9	0.281	-	3	-	12	1	11	0.344	-	4	3	8	1	6	0.188
5	-	-	1	8	7	22	0.688	-	-	2	7	7	21	0.656	-	-	3	6	7	20	0.625
6	-	-	-	7	9	25	0.781	-	-	1	7	8	23	0.719	-	-	2	11	3	17	0.531
7	-	-	4	6	6	18	0.563	-	-	2	9	5	19	0.594	-	-	6	10	-	10	0.313
8	-	2	-	10	4	16	0.500	-	3	3	7	3	10	0.313	-	-	3	8	5	18	0.563
9	-	-	-	4	12	28	0.875	-	-	-	9	7	23	0.719	-	-	1	7	8	23	0.719
10	-	-	1	10	5	20	0.625	-	-	3	11	2	15	0.469	-	-	2	10	4	18	0.563
11	-	-	-	9	7	23	0.719	-	-	3	8	5	18	0.563	-	-	3	8	5	18	0.563
12	-	-	1	13	2	17	0.531	-	-	5	10	1	12	0.375	-	-	3	9	4	17	0.531
13	-	3	1	10	2	11	0.344	-	4	4	5	3	7	0.219	-	4	4	8	-	4	0.125
14	-	6	1	9	-	3	0.093	-	4	2	9	1	7	0.219	1	5	3	6	1	1	0.031
15	-	-	1	6	9	24	0.750	-	-	1	5	10	25	0.781	-	-	5	6	5	16	0.500
16	-	-	-	9	7	23	0.719	-	-	3	5	8	21	0.656	-	-	2	6	8	22	0.688
17	-	-	2	11	3	17	0.531	-	-	6	7	3	13	0.406	-	-	6	7	3	13	0.406

The value is judged based on the following answer :

Strongly agree
Agree
Don't know
Disagree
Strongly disagree.

A positive or negative score is assigned based on whether the specific statement either supports or maintenance of traditional values.

Weighting values indicate the degree of the evaluation.

2 : Strong indication of support for traditional values.

1 : Moderate indication of support for traditional values.

0 : No value.

-1 : Less indication of support for traditional values.

-2 : The least indication of support for traditional values.

TABLE A.20: The villagers' Evaluation on the Impact of Tourism Development and Future Development Policy, in Isolated Villages.

Items (X_j)	Traditional Village Leaders							Farmers							Educated Adults						
	-2	-1	0	1	2	Total	Weighting	-2	-1	0	1	2	Total	Weighting	-2	-1	0	1	2	Total	Weighting
1	-	-	-	13	14	41	0.759	-	-	-	11	16	43	0.796	-	-	2	8	17	42	0.778
2	8	16	2	1	-	-31	-0.574	9	15	3	-	-	-33	-0.611	13	11	2	1	-	-36	-0.667
3	4	11	3	9	-	-10	-0.185	3	8	2	14	-	0	0.000	3	9	3	12	-	-3	-0.056
4	-	5	1	21	-	16	0.296	-	4	2	20	1	18	0.333	1	7	4	15	-	6	0.111
5	-	-	-	14	13	40	0.741	-	-	2	12	13	28	0.704	-	-	4	12	11	34	0.630
6	-	-	2	16	9	34	0.630	-	-	-	13	14	41	0.759	-	-	5	11	11	33	0.611
7	-	-	2	17	8	33	0.611	-	-	3	14	10	34	0.630	-	-	6	13	8	29	0.537
8	-	-	6	10	11	32	0.593	-	-	4	18	5	28	0.519	-	-	7	17	3	23	0.426
9	-	-	1	16	10	36	0.667	-	-	1	13	13	39	0.722	-	-	3	13	11	35	0.648
10	-	-	3	15	9	33	0.611	-	-	4	11	12	35	0.648	-	-	8	11	8	27	0.500
11	-	-	7	8	12	32	0.593	-	1	5	11	10	30	0.556	-	1	6	8	12	31	0.574
12	-	-	3	20	4	28	0.519	-	-	3	16	8	32	0.593	-	1	5	12	9	29	0.537
13	-	13	1	11	2	2	0.037	-	12	3	8	4	4	0.074	-	11	5	8	3	3	0.056
14	-	15	1	11	-	-4	-0.074	-	15	3	8	1	-5	-0.093	1	15	5	6	-	-11	-0.204
15	-	-	1	11	15	41	0.759	-	-	3	13	11	38	0.648	-	-	3	15	9	33	0.611
16	-	-	1	17	9	35	0.648	-	-	3	12	12	36	0.667	-	-	5	10	12	34	0.630
17	-	-	6	16	5	26	0.481	-	-	10	6	11	28	0.519	-	-	13	8	6	20	0.370

The value is judged based on the following answer:

- Strongly agree
- Agree
- Don't know
- Disagree
- Strongly disagree.

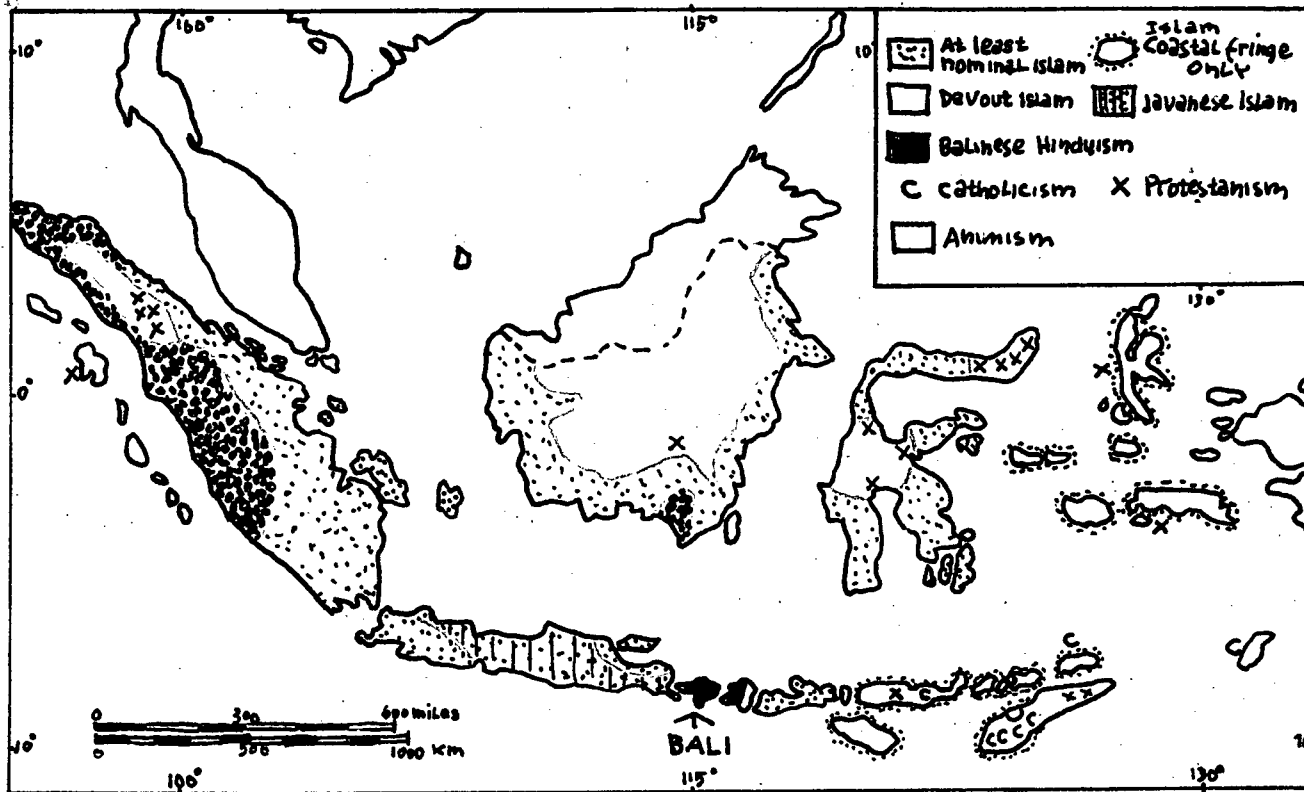
A positive or negative score is assigned based on whether the specific statement either supports or maintenance of traditional values.

Weighting values indicate the degree of the evaluation.

- 2 : Strong indication of support for traditional values.
- 1 : Moderate indication of support for traditional values.
- 0 : No value.
- 1 : Less indication of support for traditional values.
- 2 : The least indication of support for traditional values.

APPENDIX B. MAP B.1 SHOWING DISTRIBUTION OF RELIGIONS
IN INDONESIA

MAP.B.1: INDONESIA , RELIGIONS.



Sources: Fisher 1966, G. J. Missin, p. 128 . 1972 .

APPENDIX C : QUESTIONNAIRES

C.1 First Round Questionnaire

C.2 Second Round Questionnaire

APPENDIX C.1 : FIRST ROUND QUESTIONNAIRE*

THE VILLAGERS' PERSONAL INFORMATION AND
THEIR PERCEPTION OF THE EXISTENCE OF THE
TRADITIONAL CULTURE VALUES, OF TRADITION-
AL VILLAGE LAND USE CHANGES, AND OF TOURISM
DEVELOPMENT IN THE VILLAGE.

Name of the village.....

Sub-District.....

Regency of Badung, Province of Bali.

Name of interviewer.....

Date..... Year Time

* Translated from the Indonesian
original, which is on file at the
University of British Columbia
School of Community and Regional
Planning.

1. THE QUESTIONNAIRE FOR INTERVIEWING HEADS OF TRADITIONAL VILLAGES.

We are interested in your knowledge and opinions about conditions in your village: its people, its culture, its activities; and especially about the issues and opinions concerning developmental policy related to tourism; its impacts on agricultural land use, and its effects on the Balinese traditional village settlement patterns, religion and culture, before and after massive tourist development started in 1969.

All the information you give us is expected to be open and true, and it will be completely confidential and used only for the purpose of this planning study.

Instructions :

Fill in and or choose an answer, and give the required information.

A. General information about yourself and your village

1. What is the name of your village?.....
- Where is it located?.....
- Distance from Denpasar..... from Sanur.....
- and from Kuta.....
- District of.....
- Village size.....

How old are you now?.....

Sex : a. Male

b. Female

Marital status : a. Married b. Unmarried c. Divorced

2. How long have you functioned as a traditional village leader? (Please circle one).

a. less than 1 year

b. 1 - 5 years

c. 5 - 10 years

d. 10 - 15 years

e. more than 15 years.

Do you function also as an official village leader?

a. Yes b. No If yes, since when?.....

3. Are you a native villager or an immigrant?

a. Native b. Immigrant

How long have you lived in this village?

a. less than 1 year

b. 1 - 5 years

c. 5 - 10 years

d. 10 - 15 years

e. more than 15 years.

4a. What kind of educational level did you have?

a. Never attended school

b. Primary school

c. Junior High school

d. Senior High school

- e. Technical Secondary school
- f. Academy
- g. University
- h. Vocational training

4b. Please describe the general educational level of the villagers. (If possible use percentages as well as actual numbers).

- a. Never attended schoolpersons.....%
- b. Primary school..... "%
- c. Junior High school..... "%
- d. Senior High school..... "%
- e. Technical school..... "%
- f. Academy..... "%
- g. University..... "%
- h. Vocational training..... "%
- i. Other..... "%

5. Is agriculture the major activity in your village?

- a. yes b. no

If yes, please indicate the type of activity:

- a. Rice farming
- b. other crops
- c. Fishing
- d. Livestock : Poultry, cattle.

If no, what kind of activities do exist?

Please select from this list :

- a. Trading : vegetables, rice, handicrafts, etc.
- b. Government/military services

- c. Weaving
- d. Curving
- e. Painting
- f. Industrial activity

6. Is there any tourist activity or other associated activity in your village?

- a. Yes b. No c. Don't know.

If yes, what kind of tourist activities are there in your village? (Please circle from this list).

- a. Hotel
- b. Restaurant
- c. Travel bureau
- d. Taxi, motor cycle, bike rental, canoe rental
- e. Art shop
- f. Cultural attraction
- g. Carving
- h. Painting
- i. Ceramics
- j. Other? Please describe.....

7. What kind of land use generally can one find in your village in 1979?

If possible, please give area in Ha or as percentages of total area.

- | | | |
|------------------------------|----------|---|
| a. Rice fields..... | Ha | % |
| b. Grassland..... | " | % |
| c. Dry land agriculture..... | " | % |
| d. Other..... | " | % |

- b. Housing..... Ha%
- c. School area..... "%
- d. Commercial area..... "%
- e. Industrial area..... "%
- f. Tourist facilities:
- Hotels..... "%
- Restaurants..... "%
- Art centres..... "%
- Recreational places... "%
- Artshops..... "%
- g. Religious facilities :
- Hindu temples..... "%
- Mosques..... "%
- Churches..... "%
- h. Other..... "%

8. Do you have any idea about the situation in and/or before 1969?

a. Yes b. No

If yes, can you indicate the classification of soil fertility? a. First class b. Second class c. Third Class

Do you think the agricultural land in your village is very productive?

a. very good b. good enough c. bad d. not suitable for agriculture.

What is the productivity of each type of agricultural activity that exists in your village?

- a. Wet land rice field.....ton/ha
- b. Dry land rice field..... "
- c. Other food crops:
 - maize..... "
 - cassava..... "
- d. Cash crop and fruits :
 - Coffee..... "
 - Orange..... "
 - Coconut..... "
 - Other..... "

9. Are there any livestock and fishing activities in your villages?

a. Yes b. No.

If yes, please indicate productivity :

Livestock :

Chicken.....

Cattle.....

Ducks.....

Pigs.....

Fishery :

Fresh water fish.....

Sea fish.....

10a. What is the total population of your village?

(Please circle one)

- a. 0 - 1,000 inhabitants
- b. 1,001 - 2,000 "
- c. 2,001 - 3,000 "
- d. 3,001 - 4,000 "
- e. 4,001 - 5,000 "
- f. 5,001 - 6,000 "
- g. 6,001 - 7,000 "
- h. 7,001 - 8,000 "
- i. 8,001 - 9,000 "
- j. 9,001 - 10,000 "
- k. more than 10,000 "

10b. Please give its age structure?

- a. 0 - 4 years persons
- b. 5 - 9 " "
- c. 10 - 14 " "
- d. 15 - 19 " "
- e. 20 - 24 " "
- f. 25 - 29 " "
- g. 30 - 34 " "
- h. 35 - 39 " "
- i. 40 - 44 " "
- j. 45 - 49 " "
- k. 50 - 54 " "
- l. over 55 " "

11. Please describe the distribution of the economic sectors that exist in your village: (If possible, please indicate its distribution and/or its percentage).

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a. Agriculture :

- Wet land rice-fields farming.....persons.....%
- Dry land rice-fields farming..... "%
- Cash crops farming..... "%
- Livestock farming..... "%
- Fishery..... "%

b. Tourism activities :

- hotel.....persons.....%
- Restaurant..... "%
- Carving..... "%
- Artshop retailing..... "%
- Tourist guide..... "%
- Travel bureau..... "%

c. Trade and Industry :

- Trading.....persons.....%
- Retailer/shopkeeper..... "%
- Textile Industry labour..... "%
- Lime stone industry labour... "%
- Brick industry labour..... "%
- Other..... "%

d. Services (Government, Military, Private enterprises):

- Government.....persons.....%

- Teaching.....persons.....%
- Private enterprise
 (bank etc.)..... "%
- Military..... "%

12. Please state the lowest and highest income per month in your village (if possible also give percentage of each)

- a. Less than Rp. 10.000 per month.....% (Equal to US \$20)
- b. Rp. 10.000 - Rp. 15.000 "%
- c. Rp. 15.000 - Rp. 30.000 "%
- d. Rp. 30.000 - Rp. 50.000 "%
- e. Rp. 50.000 - Rp.100.000 "%
- f. More than Rp.100.000 "%

13. What is the dominant ethnic group in your village?

- a. Native Balinese.....%
- b. Mixture Balinese.....%
- c. Emigrants :
 - Javanese.....%
 - Sundanese.....%
 - Padangnese.....%
 - Chinese.....%
- d. Foreigners.....%

14. Do you live in a modern or a traditional house?

- a. Modern b. Traditional c. Transitional

Does your village still have the traditional village settlement patterns?

- a. Yes b. No

If no, can you explain why not?.....

15a. Do you own your lot?

a. Yes b. No

If yes, how large is your parcel?

Did you buy it?

a. Yes b. No

If yes, when?

If no, is it a heritage land?

15b. What is the system of general land tenure in your village?

a. Government/village property

b. Private property

16. What is the current value of land in your village?

How much has the price changed since 1969?

B. THE PERCEPTION OF THE HEAD OF THE TRADITIONAL VILLAGE

17. Did you ever discuss improvement or the development of your village?

a. Yes b. No. c. Never thought about it

If yes :

a. What was discussed?.....

b. When?.....

c. Where?.....

d. What were the results?.....

e. What actions were taken?.....

f. Can the plans be implemented?

1. Yes 2. No

If no, why not?.....

18. In general, how do you feel about your village environment?

Would you say that it is : (Circle one)

- a. An excellent living place.
- b. A fairly good living place
- c. A poor place to live
- d. A very bad place to live
- e. Other opinion.....

Please explain your choice.....

18a. Based on your experience, what do you consider to be serious problems in your village?

(Please select from the list below)

- a. Insufficient agricultural land
- b. Insufficient land for settlement
- c. Insufficient water supply
- d. Water pollution
- e. Air pollution
- f. Noise problem
- g. Insufficient job opportunities
- h. Limited village land
- i. Inadequate village infrastructure and social facilities.
- j. The decline of Balinese cultural values
- k. Other

19. From the list below, please indicate the most suitable development for your village?

- a. To maintain and to intensify the agricultural land

Is there still any possibility of doing this?....

b. To develop and to extend the agricultural area

Is there still enough land to be developed?...

c. To develop the tourist activities

What kind of tourist activities are they?.....

d. To develop trade and or industry

What kind of trade and industrial activities are they?.....

e. Other

Can you explain your choice?.....

19a. Do you think that your choice is the same as other villagers would make?

a. Yes b. No c. Don't know

If yes, are they a,b,c,d, or e (in 19 above)

If no, what do the villagers need?.....

20. Do you think most villagers get enough subsistence from agricultural activities?

a. Yes b. No c. Don't know

If yes, how?.....

If no, why?.....

21. Do you think there are strong relationships between agricultural activity, Bali Hindu religion, Balinese traditional village settlement patterns and Balinese culture?

a. Yes b. No c. Don't know

If yes, are the relationships still strongly manifested in the traditional village settlement patterns?

a. Yes b. No c. Don't know

If no, why?.....

22. Do you think that those relationships cannot be separated and are something that should be preserved?
- a. Yes b. No c. Don't know
- If yes, why?.....
- If no, why?.....
23. Related to those relationships please comment on the effects of distortion of the traditional irrigation system (Subak) and the traditional village settlement patterns, and resultant changes of agricultural land use, and vice versa?
- a. Becoming serious problems
- b. Does not matter
- c. Don't know
- If the answer is a. please explain why?.....
- If the answer is b. please explain why?.....
24. Do you think that the Balinese culture is not only a major potential for tourist attractions, but also a foundation of Balinese life?
- a. Yes b. No c. Don't know.
25. Do you think that traditional irrigation systems have been strongly affected by the changing or the declining of agricultural land?
- a. Yes b. No c. Don't know
- If yes, when?
- a. Before 1969
- b. In 1969
- c. Around 1974
- d. Around 1976
- e. Around 1979

Please explain why; -- is it a result of:

- a. Hotel, restaurant, artshop, or other associated development?
- b. Housing, school, health, or other village development?
- c. Urban expansion?

26. Do you think tourism development has improved or weakened the Balinese culture?

- a. Improved
- b. Weakened
- c. Don't know

If it has improved, how?.....

If it has weakened, how?.....

27 Do you think most villagers benefit from tourism development

- a. Yes b. No c. Don't know

If yes, how?.....

If no, why?.....

28. If tourism development exists in your village does it use farming land?

- a. Yes b. No c. Don't know

If yes, can you give an estimate?..... Ha

and since when:

- a. Before 1969
- b. In 1969
- c. Between 1972 - 1975
- d. Between 1975 - 1978
- e. In 1979

If no, what type of land has been used?

- a. Village land b. Grass land c. Estate d. Other

29. Do you think that tourist development has directly used the agricultural land and pushed the agricultural land use into non-agricultural use?

a. Yes b. No c. Don't know

If no, is the loss of agricultural land caused by:

- a. Widened street
- b. Developing modern housing
- c. Hotel development
- d. Artshop development
- e. Restaurant development
- f. Other development

Do you think that all of these changes also affect the traditional village settlement patterns?

a. Yes b. No

30. Do you think villagers have suffered negative effects from tourism development?

a. Yes b. No c. Don't know

If yes, explain why.....

If no, explain why.....

31. Do you think that uncontrolled changes of agricultural land use and traditional village settlement patterns by the loss of agricultural land affected by the tourist development will have dramatic effects on Balinese socio-economic structure; culture and environment?

a. Yes b. No c. Don't know

If yes, will its influence be strong on the following?

(please select)

- a. The continuous decline of agricultural land
(especially the first class agricultural land),
- b. Disorganized and uncontrolled traditional irrigation
systems due to the loss of agricultural land.
- c. Decline in the productivity of agricultural land.
- d. The changing of villager socio-economic structures.
- e. The changing of Balinese traditional village
settlement patterns.
- f. The decline of attraction for tourists.

If not, please explain why and what are these effects?..

.....

32. Have you ever discussed in your village the changes or possible impacts that could be caused by tourism development on agricultural land use, traditional village settlement patterns, and consequently Balinese culture?

a. Yes b. No c. Don't know

If yes, please explain, is it because of:

- a. Urban expansion
- b. Housing development
- c. Health centre development
- d. Market centre development
- e. School development
- f. Other development

Please indicate where?.....

When?.....

What was the conclusion?.....

Was there any action?.....

33. Do you have any other opinion about the impact of tourism development on your village?

a. Yes b. No c. Don't know

If yes, what is it?.....

Or do you have other comments on tourism development in Bali in general?.....

We appreciate the time you have taken to respond to this questionnaire, and thank you for your cooperation.

11. THE QUESTIONNAIRE FOR INTERVIEWING THE VILLAGE FARMER

We are interested in learning your opinion and gathering some general information from you, as a farmer, about your village and about changes to agricultural land use and village settlement patterns affected by the tourism development. This is related to the socio-economic structure and Balinese traditional culture.

All the information you give us is expected to be open and true, and it will be completely confidential and used for the purpose of the planning study only.

Instructions:

Fill in and or choose an answer, and give the required information

A. General information about yourself and your village

1. How old are you now?.....

Sex: a. Male b. Female

Marital Status: a. Married b. Unmarried c. Divorced

How many children do you have?.....

What is the name of your village?.....

2. How long have you been staying in this village?

(Please circle one)

a. less than 1 year

b. 1 - 5 years

c. 5 - 10 "

d. 10 - 15 years

e. more than 15 years

3. Are you a native villager?

a. Yes b. No

If no, what is your ethnic origin?

a. Javanese b. Sundanese c. Chinese d. Other (Please specify)

4. What kind of education do you have?

a. Never attended school

b. Primary school: 1,2,3,4,5,6 (select one)

c. Junior High School : 1,2,3

d. Senior High School : 1,2,3

e. Technical Secondary school : 1,2,3

f. Academy : 1,2,3

g. University : 1,2,3,4,5

h. Vocational training

5. Is agriculture the major activity in your village?

a. Yes b. No

If yes, is it :

a. Predominant

b. Proportionate with other land use

c. Only on limited land

d. Does not mean anything

What class of agricultural land is in your village?

a. First class b. Second class c. Third class

What potential do you think your land has for agricultural activities?

a. Very good b. Good c. Bad

What type of agricultural activity do you engage in?

a. Wet land rice fields

b. Dry land rice fields

c. Cash crops farming

d. Fishing

e. Livestock farming: chickens, cows, water buffalo, pigs, ducks etc.

f. Other

g. No other activity.

6. Are there any tourist activities or any other associated activities that are affected by tourism development in your village?

a. Yes b. No c. Don't know

If yes, what type of tourist activities are there in your village? (please circle on this list)

a. Hotel

b. Restaurant

c. Travel bureau

d. Taxi, motor cycle, bike, canoe rental

e. Artshop

f. Cultural attraction

g. Carving

h. Painting

i. Ceramics

j. Other? Please describe.....

7. How many people are there in your house?.....

Please give the age structure.

a. 0 - 4 years.....persons

b. 5 - 9 " "

c. 10 - 14 " "

d. 15 - 19 " "

e. 20 - 24 " "

f. 25 - 29 " "

g. 30 - 34 " "

h. 35 - 39 " "

i. 40 - 44 " "

j. 45 - 49 " "

k. 50 - 54 " "

l. 55 - 59 " "

m. over 59 " "

8. Do you own the agricultural land you farm?

a. Yes b. No

If yes, since when do you own it?

a. less than 1 year

b. 1 - 5 years

c. 5 - 10 "

d. 10 - 15 "

e. more than 15 years

If no, do you rent it or are you only an employee?

If you rent it, how much is the rental?

How long have you rented it?

- a. Less than 1 year
- b. 1 - 5 years
- c. 5 - 10 "
- d. 10 - 15 "
- e. more than 15 years

9. If you farm do you farm by yourself or with other farmers?

- a. Alone b. With other farmers

10. If you farm with other farmers, how many farmers are they?...

What is your average income from farming per month or per year?.....

11a. If you farm as well as trade do you own your shop?

- a. Yes b. No

If yes, since when?.....

What is your average income from trading in a month or in a year?.....

If you do not own the shop, who owns it?.....

Since when?.....

Where is your shop located?..

- a. in the village b. out of village

If its location is out of the village, where is it?.....

11b. If you do farming beside working in a hotel or restaurant do you own the hotel/restaurant?

- a. Yes b. No

If yes, since when?.....

What is your average income per month or per year?.....

If not, who owns it?.....

How long have you worked there?.....

What is your average income per month or per year?.....

Where is the hotel/restaurant located?

a. In the village b. out of the village

If it is located out of the village where is it?.....

11c. If you farm beside working in an artshop, do you
own the artshop?

a. Yes b. No

If yes, since when?.....

What is your average income per month or per year?.....

If no, who owns the artshop?.....

How long have you worked there?.....

Where is the artshop located?

a. In the village b. Out of the village

11d. If you do farm beside work in an industry do you own
the industry?

a. Yes b. No

If yes, since when?.....

What is your average income per month or per year?.....

If no, who owns the industry?.....

How long have you worked there?.....

Where is the industry located?

a. In the village b. Out of the village

12. If you were able to select a job, what kind of job would you most prefer to do?
- a. Farming
 - b. Tourist services
 - c. Industry
 - d. Military
 - e. Civil servant
 - f. Trade
 - g. Fishing
 - h. Other (please specify)
13. Are you willing to transmigrate?
- a. Yes b. No
- If yes, why?.....
- If no, why?.....
14. Do you live in modern house or traditional house?.....
- How large is your parcel?.....
- How big is your house?.....
- Do you prefer to live in a modern house or a traditional house?
- a. Modern b. Traditional
- Please state why?.....
15. Do you own your land?
- a. Yes b. No
- If yes, how large is it?.....
- Did you buy it?
- a. Yes b. No
- If no, is it a heritage land or a rental land?.....
- Since when?.....

16. What is the value of your land in 1979?.....
Has this changed since 1969?.....
What was its value in 1969?.....

B. THE PERCEPTION OF THE VILLAGE FARMER

The questionnaire designed to elicit the perceptions of village farmers was the same as that designed for the village heads; refer to page 173- 180.

111. THE QUESTIONNAIRE FOR INTERVIEWING EDUCATED ADULTS
(BETWEEN 15 AND 35 YEARS OLD).

We are interested in knowing your opinions and some general information about your village, especially the changes of agricultural land use and village settlement patterns affected by the tourism development. This is related to the socio-economic structure and Balinese traditional culture.

All the information you give us is expected to be open and true, and will be completely confidential and for the purpose of the planning study only.

Instructions:

Fill in and or choose an answer, and give the required information.

A. The general information about yourself and your village

1. How old are you now?.....

Sex: a. Male b. Female

Marital status: a. Married b. Unmarried c. Divorced

How many children do you have?.....

What is the name of your village?.....

2. How long have you been staying in this village?

(Please circle one)

- a. less than 1 year
- b. 1 - 5 years
- c. 5 - 10 "
- d. 10 - 15 "
- e. more than 15 years

3. Are you a native villager?

- a. Yes b. No

If no, what is your ethnic origin?

- a. Javanese b. Sundanese c. Chinese d. Other (Please Specify)

4. What kind of education did you have?

- a. Never attended school
- b. Primary school: 1,2,3,4,5,6 (select one)
- c. Junior high school: 1,2,3
- d. Senior High school: 1,2,3
- e. Technical Secondary school: 1,2,3
- f. Academy: 1,2,3
- g. University: 1,2,3,4,5
- h. Vocational training

Have you a permanent job?

- a. Yes b. No

If yes, what kind of job.....

If no, why not?.....

5. Is agricultural the major activity in your village?

- a. Yes b. No

If yes, is agricultural land in your village:

- a. Predominant
- b. Proportionate with other land use
- c. Only on limited land
- d. Insignificant

What type of agricultural activity do you engage in?

- a. Wet land rice fields
- b. Dry land rice fields
- c. Cash crops farming
- d. Fishing
- e. Other (please specify)
- f. No other activity

6. Are there any tourist activities or any other associated activities in your village?

- a. Yes b. No c. Don't Know

If yes, what type of tourist activities are there in your village? (Please circle from this list)

- a. Hotel
- b. Restaurant
- c. Travel bureau
- d. Taxi, motor cycle, bike, canoe rental
- e. Artshop
- f. Cultural attraction
- g. Carving
- h. Painting
- i. Ceramics
- j. Other (please specify).....

7. How many people are there in your house?.....

(Please give the age structure)

a. 0 - 4 years.....persons

b. 5 - 9 " "

c. 10 - 14 " "

d. 15 - 19 " "

e. 20 - 24 " "

f. 25 - 29 " "

g. 30 - 34 " "

h. 35 - 39 " "

i. 40 - 44 " "

j. 45 - 49 " "

k. 50 - 54 " "

l. over 55 " "

Are you the head of the household?

a. Yes b. No

If no, with whom do you stay?

a. Parent

b. Other people (rental House)

c. Relative other than parent

8. If you engage in agricultural activity, do you own your agricultural land?

a. Yes b. No

If yes, how long have you owned it?

a. less than 1 year

b. 1 - 5 years

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c. 5 - 10 "

d. 10 - 15 "

e. more than 15 years

Do you rent it, or did you buy it or inherit it?.....

If you bought it, what was the price?.....

9. If you farm, do you farm by yourself or with others?

a. Alone b. With others

10. If you do farming with others, how many other farmers
are involved?.....

How large is your land?

a. 1 ha

b. 1 - 2 ha

c. 2 - 5 ha

d. 5 - 10 ha

e. 10 - 15 ha

f. 15 ha

How much is your average income from farming in a
month or in a year?.....

Do you farm as a permanent or as a part time job?

a. Part time b. Permanent c. None of them

If you do other job, is that:

a. Trading

b. Painting

c. Carving

d. Government service

11. If you do another job beside farming, what is your part time job?

- a. Trading
- b. Painting
- c. Carving
- d. Government service
- e. Hotel employee
- f. Industry
- g. Other (Please specify)

11a. If you are a retailer, do you have your own shop?

- a. Yes b. No

If yes, since when?.....

If no, who is the owner?.....

Where is your shop located?

- a. In the village b. Out of the village

If it is located out of the village where is it?.....

What is your average income per month?.....

11b. If you are a hotel or restaurant employee are you the owner?

- a. Yes b. No

If yes, since when?.....

If no, who is the owner?.....

How long have you worked there?.....

Where is the hotel/restaurant located?

- a. In the village b. Out of the village

If outside the village, where is it?.....

What is your average income per month?.....

11c. If you are an artshop employee are you the owner?

a. Yes b. No

If yes, since when?.....

If no, who is the owner?.....

How long have you worked there?.....

Where is the artshop located?

a. In the village b. Out of the village

If outside the village, where is it?.....

What is your average income per month?.....

11d. If you are an industrial employee, are you the owner?

a. Yes b. No

If yes, since when?.....

If no, who is the owner?.....

How long have you worked there?.....

What kind of industry is it?.....

Where is it located?

a. In the village b. Out of the village

If out of the village, where is it?.....

What is your average income per month?.....

12. If you were able to select any job, what kind of job
would you most prefer?

a. Farming

b. Tourist services

c. Industry

d. Military

- e. Civil servant
 - f. Trade
 - g. Fishing
 - h. Other (please specify)
13. Are you willing to transmigrate?
- a. Yes b. No
- If yes, why?.....
- If no, why?.....
14. Do you live in a modern or a traditional house?
- a. Modern b. Traditional
- How large is your parcel?.....
- What is the size of your house?.....
15. Do you own your land?
- a. Yes b. No
- If yes, what is the size?.....
- Did you buy it?
- a. Yes b. No
- If yes, when?.....
- If no, did you inherit it?.....
- or is it a rental land?.....
16. What is the value of land in your village?.....
- Has land value changed since 1969?
- a. Yes b. No
- If yes what was its value?
- in 1969.....
- 1971.....
- 1973.....
- 1979.....

B. THE PERCEPTION OF THE VILLAGE EDUCATED ADULT

The questionnaire designed to elicit the perceptions of the educated adult group was the same as that used for the village heads; refer to page 173.- 180.

APPENDIX C.2: SECOND ROUND QUESTIONNAIRE *

THE VILLAGERS' EVALUATION OF THE IMPACT OF TOURISM DEVELOPMENT ON TRADITIONAL VILLAGE LAND USE PATTERNS.

The purpose of this questionnaire is to examine the villagers' evaluation of the impact of tourism development on the traditional village land use patterns and its effects on tourism development itself in the foreseeable future.

Name of the village.....

Sub-District.....

Regency of Badung, Province of Bali.

Interviewer.....

Date.....Year.....Time.....

* Translated from the original Indonesian questionnaire which is on file at The University of British Columbia School of Community and Regional Planning

THE LIST OF POLICY STATEMENT TO BE EVALUATED BY THE VILLAGERS
(THE HEAD OF THE TRADITIONAL VILLAGE, THE VILLAGE FARMER, AND
THE VILLAGE EDUCATED ADULT) TO SEEK A CONSENSUS ABOUT IMPACTS
OF TOURISM DEVELOPMENT ON BALINESE TRADITIONAL VILLAGE LAND
USE PATTERNS

Based on the results of our first-round questionnaire, we now want to know your evaluation of the actual or possible changes to the traditional village land use patterns caused by the loss of agricultural land due to tourism development. These changes will affect the socio-culture and economic structure of the Balinese, and ultimately the future of tourism development itself.

All the information you give us is expected to be open and true; it will be completely confidential, and for the purpose of the planning study only.

Please state your attitudes on these following statements;
these are all matters of your free opinion, there are no
right or wrong answers.

Just indicate the extent to which you agree or disagree with each statement; please freely indicate your initial reactions to the following statements.

Place 1, if you agree strongly

Place 2, if you agree somewhat

Place 3, if you disagree somewhat

Place 4, if you disagree strongly

Place 5, if you don't know

Information about the respondent

Name:

Age:

How long have you been in this village?

a. less than 1 year

b. 1 - 5 years

c. 5 - 10 "

d. 10 - 15 "

e. more than 15 years

1. We learned from our first round questionnaire that in most villages the educational level is low; the size of farming land is limited (generally less than 1 Ha per family due to population pressure); the level of income is low; and job opportunity is limited. These conditions are serious problems and solutions difficult.

The policy alternatives to solve those problems are as follows:

- a. To limit population pressure by intensifying the family planning program and/or the transmigration program.
- b. To improve the educational level so that locals will be qualified to fill jobs created by the developments.
- c. To intensify existing agricultural land to the optimal level, and to preserve first class agricultural land to maintain subsistence in farming for the Balinese.

- d. To open job opportunities and to increase per capita income by developing the non-agricultural activities integrated with tourism development, but by promoting its positive effects and minimizing its negative effects.

Do you agree with those alternatives?

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

If you have additional or different alternatives,
please state them.....

2. We learned from our first round questionnaire that agricultural production can support the Balinese way of life only at a minimum level; hence tourism and its related activities are very important to give more job opportunities and to increase Balinese per capita income.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know.

3. Considering that Bali is a tourist area, and since our first round questionnaire indicated a trend for most of

the villages to become involved in tourism development, do you agree that tourist activity should be developed in your village, using the agricultural land?

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

4. We learned from our first round questionnaire that in most villages agriculture is the major activity. In some villages that are directly affected by tourism development, agricultural land use has been changed into tourist development or other associated development (non-agricultural uses). Do you agree that the agricultural land use should be changed into non-agricultural land uses?

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

5. We learned from our first round questionnaire that the Balinese culture is a very important tourist attraction in Bali, in addition to the scenic beauty and unique environment of Bali. Hence the preservation of Balinese Culture, scenery and environment is needed and attention should be paid to the basic aspect that might change it;

alterations to agricultural land use and traditional village land use patterns.

1. Strongly agree, why.....
 2. Agree somewhat
 3. Disagree somewhat
 4. Disagree strongly, why.....
 5. Don't know.
6. Based on our first round questionnaire it seems that there are strong relationships between agricultural activities, traditional village land use patterns, Balinese Hindu religion, and Balinese culture; the traditional village settlement patterns are at the root of the culture. In view of these facts, the preservation of agricultural land especially prime agricultural land in order to maintain agricultural land use, the traditional village settlement patterns and Balinese culture is an absolute necessity.
1. Strongly agree, why.....
 2. Agree somewhat
 3. Disagree somewhat
 4. Disagree strongly, why.....
 5. Don't know
7. The responses to our first round questionnaire show that the traditional irrigation system (subak) is also a factor in maintaining the agricultural land use in each village. Related to the statement in number 6, this traditional

irrigation system must be evaluated carefully in any development which will change the agricultural land use.

1. Strongly agree, why.....
 2. Agree somewhat
 3. Disagree somewhat
 4. Disagree strongly, why.....
 5. Don't know
8. The first round questionnaire shows that (especially in villages under direct influence) tourist development has used the agricultural land and changed its traditional land use patterns. This change has affected the traditional village settlement patterns and ultimately will affect the Balinese culture. Considering these negative effects as well as the positive ones, a possible solution is to limit tourism development in order to preserve agricultural land. This, hopefully will maintain not only Balinese subsistence farming, but also the existence of Balinese traditional village settlement patterns and culture.
1. Strongly agree, why.....
 2. Agree somewhat
 3. Disagree somewhat
 4. Disagree strongly, why.....
 5. Don't know
9. We also learned that, if possible, most Balinese still desire to stay in traditional housing. Hence, preserv-

ation of the traditional village settlement patterns is needed, including its traditional housing types and its Balinese architecture. If preservation is not entirely possible due to the influx of modern housing and the limited availability of land and building materials, then at least the traditional village land use patterns should be preserved.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

10. Land property, land value, and changes to it, are very important factors in the use of agricultural land, especially related to the demand for non-agricultural development. Hence, to maintain the agricultural land use, traditional village settlement patterns and culture for the benefits of society and for future tourism development, it is necessary to have clear land management, control and fair judgement of possible land value changes. Ideally, the possible impact of land use changes should be ascertained based on the evaluation of the villagers.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why
5. Don't know

10.1. To support the above policy statement, law enforcement is needed to preserve the prime agricultural land; to govern possible changes of traditional village land use that cannot be avoided, it is necessary to manage land value changes, transfer of land ownership, and effects on the traditional irrigation system.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

11. In the long run, due to population increase each year, Bali will not likely be able to maintain self-sufficiency by depending only on subsistence farming, without strong support from non-agriculture activities. However, with the intrusion of massive tourism development, then Bali must face up to the following policy alternatives:

11.1 A. total shift from agricultural activities to non-agriculture, in which it will be difficult or impossible to preserve the traditional village land use patterns, culture and total Balinese village environment.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

11.2 Since the objective of tourism development in Bali is to support the Balinese culture and not the reverse, the careful design of optimum land use compatibility for agricultural activities and non-agriculture (i.e. tourism and associated development) is needed to maintain traditional village land use patterns and Balinese village environment.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

11.3 Since there is a limit to the carrying capacity of Bali Island to support its population and tourist demand, some time in the future the critical point will be reached. Under these circumstances the transmigration and family planning programs, together with the distribution of tourists to the other tourist destinations in outer region of Bali, are recommended.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

12. If tourism development will be maximized either by concentration or decentralization, then selection of

first class agricultural land in a given village must have top priority, to minimize the loss of such prime agricultural land and to maintain Balinese traditional village land use patterns. Ideally any tourist development should be in the low class agricultural land.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

13. At this time tourist development is geographically concentrated in some resort areas (Sanur, Kuta, Denpasar, and the new development in Nusa Dua) with the objective of minimizing the negative effects of tourist development on the Balinese culture. In view of positive and negative effects to your village (the loss of first class agricultural land, changes to traditional village land use patterns, and the possible impact of tourist development in the future), do you agree that this concentration policy is a good policy?

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know.

14. Or do you believe that decentralization of tourist development will give a more balanced effect to the whole region and thus be better than concentration?
1. Strongly agree, why.....
 2. Agree somewhat
 3. Disagree somewhat
 4. Disagree strongly, why.....
 5. Don't know
15. In order to preserve agricultural land use, traditional village settlement patterns, and ensure orderly development of tourism in the foreseeable future, ideally the development in Bali should be regulated by following the macro and micro cosmos of Balinese religion (Tri Hita Karana). The traditional village land use patterns should be the basis for siting decision for any development either within or near the village.
1. Strongly agree, why.....
 2. Agree somewhat
 3. Disagree somewhat
 4. Disagree strongly, why.....
 5. Don't know
16. To achieve the goal of maintaining the existence of the traditional land use patterns, strong and clear integrated developmental policy and law enforcement which covers zoning, building and operation permits, and land transactions, is needed. Ideally, the operation permit and land transaction permit should not be issued,

before the zoning and building permits have been approved.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

17. Considering these policy alternatives, it is clear that integrated management and control of the impact of tourism and its associated development on agricultural land use is needed. Since the development will relate to the other sectoral development, the involvement of local and central government is a must.

1. Strongly agree, why.....
2. Agree somewhat
3. Disagree somewhat
4. Disagree strongly, why.....
5. Don't know

We really appreciate the time you have taken, your responses and your free opinions in evaluating the above statements. Many thanks for your cooperation.